In the Name of God

The Compassionate, the Merciful

Proceedings Book

Organizers

Co-Organizer

Contents

In the name of God, the compassionate, the merciful

On behalf of the organizing and scientific committees, we are delighted to welcome all scientists, researchers, students and the honored guests from all over the world and our beloved country to the to the 5th International Veterinary Poultry Congress (5th IVPC) that is to be held from 31 January to 1 February 2016, in Razi International Venue of Iran University of Medical Sciences in Tehran, Iran. The International Veterinary Poultry Congress is a biannual event that used to be traditionally held by Iranian Veterinary Council (IVC), this year was organized by a close cooperation between the IVC and the Iranian Veterinary Poultry Association (IVPA), a non-governmental organization, which is going to be an active member of the World Veterinary Poultry Association (WVPA). This event was initially planned to be an event for close scientific dialogue between scientists all around the world. Several great scientists were invited as keynote speakers which kindly accepted our invitation. However, in some cases the respected university officials did not confirm their trip to for the congress.

In this congress, the organizing committee of the 5th IVPC decided to focus on a special topic and limit the oral presentations to the invited keynote speakers and a limited number of honored authors, who their abstracts were most related to the topic of the congress. Due to the importance of the poultry viral diseases worldwide, particularly in developing countries, the special topic of the congress was selected as **"Poultry Viral Diseases"**.

The scientific committee has reviewed 502 abstracts. Initially, all accepted abstracts were announced for poster presentations. Due to the special focus of the congress, "Poultry Viral Diseases" and the fact that most oral presentations were allocated for keynote speeches, only 60 of most interesting abstracts that were mostly related to the special topic of the congress were selected for oral presentations. Thirteen short keynote speeches were also planned for two days congress. Main keynote speeches were proposed by organizing committee and accepted by the speakers with some modifications. Some of key speeches were selected based on the abstracts submitted to the congress and their authors were requested to present their talks as short key talks. During the congress many posters will be selected by our scientific committee as distinguished poster to compensate the shortage of opportunity for oral presentation by young scientists. Outstanding posters will also be awarded with prizes.

Furthermore, some interesting technical workshops have been organized for the two days event. Exhibition for scientific instruments, laboratory equipments, industrial products, scientific journals and books will also be held by our respected sponsors, companies, national and international pharmaceuticals and vaccine producers who we do acknowledge and admire their dedicated efforts to the industry.

The organizing committee has tried to provide a great opportunity for all scientists, researchers, practitioners and students, involving in veterinary poultry practice, to participate at the congress and discuss the latest research findings. We hope that you find the scientific sessions informative, and opening/closing ceremonies, as well as social events very attractive. We hope this congress also provide our international guests a good opportunity to explore the cultural, historical and architectural variety of Tehran and some other cities of Iran.

The organizers are grateful to the authors for their enthusiasm in sending their works to this congress. We are also thankful to all the reviewers for their painstaking job and the precious time they gave to complete the assessment process. We would also like to express our sincere thanks to all other contributors to the congress, all members of organizing, scientific, executive and student committees and last, but not the least, the Iranian Veterinary Council members, the Iranian Veterinary Poultry Association representatives and Contemporary Conference Organizers Co. whose endeavors made this event possible.

We really look forward to meeting you in Tehran, again at the **6th International Veterinary Poultry Congress (6th IVPC)** on February, 2018.

Sincerely,

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Congress Program

Oral Presentations

Sunday, January 31, 2016

Opening Ceremony
8:30 – 10:30
10:30 – 11:00: Break

Sunday, January 31, 2016
11:00 – 12:00, *Hall 1*

Panel coordinator: Dr Akbari
Members: Prof Bozorgmehri Fard, Prof Pourbakhsh , Prof Peighambari, Dr Charkhkar

Time	***Presentation***	***Speaker***
11:00 – 11:30	Avian Infectious Bronchitis Virus: A Continuing Challenge	MH Bozorgmehri Fard
11:30 – 12:00	Three Separate occurrences of H5N1 viruses Infection through a decade- A Short History	A Shoushtari
12:00 - 13:00 : Poster Presentation **12:30 – 14:00 : Lunch & Refreshment** **13:30 – 14:30 : Poster Presentation**		

Sunday, January 31, 2016
14:30 – 16:00, *hall 1*

Avian Influenza (1)

Panel coordinator: Prof Vasfi marandi
Members: Dr Shoushtari , Dr Bassami , Dr Tehrani

Time	***Presentation***	***Speaker***
14:30 – 15:00	Response to HPAI outbreaks in EU Member States during 2015 Situation as of 07 December 2015	AS Makenali
15:00 – 15:15	Oseltamivir efficacy against avian influenza A virus (H9N2) replication in cell culture	Gh Pourghanbari
15:15 – 15:30	Serological and molecular detection of avian influenza (H9N2), Newcastle disease and infectious bronchitis viruses in indigenous fowls in Ahvaz region	Z Boroomand
15:30 – 15:45	Design and Evaluate a Multiplex PCR Technique in Detecting Infection of Newcastle, Bronchitis and Influenza in Poultry	SD Hosseini
15:45 – 16:00	Avian Influenza from perspective of breeder companies	A Mazaheri

Sunday, January 31, 2016
14:30 – 16:45, *hall 2*

Poultry nutrition and metabolic disorders

Panel coordinator: Prof Kiaee
Members: Prof Rahimi, Dr Farkhoy, Dr Modirsanei

Time	***Presentation***	***Speaker***
14:30 – 14:45	The Effect of Herbal Medicine on Immune System, Blood Biochemical Parameters, Intestinal Microbial Population and Performance of Broilers	Sh Rahimi
14:45 – 15:00	Effect of dietary concentrations of crude protein and amino acids on performance, lymphoid organs weight and immunological responses of broiler chicks	R Jahanian
15:00 – 15:15	Dietary Manan Oligosaccharides on Performance, Intestinal Morphology and Cecal Microflora of Broiler Chicken	H Miranzadeh
15:15 – 15:30	Impact of organic acids on health and performance in layers, with special focus on diformates	C Lückstädt
15:30 – 15:45	Herbal Methionine Bioavailability in Comparison with Synthetic D-L Methionine in Broilers	M Khodadadi
15:45 – 16:00	Copper- methionine changed MMP-2 gene expression in heart of broiler chickens under cold temperature	M Bagheri Varzaneh
16:00 – 16:15	Effect of Adding Phytase Enzyme to Diet and Small Intestine Morphology and Some Blood Parameters in Broiler Chicken	MS Ghodrati
16:15 – 16:30	Evaluation the diagnostic value of T3 measurement in Ascitic broilers	A Shekofteh
16:30 – 16:45	Evaluation of the anticoccidial effects of herbal extracts in experimentally induced Eimeria tenella infection in broiler chickens	E Babayee-Nezhad

Monday, February 01, 2016
08:30 – 10:00, *hall 1*

Avian Influenza (2)

Panel coordinator: Dr Karimi **Members:** Prof Mayahi, Dr Zamani Moghadam, Dr Razmyar		
Time	***Presentation***	***Speaker***
08:30 – 08:45	Dedevelopment of a SYBR Green-Based Real-time RT-PCR Assay for Detection And Quantification of the H9N2 Avian Influenza Viruses	F Eshratabadi
08:45 – 09:00	Development of BHK21 cells transfected with factor X for efficient replication of the low pathogenic influenza virus	Sh Shahsavandi
09:00 – 09:15	Evaluation of H9N2 avian influenza virus replication and tissue distribution in Canadian partridge (Alectoris Chukar) by Reverse Transcription – PCR	M Abbasnia
09:15 – 09:30	Evaluation of H9N2 subtype of Avian Influenza tissue tropism in SPF chickens by virus isolation method	P Bijanzad
09:30 – 09:45	Seroepidemiology and risk factors of avian Influenza H9N2 in backyard poultry of Iran 2013-2014	MH Fallah
09:45 – 10:00	Antiviral and cytotoxic evaluation of Moxidectin against Influenza Virus H9	M Adil Rasheed
10:00 – 10:30: Break		

Monday, February 01, 2016
08:15 – 10:15, *hall 2*

Food safety and public health

Panel coordinator: Dr Meshkat **Members:** Dr Talebi, Prof Asasi, Dr Khoshkhoo		
Time	***Presentation***	***Speaker***
08:15 – 08:45	Prevalence and effects of mycotoxins on health and performance of poultry	M Allymehr
08:45 – 09:00	Assessment of Lead in the Broiler Chickens Raised in Qom Province	Sh Masaeli
09:00 – 09:15	Effect of Dietary Silymarin Supplementation on Performance and Ileal Microflora in Broilers Challenged with Escherichia coli	E Jahanian
09:15 – 09:30	Effect of dietary supplementation of egg yolk antibody on performance and immunological responses of broiler chicks	R Jahanian
09:30 – 09:45	Effects of cinnamon essential oil in combination with nisin on the growth of Salmonella typhimorium in minced chicken meat during storage at refrigerator	M Neyriz Naghadehi
09:45 – 10:00	Effects of ofloxacin residues on health and muscle quality biomarkers in chicken	Zia ur Rahman
10:00 – 10:15	Separate effects of vitamins in oral soluble vitamins (AD3E) on the improvement of broilers with lameness in a poultry unit in the city of Zabol	F Sarani
10:15 – 10:30: Break		

Monday, February 01, 2016
08:30 – 10:00, *hall 3*

Infectious Bronchitis

Panel coordinator: Prof Bozorgmehri Fard **Members:** Dr Momayez, Dr Hashemzadeh, Dr H Hosseini		
Time	***Presentation***	***Speaker***
08:30 – 09:00	Avian Infectious Bronchitis Virus: A Brief Update	A Ghalyanchi Langeroudi
09:00 – 09:15	Changes of cytokine levels during infections by two Iranian bronchitis virus variants: IS/1494/06 & IR-1 like	M Hashemzadeh
09:15 – 09:30	Detection of DY12-2 like IBV viruses In Iraq: The First Report in Middle East	V Almayahi
09:30 – 09:45	H120 and 1/96 strains Combination, protects chickens against challenge with IS-1494/06 like of infectious bronchitis viruses	M Habibi
09:45 – 10:00	Comparison between two different programs of vaccination against Infectious Bronchitis Virus on systemic antibody responses in chickens	H Zahabi
10:00 – 10:30: Break		

Monday, February 01, 2016
08:45 – 10:00, *hall 4*

Detection and Molecular Characterization

Panel coordinator: Dr Bassami **Members:** Dr Akbari Azad, Dr Ghodsian, Dr Abdoshah		
Time	***Presentation***	***Speaker***
08:45 – 09:15	Detection and Molecular Characterization of Seven Respiratory Diseases in Respiratory Diseases Complex in Broiler Farms in Qazvin Province, Iran, 2014	G Akbari Azad
09:15 – 09:30	Prevalence of Extended-Spectrum Beta-Lactamase(TEM) producing Escherichia Coli in poultry Colibacillosis by polymerase chain reaction	Kh Kafshdouzan
09:30 – 09:45	Distribution of iss and irp2 Genes in Escherichia coli Isolated from Chicken with Colibacillosis In Comparison With Healthy Chicken in Sistan	MS Sadeghi Bonjar
09:45 – 10:00	The frequency of tow virulence genes, iss and bor, in Escherichia coli isolated from ostrich feces	S Salari
10:00 – 10:30: Break		

Monday, February 01, 2016
10:30 – 11:30, *hall 1*

Newcastle Disease (1)

Panel coordinator: Prof Peighambari **Members:**, Dr. Akbari, Prof Pourbakhsh, Dr Ghalyanchi Langeroudi		
Time	***Presentation***	***Speaker***
10:30 – 11:00	Emergence of New Genotypes of Newcastle Disease Viruses in Asia, Middle East and Iran	M Vasfi Marandi
11:00 – 11:15	Full-length fusion protein genetic evolution of Newcastle disease virus circulating predominantly in chickens in Iran	Sh Shahsavandi
11:15 – 11:30	The pathogenesis of Newcastle disease viruses isolated from recent outbreaks in broiler and layer farms	MM Ebrahimi
12:00 - 13:00 : Poster Presentation **12:30 – 14:00 : Lunch & Refreshment** **13:30 – 14:30 : Poster Presentation**		

Monday, February 01, 2016
10:30 – 12:00, *hall 2*

Bacterial Respiratory Disease (1)

Panel coordinator: Dr Salehi Ghomi **Members:** Dr Allymehr, Dr Sheikhi , Dr Salehi		
Time	***Presentation***	***Speaker***
10:30 – 11:00	Co- infection of Ornithobacterium rhinotracheale and H9N2 avian influenza virus in SPF Chickens	H Goudarzi
11:00 – 11:15	Molecular epidemiology survey of Mycoplasma synoviae in broiler breeders vaccinated with a live temperature sensitive vaccine, broilers and commercial layers in Iran 2013-2014	SA Ghafouri
11:15 – 11:30	Using a native Avibacterium Paragallinarum isolate for potency assessment of an Infectious Coryza Vaccine	A Nouri
11:30 – 11:45	Molecular identification of genotype B, a new genotype of Chlamydophila psittaci in an African grey parrot (Psittacus erithacus)	A Afshari
11:45 – 12:00	Simultaneous differentiation of Mycoplasma gallisepticum and Mycoplasma synoviae by a duplex-PCR on clinical samples	H Taheri
12:00 - 13:00 : Poster Presentation **12:30 – 14:00 : Lunch & Refreshment** **13:30 – 14:30 : Poster Presentation**		

Monday, February 01, 2016

10:30 – 12:15, *hall 3*

Bacterial Diseases (2)

Panel coordinator: Dr Banani **Members:** Prof Hasanzadeh, Prof Zahraei Salehi, Dr Sadrzadeh		
Time	***Presentation***	***Speaker***
10:30 – 11:00	First report of Gallibacterium isolation from layer chickens in Iran	S Ataei Kachooei
11:00 – 11:15	Clinical evaluation of three respiratory medicinal compounds in broiler chickens experimentally infected with respiratory complex agents	K Asasi
11:15 – 11:30	Susceptibility Pattern of Escherichia Coli Isolates from Broiler Farm to Antibacterial Agents in Semnan, Iran	S H Emadi Chashmi
10:30 – 11:45	The effect of CpG ODN against intestinal colonization of Salmonella enteritidis in broiler chickens	E Abootorabi Rize
11:45 – 12:00	RAPD-PCR and drug resistance pattern of Staphylococcus aureus isolates recovered from pet birds	SS Bagheri
12:00-12:15	Phenotypic and genotypic investigation of antibiotic resistant E. coli isolates during a rearing period of broiler farms	B Abdi-Hachesoo
12:15 - 13:00 : Poster Presentation **12:30 – 14:00 : Lunch & Refreshment** **13:30 – 14:30 : Poster Presentation**		

Monday, February 01, 2016
14:30 – 16:00, *hall 1*

Newcastle Disease (2)

Panel coordinator: Dr Shoushtari **Members:** Dr Feizi , Dr Ghafouri, Dr SD Hosseini		
Time	***Presentation***	***Speaker***
14:30 – 15:00	Rescue of recombinant Newcastle disease virus (NDV); assembly and recovery	A Molouki
15:00 – 15:15	Immunity induced by a rHVT-ND vaccine - Range of protection and effect on challenge virus shedding	V Palya
15:15 – 15:30	Efficacy and transmissibility of Newcastle disease vaccine strain of I-2 against a field isolate of virulent ND virus (JF820294.1) in village chicken	H Habibi
15:30 – 15:45	Master Seed Preparation for Heat Resistant Vaccine Production Against Newcastle Disease	M Abdoshah
15:45 – 16:00	Identification of NDV isolated from the recent outbreak In the Ardestan's broiler farms	Z Mojahedi

Monday, February 01, 2016
14:30 – 16:00, *hall 2*

Bacterial Respiratory Diseases (3)

Panel coordinator: Prof Asasi
Members: Dr Goudarzi, Dr Rajabi, Dr Haghbin Nazarpak

Time	*Presentation*	*Speaker*
14:30 – 15:00	Ornithobacteriosis in the poultry industry of Iran and Ornithobacterium rhinotracheale (ORT) vaccines	M Banani
15:00 – 15:15	Molecular study of outer membrane protein H gene (ompH) among avian Pasteurella multocida isolates from Iran	S Haghnazari
15:15 – 15:30	Distribution of the major Outer Membrane Proteins among Pasteurella multocida isolated from poultry in Iran	Z Babaei rik
15:30 – 15:45	Investigating the polymorphism of TonB gene structure among avian isolates of Pasteurella multocida	M Feizabadi Farahani
15:45 – 16:00	Investigetion of Avibacterium paragallinarum in breeder farms using culture and polymeras chain reaction	R Barzegari Naeini

Monday, February 01, 2016
14:30 – 16:15, *hall 3*

Viral Diseases

Panel coordinator: Prof Keyvanfar **Members:** Dr Barin , Dr P Khoshkhoo , Dr Kaffashi		
Time	***Presentation***	***Speaker***
14:30 – 15:00	Ardehal Variant" Involves in Reovirus-Associated Arthritis and Tenosynovitis Outbreaks in Broiler Flocks	H Hosseini
15:00 – 15:15	Molecular detection of pigeon herpesvirus, fowl adenovirus and pigeon circovirus in pigeons refered to Mashad	O Behrouzi nasab
15:15 – 15:30	The first detection of Goose Circoviruses in a Flock of Graylag Goose (Anser anser) in Tehran, IRAN.	M Haddadmarandi
15:30 – 15:45	West Nile virus in birds and poultry and its implication on public health	V Savić
15:45 – 16:00	New strain of S1 gene of ARVs in broiler breeder of Iran	M Hedayati
16:oo – 16:15	Development and Validation of a One-Step Real-Time PCR Assay for Detection of Subtype H5 Avian Influenza Virus	SGh Mirzaei

Monday, February 01, 2016
14:30 – 16:15, *hall 4*

Immune system

Panel coordinator: Dr Ataei **Members:** Dr Salehi Ghomi, Dr Ebrahimi, Dr Goudarzi		
Time	***Presentation***	***Speaker***
14:30 – 15:00	Inclusion Body Hepatitis Associated with Fowl Adenovirus in Broiler Flocks	S Charkhkar
15:00 – 15:15	Innovative adjuvants improve protection conferred by poultry vaccines	J Ben Arous
15:15 – 15:30	Alleviating effects of Satureja Khuzestanica extract on broilers which were exposed to cold stress situation on performance parameters and antibody responses to Newcastle disease vaccination	S Kor
15:30 – 15:45	The effects of adding antibiotic to live NDV vaccine on evolution of conjunctiva-associated lymphoid tissue structure and in stimulating antibody response with eye drop route by ELISA and HI tests	SH Vaziri
15:45 – 16:00	Hematological values in domestic pigeons naturally infected with Mycobacterium avium subsp. avium	K Parvandar Asadollahi
16:00 – 16:15	Effect of apple cider vinegar and commercial vinegar on growth, histopathological and serological parameters in broiler chicken undergone imbalanced diet	AH Asl Najjari

Workshop Scheduled Program

Sunday January 31, 2016

Hall	Time	Title	Organizer	Presenter
4	12:00 - 13:00	Control of poultry respiratory diseases with focus on infectious bronchitis	Karoon Co.	Vladimir Savic
5		Protect type concept and control of Infectious Bronchitis	Sava Pars	Bertrand LE TALLEC
6		Latest progress in avian bronchitis Disease	MSD Golbid	Jacobus Joannes de Wit
7		Avian Influenza from perspective of breeder companies	Parsian Exir Aria	Atoussa Mazaheri
4	13:30 - 14:30	ALTERNATIVE MEDICINE - 1	Arshia Darou	Ali Zeinali
5		7 Key success factors to control the respiratory disease	Sava Pars	Bertrand LE TALLEC
6		Bronchitis vaccination program and serology results interpretation	MSD Golbid	Jacobus Joannes de Wit
7		Technical comments for salmonella sampling and diagnosis	Viva Pars	Richardson curt Edmond

Monday February 01, 2016

Hall	Time	Title	Organizer	Presenter
1	12:00 - 13:00	Stop the GUMBORO Cycle – season2	Sava Pars	Francois ROULLEAU
2		Immunosuppressive viral diseases in poultry with focus on control of Infectious Bursal Disease	Karoon Co.	Vladimir Savic
3		Learn more about Monoglycerides as acidifier alternatives	Vetarteb	Dr.Farzin Wafadar Dr.Andre Meeusen
4		----------	Asineh	Bart van lirdam
5		Benefits of in-farm drinking water supplementation	Parsian Exir Aria	Saúl Jose Escobero
6		ALTERNATIVE MEDICINE - 2	Arshia Darou	Dr.Ali Zeinali
7		Diagnostic principle and laboratory procedure of Salmonella	Tamin Ehtiajat Dam	Ioannis Marromatis
2	13:30 - 14:30	Quality and monitoring of the spray vaccination to control Bronchitis	Sava Pars	Francois ROULLEAU
4		Control of poultry diseases including Avian Influenza Via reducing feed contamination	Vivapars	Carlton John Simon Russell
5		Salmonella Control	Tamin Ehtiajat Dam	Ioannis Marromatis
6		----------	Asineh	Bart van lirdam

Congress Program

Poster Presentations

January 31, 2016- 10:30- 13:00		
No	**Code**	**Title**
1	4	Influence of Silver Nanoparticles Coated on Clinoptilolite on Crop Microbial Population of Broiler Chickens
2	10	Antibiotic resistance patterns of Escherichia coli strains isolated from broiler chicken farms in northwest of Iran
3	13	An evaluation of alfalfa for molt induction on intestinal morphometric parameters and performance of commercial laying hens
4	14	Hormonal Changes, Immonological Respose and Date of Reentry in Laying Hens Fed by Alfalfa Molt Diet
5	16	Infestation of coot (Fulica atra) to Amidostomun fuligulae from Anzali Seaport
6	17	Colpocephalum fregili Denny 1842 (Amblicera, Menoponidae) on Magpie: The first case report in Iran
7	18	Comparative evaluation of therapeutic effect of sulfadiazine-trimethoprim, oxytetracycline, enrofloxacin and florfenicol on Staphylococcus aureus-induced arthritis in broilers
8	19	Evaluation of toxicity due to high dose or long term administration of sulfadimethoxine-trimethoprim on liver and kidney function biochemical parameters of broilers
9	20	Effect of Dietary Supplementation of Mint and Turmeric Powder on Serum Enzyme Activities and Proteins Alterations in Broiler Chicks
10	21	Effect of Different Levels of Mint and Turmeric Powder on Some Serum Biochemical Parameters in Broiler Chicks Fed on Diets Enriched Soybean Oil
11	22	Effect of Escherichia coli Challenge on Performance and Immunological Responses in Broiler Chicks
12	24	Effect of supplemental mannan-oligosaccharides on performance and immunological responses of Escherichia coli-challenged laying hens
13	25	Extruded soybean meal improves performance and carcass yield in broiler chicks
14	26	Application of ideal protein and amino acids concept in feed formulation for broiler chicks and its effect on performance parameters
15	29	Effect of dietary genistein supplementation on immune functions and serological indices in broiler chickens
16	30	Isolation and molecular characterization of Newcastle disease virus circulating in broiler flocks of Northwest Iran
17	31	Survey of the poultry carcass seizing causes in 7 slaughterhouses located in Kermanshah province, Iran
18	33	Seroprevalence survey on Reovirus infection of broiler chickens in Western Provinces of Iran
19	34	The effect of feeding mustard seed meal (Sinapis arvensis) on thyroid hormones and liver enzymes in Japanese quails (Coturnix coturnix japonica)
20	36	The evaluation of antiviral effects of aqueous extracts of two types onion (red and yellow) against avian influenza virus subtype H9N2
21	37	Spondylitis in broiler breeder farm in west Azerbaijan province: A case report
22	38	Evaluation the effects of some anticoccidial drugs in Ross broiler chickens
23	43	THE EFFECT OF THYME EXTRACT (THYMUS VULGARIS) ON IMMUNE ORGANS OF BROILER CHICKENS
24	45	Virulence determination of poultry Escherichia coli isolates by intratracheal route
25	47	Serological survey of avian Metapneumovirus in broiler chickens of West of Golestan province in Iran
26	49	Cadmium and lead Concentrations in Testicular Tissue and their Associations with Testosterone Concentrations in Male Chickens
27	50	Determination of calcium and phosphorus concentration in the seminal plasma and their relationships with semen characteristics in rooster
28	51	Effect of Palmitoleic acid on quality of rooster semen during chilled storage
29	52	Effect of rooster semen enrichment with oleic acid on the quality of semen during the in vitro storage
30	53	The effect of two different programs of vaccination with foreign Infectious Bursal Disease vaccine on systemic antibody responses against Newcastle vaccine in chickens

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No	**Code**	**Title**
30	53	The effect of two different programs of vaccination with foreign Infectious Bursal Disease vaccine on systemic antibody responses against Newcastle vaccine in chickens
31	55	Molecular analysis of Cryptosporidium species in industrial and native broilers in Guilan province
32	58	Ovarian adenocarcinoma with transcoelomic metastasis in a native chicken
33	59	Significant statistical data from pericarditis complication histopathologic patterns in broilers
34	60	Ascites syndrome and its causative agents in diagnosis of pathological lesions in broiler chickens and its relation to geographical location area in Sanandaj
35	61	Prevalence of pathologic lesions in the heart of broiler chickens to observation of lymphoied tumors due to marek diseas
36	62	Prevalence of pathological lesions of round heart disease (RHD) in 7 weeks broiler chickens
37	66	Histopathological analysis of Cryptosporidium species in industrial and native broilers in Guilan province
38	67	Prevalence of hemorrhage in the heart of Broilers and determination the histopathological patterns associated with it
39	68	Prevalence the relation between Cardiomyopathy of broiler chickens with the weights from removed hearts in Par slaughterhouse of Sanandaj
40	70	Anesthesia and analgesia in Chough following intranasal administration of diazepam, midazolam and xylazine with ketamine: Clinical evaluation
41	71	The First Report of Laemobothrion maximum (Phthiraptera) from Common Buzzards (Buteo buteo) in Iran
42	73	Prevalence of increasing cardiovascular diseases by increasing average age of broiler chickens & its economic importance by using statistic data from removed hearts in Par slaughterhouse of Sanandaj
43	74	The effects of thyme essential oil on shelf life of vacuum-packaged chicken breast meat
44	78	Effect Of Food Intake On The Expression Of Peroxisome Proliferator-Activated ReceptorϒGene In The F1 Follicle Of Broile Breeder Hens
45	80	Serologic survey of hemorrhagic enteritis virus infection in some turkey flocks
46	81	Study the effect of physical size of sodium zeolite A on health and growth indices of broilers fed rations contaminated with aflatoxin
47	85	Survey on Sulfonamide resistance gene (sul1) in Escherichia coli isolates from broilers in Urmia
48	86	Survey on Tetracycline resistance gene (tetA) in Escherichia coli isolates from broilers in Urmia
49	88	Molecular screening of one week old broilers for Mycoplasma gallisepticum contamination
50	90	Evaluation the cross immunity of a hitted trivalent avian colibacillosis vaccine in broiler chickens
51	91	Study of the (iutA, sitA, traT, tsh) genes in Escherichia coli isolated from human urine and poultry Colibacillosis sample
52	93	The bacterial agents of low hatchability in a canary aviary in Ahvaz, Iran
53	98	A survey on influenza HI antibody titers (H9N2) of broiler chickens in mazandaran province.
54	100	Molecular Characterization and Phylogenetic Study of the fusion genes of Newcastle disease Viruses Isolated in Ahvaz, Iran, 2012–2013
55	101	Immunogenicity of live and killed infectious bursal disease vaccines alone or in combination in broiler chickens
56	102	Phylogenetic characterization of the partial hemagglutinin protein genes of three avian influenza viruses (H9N2) isolated in Ahvaz broiler flocks during 2011-2013
57	104	A Survey of Ectoparasites of Domestic Pigeons (Columba livia domestica) in Tabriz, Iran
58	105	A survey of gastrointestinal helminthes infection in commercial layers
59	106	Gastrointestinal parasites of domestic ducks in Amol north of Iran
60	107	Serological investigation of CIAV Infection among broiler chicken flocks in Tabriz city
61	111	Serological evidence of chicken infectious anemia virus (CIAV) in broiler flocks of Kerman province
62	112	Comparison between Haemagglutination Inhibition Test and Enzyme-linked Immunosorbent assay in Evaluation of Newcastle disease antibodies

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No	**Code**	**Title**
63	113	Investigation Of a Herbal Mixed Product For Management Broilers Rearing
64	114	Immigrant Birds Seromonitoring For AI And ND In Gavkhouni Area
65	115	Pathogenesis Investigation Of An Isolated Mycoplasma Galisepticum by Embryo Chorioallantoic Membrane Inoculation
66	116	Resistant Motile Salmonellosis In Some Black Swans
67	117	The effect of service room temperature in a layer breeder farm on primary embryo mortality in hatchery in winter
68	118	Histochemical study of the Infundibulum of the oviduct in laying chukar partridge
68	119	Comparison effect of Saccharomyces cerevisiae and AGP on Morphology of Intestine of Broilers
70	120	Objectives: One of procedures to replacement of antibiotic growth promoter in broiler feed, to added probiotic in feed. The probiotics had able to increase immune parameters, gut health and increased liveability of birds. Materials & Methods: In cu
71	121	Comparison Effects of Satureja Hortensis and Thymus Vulgaris Extract with Antibiotic Growth Promoters on Immune Organ and Immune Cells of Broilers Challenge by SRBC
72	123	Observation and identification E. coli infection in Male layer breeder of bovans breeds with Eye symptoms in Iran
73	124	Effect of artichoke concentrate on layer performance in commercial scale
74	127	Effects of Royal Jelly, Honey and Ethanolic Extracted Propolis on Immune System of Japanese Quails (Coturnix coturnix japonica)
75	128	Comparative study of Cryptosporidium spp. prevalence in broilers and native chickens in Tabriz suburb
76	129	Effect of Thermal Manipulation During Pre and Post Hatch on Intestinal Bacterial Populations in Male Broilers Challenged by Chronic Heat Stress
77	131	Molecular characterizations of closteridium perfringens isolated from healthy broilers and broilers with mild necrotic enteritis in east north of Iran
78	132	The effect of service room temperature in a layer breeder farm on primary embryo mortality in hatchery in winter
79	133	Evaluation of the effect of a herbal drug, immunofin on Newcastle disease vaccine respons in broiler breeder poultry
80	140	Pathologic and Molecular Study of an Unusual Avian Hepatitis E Infection in Commercial Layers in Iran.

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No	**Code**	**Title**
1	144	Influence of exposure time to neutral electrolyzed water on the reduction of contamination to Salmonella typhimurium and E.coli on skin and fresh poultry fillets
2	146	Seroprevalence of Newcastle disease virus and Avian influenza virus antibodies in breeder flocks of West Azarbayjan
3	147	Seroprevalence of Newcastle disease virus and Avian influenza virus antibodies in breeder flocks of West Azarbayjan
4	148	A Survey on effects of several ND Live vaccines on HI antibody titers in broiler chickens
5	151	Prevalence and Antibiotic susceptibility of Salmonella strains isolated from poultry farms in Urmia, Iran
6	152	Phylogenetic group determination of Escherichia coli isolated from broilers and layers with colibacillosis
7	153	Study the effect of physical size of clinoptilolite and sodium zeolite A on meat quality of broilers fed rations contaminated and noncontaminated with aflatoxin
8	156	Study on the potential immunization of thermo-stable ND.TR.IR vaccine using different methods of vaccination in village chickens
9	157	An investigation into Gram negative bacterial agents responsible for early mortality in Japanese quail chicks
10	159	Serogrouping and Drug Resistance Analysis of Salmonella spp. Isolates from Broiler flocks
11	160	Swollen head syndrome in an ostrich farm
12	161	Detection and Identification of Avian Hepatitis E Virus in Broiler Breeder Flock in Iran
13	162	Simultaneous infection with avian influenza subtype H9N2 Metavirus Broiler in Fars Province
14	164	Newcastle Virus Antibodies In Gallus Gallus
15	165	Mites And Insects Diagnosed In Turkeys And Quails
16	166	Plaque formation by Newcastle virus strain V4 on cell culture and characterization with RT-PCR
17	167	Investigation on Prevalence of Pigeons Contamination with Protozoa Trichomonas Gallinae in Qazvin City During 2014
18	170	Molecular identification of Ornithobacterium isolates from poultry in Markazi Province
19	174	Genotypic studies of Chlamydia in turkey flocks
20	182	Anatomical study of alimentary canal in Red-billed chough (Pyrrhocorax pyrrhocorax)
21	183	Effects of Peripheral Metabotropic Glutamate Receptor Antagonist and Nociceptin/orphanin FQ Receptor Antagonist on Feeding in Japanese quail
22	186	Experimental concurrent infection of Avian Influenza (H9N2) and Infectious bronchitis virus serotype 793/B in SPF chickens
23	187	Evaluation the Effect of Enterococcus Facium Isolates from Coracias Garrulus and Commercial Probiotic on Immune System and Intestinal Flora of Broiler Chickens
24	188	The effects of different levels of the amino acid methionine on performance and carcass characteristics in Broiler
25	189	Effects of Enterococcus Facium Isolates from Coracias Garrulus and Commercial Probiotic on Immune System and Intestinal morphometry and microbial Flora of Japanese Quail
26	191	Sperm-host glands in the Chukar Partridge (Alectorischukar)
27	194	Effects of Biomin® on performance parameters and intestinal morphology of Japanese quail (Coturnix coturnix japonica) reared under normal and cold stress conditions.
28	195	Antimicrobial susceptibility of Staphylococcus aureus isolated from Broiler breeder arthritis in northwest of Iran
29	196	Serological survey on chicken infectious Anemia virus in broiler flocks in Urmia, Iran
30	198	Sensitization of isolated coliform bacterial strains from infected commercial broiler flocks against synthetic antibiotic
31	199	The prevalence of different diseases in commercial broilers flocks referred to veterinary clinic of Shahrekord University
32	200	Prevalence of Trichomonas gallinae in domestic pigeons (Columba livia domestica) referred to veterinary clinic of Shahrekord University

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No	**Code**	**Title**
33	202	The prevalence of different diseases in domestic pigeons referred to veterinary clinic of Shahrekord University
34	203	The prevalence of different diseases in domestic canaries (Serinus canaria domestica) referred to veterinary clinic of Shahrekord University
35	204	A comparative survey on different hematological parameters (hemogram) of three species of prey birds in Shahrekord area
36	205	The first recording of Pectinopygus forficulatus (chewing lice) in Great White Pelican (Pelecanus onocrotalus) in Shahrekord, Iran
37	206	Effect of Haemoproteus columbae infection on the hemogram of the Pigeons (Columba livia domestica)
38	207	Effect of Haemoproteus columbae infection on the biomarkers of antioxidant system of the Pigeons (Columba livia domestica)
39	209	A rare report of gizzard impaction by sands in lesser spotted eagle
40	210	The first report of patellar luxation in golden eagle (Aquila chrysaetosdaphanea) in Iran
41	220	Effect of MOS supplementation on various physiological indices of health in Avian Influenza (H9N2) challenged broilers
42	221	Haemoproteus spp. infection among pigeons (Columbiformes) in a birds' garden in Iran
43	222	Study of Effect of Berberis Vulgaris Aqueous Extract on Escherichia coli in Commercial Chicken Soup
44	223	Gene expression of heat shock protein (HSP60) in the brain of cold induced pulmonary hypertensive chickens
45	224	black spot in the Canaries:case report
46	225	Visceral urate deposition in a Polish hen
47	228	report of reovirus infection in broiler farms from vaccinated breeder
48	229	Efficacy of the thermostable Newcastle disease vaccine strain I-2 in broiler chickens challenged with highly virulent virus
49	230	Acute phase responses in commercial broiler chickens experimentally infected with a highly virulent Newcastle disease virus strain
50	231	Effect of sex ratio on production and hatchability of broiler breeder flock
51	232	Evaluation of lead effect on intestinal villi morphology and immune response to Newcastle live vaccine following oral administration of lead as heavy metal in Japanese quail
52	233	Evaluation of vitamin C effect on intestinal villi morphology and immune response to Newcastle live vaccine in Japanese quail
53	235	Antibiotic suseptibility testing of Escheria coli isolated from poultry carcasses referred to laboratory in Sabzevar in the first 6 months of 1394, using antibiogram test
54	236	Phylogenetic Analysis Based on HA Gene Sequences of H9N2 Subtype in Najaf Province, Iraq
55	240	Isolation of campylobacter jejuni and C.coli from quail, Partridge, and Ostrich meat
56	242	Prevalence and Antimicrobial Resistance of Salmonella Isolated from Retail Raw Turkey, Ostrich and Partridge Meat in Iran
57	243	Detection and Identification of Campylobacter spp. from Retail Raw Chicken and Turkey Meat in Iran
58	244	Subpopulation characterization of Newcastle disease virus LaSota strain by plaque purification technique
59	246	CLINICAL AND HISTOPATHOLOGICAL EVALUATION OF AVIAN SALMONELLOSIS : ISOLATION AND IDENTIFICATION STUDY
60	247	The effects of Infectious Bronchitis disease on depopulation of broiler flocks in Iran (2012-2013)
61	248	The effect of Interferon Gamma (IFN-gamma) Promoter Genotype on Transcription Factor Binding Sites in Local Chicken
62	249	Identification of repressive elements and functional nuclear factor binding sites in Gal2 gene in Khozestan local chicken
63	251	Antimicrobial resistance profile of Salmonella isolates from poultry flocks around Sanandaj, Kurdestan

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No	**Code**	**Title**
64	252	Morphopathological characteristics of avian pox outbreak in backyard turkeys
65	257	Survey of Salmonella infections in poultry farms around Mashhad city
66	259	Evaluation the effects of H9N2 Avian influenza virus on kidney tissue in SPF chicks
67	260	Detection of Fowl Adenovirus from broiler flocks in Qom and Kashan during 2011-2012
68	264	Comparative of immune response against Influenza disease vaccine in three strains of broiler chicks, Ross 308, Cobb 500 and Hubbard F15
68	272	Identification of cross-reactive immunogenic proteins of fowl cholera causing of Pasteurella multocida serotypes A:1, A:3, and A:4, isolated in Iran.
70	273	The first report of chronic myelogenous leukemia in a Peafowl (Pavo cristatus)
71	274	The impact of different chemical stabilizers on stability of the avian infectious bronchitis vaccine
72	275	The survey of ectoparasites infection of Columba livia in Lahijan city, Gilan, Iran
73	276	Comparative survey of inactive and live (Avinew) vaccines in broiler chickens
74	277	Comparative survey of inactive and live (Clone) vaccines in broiler chickens
75	278	Comparative survey of inactive and live (La Sota) vaccines in broiler chickens
76	279	Isolation Of Mycoplasma from Infecting quail' lungs rearing in the Kerman Province ,Iran
77	280	Effect of In Ovo Injection of Vitamin C During Incubation on Hatchability
78	284	Molecular Characterization of Eimeria Species in East Azarbaijan Province Poultry Farms
79	286	Betaine as an antioxidant agent in poultry nutrition
80	288	Evaluation of immune responses of commercial poultry vaccinated with Razi Newcastle disease vaccines against recent isolate

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No	**Code**	**Title**
1	289	A Haemoproteus infection in a Common Kestrel (Falco tinnunculus) – First report in Iran
2	290	Evaluation of a liquid prebiotic in feed and water of heat stressed broilers
3	291	Serotyping of salmonellae isolates from packaged broilers sold in chain stores of Tehran
4	292	Evaluation of Green Muscle Disease in broilers, northern Iran
5	297	Antimicrobial Susceptibility Pattern of Escherichia Coli Isolates to Antibacterial Agents in Urmia, Iran
6	298	Study of the effects of adding 1% Inulin prebiotic in feed on quail intestinal microflora and some growth parameters
7	299	A comparison between 4 and 8 agglutinin units in HI NDV test and relation between ELISA and HI test
8	300	To evaluate the effect of thyme alcoholic extract on Bacillus subtilis with MIC and MBC methods
9	301	A study on pasteurellosis in layer and broiler breeder in mazandaran and khorasan in recent years 2013-2015
10	302	Cholesterol resorption from yolk residuals and physiological adaptive indicators in broiler chicks exposed to neonatal fasting in response to in yolk sac administration of carvacrol
11	307	Comparison of Histological Lesions of Bursa of Fabricius after Challenge in Vaccinated and Non vaccinated SPF chickens
12	308	Gastrointestinal Contrast Study in Common Myna (Acridotheres tristis) with Iodixanol, Iohexol and Barium Sulfate
13	311	Master Seed Preparation for Heat Resistant Vaccine Production Against Newcastle Disease
14	314	Investigation of continues and pulse administration of Doxycycline in treatment of colibacillosis
15	316	A case report of avian leukosis/sarcoma in a backyard chicken flock in Shahrekord city with higher mortality rates
16	317	Histopathological evaluation of Newcastle and Influenza(H9N2) bivalent killed vaccines in broiler chickens.
17	318	Surgery treatment of crop burn in an African grey parrot
18	319	Evaluation of microbial contamination rate of the hatching egg shell and egg-in-touch points in a broiler breeder house
19	321	Effect of growth temperature and biofilm age on the resistance of Salmonella Typhimurium biofilms to bacteriophage in chicken meat model
20	324	Farm-level risk factors for enrofloxacin resistance in Escherichia coli isolated from broiler chickens during a rearing period in Iran
21	325	Multi-drug resistance in cloacal and pericardial E. coli isolated from broiler chickens infected to colibacillosis
22	326	Orthopedic surgery of radius and femur fracture and post operation nutritional management in European eagle owl (Bubo bubo): Case Report
23	328	Isolation Of Mycoplasma from Infecting the quail' lungs rearing in Kerman Province ,Iran
24	329	Detection of Astrovirus in Broiler flocks of rodsar city
25	330	Detection of avian Reovirus in boiler flocks of Rodsar city
26	333	The Effect of a Dietary Prebiotic on Japanese Quails Growth Performance
27	336	Study on prevalence and species diversity of ectoparasites and fecal parasites of ornament birds in Kashan
28	337	Identification of NDV isolated from the recent outbreak In the Ardestan's broiler farms
29	338	Appraisal of a liquid yeast product on growth performance of Japanese quails
30	341	A clinical case of chicken infectious anemia disease and virus DNA detection in naturally infected broilers in Shiraz, Iran
31	342	Comparison of alleviating effects of corn, wheat or switched corn-to-wheat based diets on reducing transportation stress in broilers
32	343	Molecular detection of chicken infectious anemia virus(CIAV) in broiler flocks of Tehran and Qazvin in 2014

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No	**Code**	**Title**
33	345	Evaluation the Clinical Utility of Troponin to Detect Ascites in Broiler
34	346	The effects of adding sterile poultry dried waste in broiler's diets with different energy levels on performance parameters and humoral immunity responses to Newcastle vaccines
35	347	Transportation stress in broiler chickens and the effects of different levels of Satureja Khuzestanica extract in alleviating the deleterious condition
36	348	Production of a monoclonal antibody against Chicken IgG (IgY)
37	349	Effect of different levels of Ropadiar® on performance parameters and intestinal morphology of Japanese quails (coturnix coturnix japonica)
38	350	Detection of avian influenza virus of H9 subtype in the tracheal swabs of experimentally infected chickens by RT–PCR
39	351	Report of the Chinese Genotype of Infectious Bronchitis Virus (QX-type) in a broiler flock in Province Ardabil, Iran
40	354	Histopathologic and bacteriologic study on broiler condemned livers in Shahre-Kord industrial poultry salaughterhouse
41	355	Survey quantity and symptom of great CRD prevalence to commercial broilers herd in zahedan 1393
42	356	Prevalence of blood parasites in domestic pigeons (Columba liviadomestica) in ChaharmahalVaBakhtiari Province, Iran
43	357	The effect of Extracted Mentha Piperata in Water on Ileum Escherichia coli Population, Digestive Enzyme and Serum in Broiler Chickens
44	358	The effects of tetracycline administration on some serum biochemical parameters in Broilers
45	359	The study on bacterial contamination of eggs in ChaharmahalVaBakhtiari Province, Iran
46	361	Antimicrobial Resistance Profile of Salmonella isolates from Poultry Flocks Around Isfahan
47	362	Seroprevalence of Mycoplasma synoviae in west Azerbaijan province Commercial broiler farms
48	365	Report of reovirus infection in broilers farm from vaccinated breeder
49	366	Effects of different levels of probiotic and garlic on biochemical and immunological parameters in broiler chickens
50	367	Mycoplasma contamination in commercial Pullet Chicks in Tehran province
51	368	The study of mycoplasma contamination in commercial layer flocks in Tehran province
52	369	Detection of Eimeria species in broilers and layer chickens with clinical symptoms and pathology in Tehran and Alborz provinces
53	371	The study on effect of Turbo tox on humoral immune response in broiler vaccinated against infectious Bronchitis
54	372	Evaluation of some chemical and microbial factors of broiler farms drinking waters in Oshnavieh city- Iran
55	373	The study on effect of Vitamin E and C on humoral immune response in broiler vaccinated against Infection Bursal disease
56	375	A Survey to Examine Candida Transmission through Yolk Sac and Amniotic Sac in Chicken Embryos
57	377	Effects of Satureja hortensis essential oil in combination with nisin on the growth of Staphylococcus aureus in minced chicken meat during storage at refrigerator
58	380	Case Report : Drug toxicity of multivitamins in a quail
59	381	Case Report of Ankylosing Spondylitis in a broiler breeder chiken caused by enterococcus cecorum
60	382	Etiological evaluation of the crop fistulae in psittacine birds were referred to the Iranian veterinary clinics
61	384	Case Report of Myopathy of the Deep Pectoral Muscle in broiler chicken
62	386	Coli septicemia in commercial partridge chicks: the most common causes of mortality in Iranian partridge chicks after hatching
63	387	Study of japanes quail,s blood Glucose changes after consume different amount of mustard seed
64	388	Invitro study on antibacterial effects of cinnamon ethanolic extract against Staph. aureus and E. coli
65	389	Case Report of myxoma in a Jiroftian bird (gray francolin)

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No	**Code**	**Title**
66	391	Effects of the in ovo injection of 25-hydroxycholecalciferol on the yolk characteristics of chicken embryos
67	392	Etiological evaluation of the most common causes of poor fly and racing performance in pigeons were referred to the veterinary school of Shahid Bahonar University
68	393	Case Report of a Mynah (Acridotheres tristis) with hepatosplenomegaly causes by Isospora serini
68	394	Effect of blood urea on weight , after adding different levels of mustard seed to diet in the Japanese quail
70	395	Effect of hen age and maternal vitamin D source on performance, hatchability, bone mineral density, and progeny in vitro early innate immune function
71	396	Evaluate the effect of nutrient density and lighting regime on biochemical profile of broiler
72	397	The effects of nano silver on growth performance in broiler chicks
73	398	The effect of Antibiofin®on immune response against Newcasttle disease vaccine in broiler chicken
74	399	Effect of different levels of whole wheat on performance and gut health of native laying hens on the organic standards
75	400	Combination of Thymol and Carvacrol against Trichomonas gallinae
76	401	Therapeutic Effects of Sulfaclozine on Intestinal Morphology and Oocyst Shedding in Chicken Experimental Coccidiosis
77	403	Evaluation of Three Antibiotic Residues in Muscle and Liver Samples of Broiler Chick Carcasses Collected From Slaughterhouses of Lorestan Province
78	404	The Isolation of Antibiotic-Resistant Salmonella from broiler farm in babol
79	405	3D and 2D CT scan and Anatomic Study of the Scleral Rings in the Buteo buteo
80	407	Serological survey of Avian influenza (H9N2) in commercial farms in Varamin during 1394

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No	**Code**	**Title**
1	408	CT Scan-Anatomic Study of the Orbitocranium, Interorbital and Optic Foramina of the skull of the Long-legged buzzard (Bueto Rufinus)
2	409	Influence of dietary probiotic inclusion on post molt laying hen performance and egg quality
3	410	CT Scan-Anatomic Study of the Paranasal sinuses in the African Gray Parrot
4	411	CT Scan-Anatomic Study of the Paranasal sinuses in the African Gray Parrot-
5	413	Antioxidant status and immune system of broiler chicken fed Ethanolic Eucalyptus globulus extract
6	414	Effect of Ethanolic Eucalyptus globulus extract on antioxidant status and immune system of broiler chicken challenged with Escherichia coli
7	415	A survey on the parent stock humoral antibody and maternaly derived antibody against Newcastle disease in their progeny in different ages
8	416	Shell and egg yolk contamination with Escherichia coli, Salmonella and Staphylococcus aureus fields hens
9	417	Effect of light emitting diodes with different wave length on immune response in broiler chicken
10	420	Geographical distribution of mortality and infectious disease in broiler farms of Iran 2007-2014
11	422	A septicemic case of Klebsiella pneumonia in cockatiels (Nymphicus hollandicus)A septicemic case of Klebsiella pneumonia in cockatiels (Nymphicus hollandicus)
12	424	Possibility of avian diseases detection using heart sound signals
13	427	Prevalence Of Septic Arthritis Caused By Methicline – Resistant Staphylococcus areus (MRSA) In Refer Carcasses From Broiler Farm In Saqqez City Clinics In 2013-2015
14	429	Determination of Replacement Share of Synthetic D-L Methionine with Herbal Methionine on Broiler Performance
15	430	The effect of Bacillus Licheniformis and grape vinegar on growth performance and carcass characteristics in broiler chickens
16	431	Study of Chromium and Nanochromium on antibody titers against IB & AI diseases in broiler chicken under heat stress
17	432	The effect of Bacillus Licheniformis on growth performance and carcass characteristics of broiler chickens in heat stress condition
18	434	Chronic toxicity assessment of nanosilver particles on weight gain and liver pathology in Japanese quail
19	435	Study of long term oral administration of nanosilver particles on biochemical and hematological factors in Japanese quail
20	437	Case report. An infectious laryngotracheiti in a backyard rooster in Mazandaran province of Iran
21	438	Comparison of physicochemical properties and antibacterial activity of two promising tilmicosin-loaded delivery systems: solid-lipid nanoparticles and lipid-core nanocapsules
22	440	A case report of Klebsiellosis in Canary
23	441	A case report of acute death in Canary due to Pseudomonas aeruginosa
24	442	Occurrence of clostridial and staphylococcal infection in an ostrich farm in Fars province
25	443	Seromonitoring of some Parrots for AI and ND 2013-2014
26	444	The study of attenuated live vaccine power and changes in humoral antibody in presence maternal antibody
27	445	Evaluation of the healing of bone defects induced by Nano-calciumphospate combined with sodim alginate Golden Eagle :a radiographic study
28	448	Evaluation of microbiological quality of poultry meat on the slaughterhouse
29	450	Evaluation of Coccidiosis prevalence rate in native chickens of Saghez
30	452	Effects of Different Levels of Aloe-Vera on Morphology of Small Intestine in broiler chicken
31	453	Effects of copper-methionine on performance and ascites in cold-stressed broiler chickens
32	456	Isolation and Identification of Enterococcus gallinarum from Panophthalmitis lesion in a Guineafowl, a case report
33	467	Effects of native probiotic (Dipro®) on performance growth, digestive enzyme activities and intestinal morphology in broiler chickns

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No	**Code**	**Title**
34	468	Effects of probiotic and prebiotic on growth performance, intestinal bacteria population and carcass chemical composition in broiler chickns
35	469	Parasites of domestic pigeons (Columba liviadomestica) in Iranshahr
36	470	Haemoproteus infection in pigeon reffered to veterinary azad university of Sanandaj
37	472	Evalvation the clinical utility ofpotassium and aldestrone measurement in ascitic broiler
38	473	Coccidiosis in Japanese Quails (Coturnix coturnix japonica): Characterization and treatment of a Naturally Occurring Infection in a Commercial Rearing Farm
39	474	Diagnosis and treatment of Aspergillosis in an ostrich farm
40	477	Natural infection of domestic fantail pigeons (Columba livia) with Sarcocystis spp.in Iran
41	479	Comparison of two measurement methods in determination of albumin values in peritoneal ascites of broilers
42	480	Detection of motile Salmonella spp. from broiler flocks in Khorasan Razavi and determination of serogroup and antibiotic susceptibility of the strains.
43	482	Preparation and Production of Polyclonal Antibody against Infectious Bursal Disease Virus
44	483	Impact of of Phytic acid on performance, enzyme activities and antibody titres against Newcastle disease in broilers fed nutritionally marginal diets
45	484	Effects of Different Levels of Aloe-Vera on Some Blood Biochemical parameters in broiler chicken
46	485	Selenium in water of poultry farms in Garmsar city by HG-AAS
47	489	The impact of inulin and phytase on gut morphology, characteristics and growth performance in broiler chickens
48	490	The impact of phytase and inulin on antibody titres against Newcastle disease on in broiler chickens
49	492	The Effect Of Different Levels Of Energy And Protein With Constant Ratio On Performance, Carcass Characteristics And Serum Lipids On Broiler Chickens From 27- 42 Days Of Age
50	494	Unusual cutaneous fowl pox outbreak in a commercial layer farm
51	103	Prevalence of Extended-Spectrum Beta-Lactamase(TEM) producing Escherichia Coli in poultry Colibacillosis by polymerase chain reaction
52	108	Prevalence of Extended-Spectrum Beta-Lactamase(CTX-M) producing Escherichia Coli in poultry Colibacillosis by polymerase chain reaction
53	12	Influence of Diets Supplemented with Silver Nanoparticles Coated on Zeolite on Oxidative enzymes of Broiler Chickens
54	476	A comparative study of different breeds and routes of administration on antibody response against Newcastle disease in commercial turkeys by ELISA and HI tests
55	271	Isolation and identification of Ornithobacterium rhinotracheale in slaughtering broiler chicken flocks of Khoozestan province
56	134	Determination of Chemical Composition and Mineral Contents of Kilka Fish Meal
57	135	Evaluation of Chemical Composition and Mineral Contents of Meat and Bone Meal
58	211	Survey of prevalence of class 1 and class 2 Integrons in E. coli isolated from poultry Colibacillosis in zabol
59	213	Phylogenetic typing of Escherichia coli isolates collected from broilers with Collibacillosis in Zabol
60	219	Comparison of force molting methods on production index and egg quality of Japanese Quail (Coturnix japonica)
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Keynote Speeches

Avian Infectious Bronchitis Virus:A ContinuingChallenge

Bozorgmehri FardMohammad Hassan[1, 2], Hosseini Hossein[3], Charkhkar Saied[1]

[1] Department of Clinical Science, Faculty of Veterinary Medicine, Islamic Azad University, Science and Research Branch, Tehran, Iran
[2] Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran
[3]Department of Clinical Sciences, Faculty of Veterinary Medicine, Islamic Azad University, Karaj Branch, Alborz, Iran

Introduction

Infectious bronchitis (IB) was initially described in 1930 as highly contagious, acute respiratory disease among chickens which is caused by infectious bronchitis virus (IBV). In addition, IBV causes egg production and quality loss and nephritis. Infection in the first week of life may lead to severe damage of the oviduct and "false layer syndrome".

Molecular events such as nucleotide insertions, deletions, point mutations, and RNA recombination in the hypervariable regions of S1 subunit can generate new IBV serotypes and genotypes capable of causing disease in vaccinated birds. Many dozen serotypes and genotypes within IBV have been identified worldwide and new variants constantly emerge. Emergence of novel IBV genotypes is a well-known characteristic of IBV.The increasing number of new serotypes and genotypes of IBV is a major challenge for the control of the disease and the selection of different strategies for vaccination.

Since 2010 a continuous surveillance on IBV genotypes circulating in Iranian chicken flocks has been carried out in our laboratory. Samples have been sent from suspected or healthy flocks in order to detection and characterization of IBV genotypes.Constant Monitoring of IBVs, consequently, could alert the poultry industry to find incidence and distribution of problematic IBV types in order to improve and implement preventive measure.

Seven genotypes circulating in Iran

Molecular surveillance reveals co-circulation of seven genotypes including Mass, 793/B, IS720, Variant 2, QX and IR-I and IR-II genotypes since 2010 in Iranian chicken flocks. Continuous surveillance of IBV genotypes demonstrates that distinct genotypes show distinct field dynamics. Among them, varinat2 and QX genotypes are the most important in term of predominance and pathogenicity.

Variant 2 genotype

Variant 2 genotypes have been reported since 1996 in the Middle East countries. As this survey commenced, Variant 2 was detected in Iran.This, supposedly, suggests the undetected circulation of these viruses among Iranian the chicken flocks for some time.The history of the introduction of these viruses has remained unclearto date.The virus was reported as causative agents of kidney lesion in chicken and nephropathogenic. Flocks infected with these viruses suffer from kidney lesion and later on visceral gout. Other manifestations including airsacculitis, tracheal plugs and cystic oviducthave been reported. Based on the field observation done in this study, it is proposed here that Variant 2 may induce "false layer". Cystic oviduct was occasionally seen during the production period in some flocks which had

been infected by the virus in first few weeks of life. The peak of production in these flocks was close to normal expectation altogether, although individual cases with the distended oviduct can be pinpointed.

Variant 2 was frequently detected in well-vaccinated chicken flocks during the whole period of this survey. Challenge study revealed that H120 vaccine provide poor protection (25%) against Variant 2.

QX Genotype

The first evidence of a new virus related to QX genotype was found in the summer of 2011 as indicated by our survey in the laboratory. This coincided with the large-scale imports of eggs and chicks to the countryto compensatefor the chickens that had been depopulated because of a highly pathogenic H5N1 avian influenza epidemic in the country. This virus spread rapidly as it was detected in different parts of the country in less than three months. The virus causes respiratory/kidney damage in all types of flocks (Broiler, pullet, layer and breeder). However, the potential of the virus to induce false layer was unclear until 8 months later (April 2012) when the first severe affected cases to "false layer" submitted to the lab. The peak of production in the affected commercial layer flocks were 25-30%. Non-patent and diluted oviducts, especially the range in the middle third of the oviduct along with normal ovaries, were the most significant findings of the necropsy. Later, the ability of the virus to induce cystic oviduct was revealed in a flock affected in the first weeks of life in a process of continuous postmortem examinations.

Control and Prevention

Since the majority of samples were submitted from affected flocks with clinical signs related to IBV infection, it seems reasonable to consider field genotypes as important and dominant genotypes of IBV that have potential to cause diseases. It is documented that vaccine strain induce the best immunity against homologous challenges. A new serologically different variant can escape the immune defenses which has been induced by the vaccines and in turn can cause vaccine breaks. Cross-protection between two strains depends on the amino acid similarity of S1. The chance of cross-protection will diminish asthe degree of amino acid similarity decreases. However, studies have shown that even a few changes in S1 amino acid have an impact on cross-protection. In some cases, even changes as minor as 2 to 3% of amino acid residues within of S1 glycoprotein may result in a new serotype. Based on S1 glycoprotein amino acid sequence, Iranian IBV's displayed homologies ranging from54.1% to 78.5% and from 53% to 86%with Mass-type vaccine and 793/B-type vaccine respectively. These findings may explain the poor vaccine performance in the field and show that the disease outbreaks were associated with the variants type which might have overcome the vaccination immunity. The high prevalence of IBV in vaccinated flocks emphasizes that the current control strategies and vaccination programs are inadequate for controlling the spread of field IBV.

The result shows that field strains are the most prevalent strains in Iran. This result is in agreement with the clinical reports. All of this scenario is happening in a situation that

heterologous combination of vaccines at 1 and 14 days of age (Mass & 793/B) are applied. It has been shown that a combination of Ma5 and 4/91 can protect against damage by a heterologous IBV (B1648) or QX two or three weeks after vaccination. On the other hand, studies have demonstrated that the infection with IBV has a greater consequence on kidney and oviduct if infection occurs at early age of life. Having considered the two facts above, this suggested program will leave the first few weeks of life unprotected, even if it could trigger broad cross-protection for the rest of rearing period.

Maternally-derived antibody which contains strain-specific immunity has an important role for early protection of remote organs like kidney and oviduct. It is reasonable to induce a high level of immunity with broad spectrum of antigenicity in parent stocks. As it is not advisable to introduce new vaccine strains to the country due to the great variations among circulating genotypes and also its other drawbacks, the administration of inactivated vaccines containing two different genotype (Varian 2 and QX) would have the advantage of protecting kidney and oviduct in susceptible early age. It was shown that inactivated autogenous vaccines may offer better protection than inactivated standard vaccine.

Conclusion

In summary, our surveillance illuminates the co-circulation of a variety of IBV genotypes in Iranian chicken farms. Heterogeneity both within field-type viruses and with vaccine strains can explain disease outbreak in recent years. Furthermore, early challenges and poor vaccination procedures may exacerbate the problem. The results emphasize that constant monitoring of IBV genotypes and serotypes is necessary to take correct preventative measures.

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Inclusion Body Hepatitis Associated with Fowl Adenovirus in Broiler Flocks

Charkhkar Saied[1], Hosseini Hossein[2], Bozorgmehri Fard Mohammad Hassan[1, 3], Kiani Mohammad Hadi[4]

[1]Department of Clinical Science, Faculty of Veterinary Medicine, Islamic Azad University, Science and Research Branch, Tehran, Iran[2]Department of Clinical Sciences, Faculty of Veterinary Medicine, Islamic Azad University, Karaj Branch, Alborz, Iran
[3]Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran
[4]Young Researchers and Elites club, Science and Research Branch, Islamic Azad University, Tehran, Iran

Introduction

Fowl adenoviruses (FAdV) are group I adenoviruses in the genus Aviadenovirus in the family Adenoviridae. FAdVs are a very heterogeneous group of viruses. Twelve serotypes,named FAdV-1 to 8a, and FAdV-8b to 11, are classified into five different species (A-E) based on restriction fragment length polymorphism of the full FAdV genome. FAdVs isolated from healthy chickens as well as sick birds. FAdV have been detected from a wide range of clinical and pathological manifestation including inclusion body hepatitis (IBH) and hydropericardium syndrome (HPS). IBH caused by several serotypes of fowl adenoviruses, while most HPS cases are associated with FAdV type 4. Birds can be infected with more than one serotype and protection is primarily serotype specific and virus might be shed while birds having antibodies to another serotype.

Field and clinical data

The number of IBH cases have been increasing in the Iranian broiler flocks in recent years.TheIBH is characterized by sudden onset of mortality.Clinical cases of FAdV infection occurred in broilers that were 7 to 30 day old. Mortality normally ranges from low rate to 30 percent. The mortality is higher especially when birds are under 3 weeks of age. Mortality generally peaks within three to four days and ceases within two weeks. Clinically the birds showed lethargy, huddling with ruffled feathers, inappetence and yellow, mucoid droppings may be seen.

In necropsy, the livers werefriable, pale yellow-white, enlarged and pale yellow with multiple petechial hemorrhages.Petechial or ecchymotichemorrhages may be observed in skeletal muscles.Kidneys were pale and swollen.Hepatitis sometimes leads to jaundice. The cropswere full and birds died in good body condition.

Histologically,necrotizing hepatitis with large basophilic intranuclearinclusion bodies in the hepatocytes was present.

Amplification of a 590 bp region of the hexon gene was done by PCR to confirm the presence of viral DNA in all suspected cases which submitted to the PCR veterinary Diagnostic Laboratory. Sequencing and phylogenetic analyses were revealedthat clinical cases caused by FAdV types 8b, and 11. These results indicate that these types might be major causes of IBH cases associated with FAdV in Iranian broilers flocks.

No commercial FAdV vaccine was licensed in Iran; therefore, the detected FAdV were considered to be natural infections. Clinical cases of FAdV infection in broilers might be

caused by both horizontal and vertical transmission. Vertical transmission is reported as an important feature of fowl adenovirus (FAV) to spread from parent birds to progenies. Infected breeder shed virus to their progeny for three to six weeks until development of immunity occurs. However, there was no way of knowing whether the route of transmission in each case was horizontal or vertical. There is evidence that adenovirus infections can become latent and that periods of stress, such as the onsetof egg production, will reactivate viral shedding. The bird-to-bird transmission of the virus in a flock occurs horizontally by the oral-fecal route and furtherspread take place by mechanical means and by contamination with infected feces.Commercial hatchingeggs may be a mechanism of spread of AAV from one country to another.

Studies indicated that immunosuppression inducedby IBDV or CAV infection, prior to or concurrently with a FAdV infections,appears to facilitate adenoviruses in developingIBH.However, several cases of IBH occurred without obvious influence of infectious immunosuppression.

Control and Prevention

Appropriate biosecurity measures are important in the control ofhorizontal spread of adenoviruses within a poultry house or farm. Vertical transmission to progeny can be bestprevented by practicing effective biosecurity to control horizontal spread in commercialparent flocks and limit the introduction of pathogens.

Vaccination programs involving the fowl adenoviruses were largelyinitiated in response to the IBH outbreak in Australia. The live vaccine manufactured from highly virulent strains ofserotypes 8b was effective in controlling the outbreak. Inactivated oil emulsion vaccine might protect progenies against IBH. It is recommended that thebreeder'sflocks to bevaccinated during growout at eight to twelve weeks of age. As the most cases of IBH are the result ofvertical transmission, vaccines have been proved to behighly successful at controlling IBH by preventingvertical transmission and inducing maternal immunity.

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Three Separate occurrences of H5N1 viruses Infection through a decade- A Short History

Shoushtari[1]*, A, ,Tehrani F[2]., Rohani S[2]

1. Department of avian viral diseases, RVSRI, , Iran 2. Iran veterinary Organization

Since emergence, the vast economic and social influences of hundreds of outbreaks in poultry across Asia, Africa, Europe and North America as well as well as over 400 humans'deaths have made H5N1 HPAI virus as a part of common daily speech. The first occurrence of H5N1 HPAI reported in Asia in 1996. Based on increasing diversity of hemagglutinin genes through virus circulating, H5 subtype viruses further are subdivided into the clades.General speaking, wild birds serve as the reservoir for LPAI viruses, but the reservoirfor the current H5N1 HPAI strains has not yet been identified despite sampling from hundreds of thousands of wild healthy migratory and resident birds. It is likely that the frequent interactions between large numbers of domestic poultry and wild water birds in open fields especially in parts of Southeast Asia are the major reason for sustaining the H5N1 HPAI virus in both the domestic poultry and wildlife sectors.

There are three official reports of the H5N1 virus occurrences in Iran to OIE, in 2006, 2011 and 2015 respectively. The first occurrence was reported in wild swan in Anzalilagoon in north which resulted in at least 400 fatalities in this species. Phylogenically, this virus located in clade 2.2, as the high closeness of this virus to East Asian counterparts referred to its origin. The second one occurred in rural poultry including mature chickens and amateur ducks- almost two weeks in age - in Mazanderan province at north of the country . This virus classified in clade 2.3.2.1. The third occurrence again reported from Mazanderan province in backyard chickens and the phylogenic analysis showed that this virus belonged to clade though this virus locate the same clade as previous one , phylogenic analysis clearly showed that these two viruses – detected in 2011 and 2015- had no direct relationship and these two occurrence should be interpret separately. However these three separate occurrences had some points in common include the place where they were detected- the north of the country – and their origins where they came from -southeast of Asia. These evidences show that the ecological nature of the north provinces could be used by H5N1 viruses as a gate to enter the country. There is a major annually surveillance program which is successfully carried out throughout the country. However it could be conclude that this program should be intensified in terms of bird population of target and surveillance interval especially in the north of Iran.

Emergence of New Genotypes of Newcastle Disease Viruses in Asia, Middle East and Iran

Mehdi Vasfi Marandi

DVM; MScV; PhD & Professor in Poultry Diseases

Department of Avian Diseases

Faculty of Vet Med- University of Tehran

E.mail: mvmarand@ut.ac.ir

Newcastle disease (ND) is an important infectious disease of the poultry that is caused by virulent Newcastle Disease viruses (vNDV) of Avian Paramyxovirus-1. It has 10 serotypes designated as APMV-1-11 and five pathotypes. Two systems have been used to classify NDV isolates intolineages and sub-lineagesas well as genotypes and sub-genotypes based on the analysis of partial or complete F gene sequence. In the first system initially described by Aldous et al.,NDVs are classified into seven lineages and 20 sub-lineage. In the second system, NDVs are grouped into two major classes; class I and class II. Class I has been divided into nine genotypes (1-9)and class II consisted of eleven genotypes (I-XI). Class I strains are found worldwide, generally from waterfowl and shorebirds. Class II include most virulent and some avirulent NDVs and this class is further divided into sub-genotypes 1a and 1b, II and IIa, VIa-VIf and VIIa-VIIh. The NDVs of Class II are generally found in wild-birds and poultry species universally. Genotype I contains mainly avirulent isolates from wild waterfowl and various poultry species of the world. Genotype II-IV viruses were responsible for the first panzootic before 1960s; Whereas genotypes V was associated to the second panzootic during 1960s and 1970s. The third panzootic caused by genotype VIb in racing pigeons during the 1980s. Genotypes of VIII and VII are respectively responsible for the fourth and latest (fifth) pandemic have originated since late 1980s in the Far East, Europe, and South Africa. While Genotype IX has been isolated in some regions of China since 1948, and genotype X has caused NDV infections in Taiwan in 1969 and 1981. Recently, a new genotyping system has been designed according to full sequence of F gene. In this system, NDVs are classified into two classes (class I and class II) with one and eighteen genotypes into each one, respectively.

The vNDV isolates from new sub-genotypes of VIIh and VIIi, within genotype VII are rapidly spreading through Asia and the Middle East causing outbreaks of ND characterized by significant illness and mortality in poultry. These sub-genotypes have serious epizootic characteristics suggesting the emergence of a latestpanzootic and do not appear to have originated directly from other genotype VII isolates that are currently circulating elsewhere, but are related to the present and past Indonesian NDV viruses isolated from wild birds since the 80s. From 2011 and up to nowclosely relatedVIIisub-genotype has been isolated from poultry industry and backyard poultry in Indonesia, Pakistan and Israel. In Pakistan and Israel, the viruses of sub-genotype VIIi have recently replaced with XIII genotype, which were commonly isolated in 2009-2011, and they have become the predominant sub-genotype causing ND outbreaks since 2012. These data suggest the spreading of a new panzooticvNDV

composed of viruses of sub-genotype VIIi in Asia, Middle East countries.

The complete open reading frame sequences of F gene of six vNDV isolates from backyard poultry in department of Avian diseases- faculty of Vet Med/University of Tehran were amplified and sequenced. All characterized NDV strains had high similarities to far east isolates. The phylogenetic analysis revealed that these strains fell into genotype VII and grouped into a specific sub-genotype. Molecular characterization of NDVs in Iran by Bostani et al., (2013); Samadi et al., (2013); Mehrabanpour et al., (2014); Hosseini et al., (2014), and Ghalyanch et al., (2014) have been shown the circulation of VII genotype in poultry industry of Iran. These studies together with our recent study in backyard chickens indicate the presence of genotype VII isolates both in industrial and backyard poultry of Iran. Live virus vaccines and killed oil based vaccines are used in Iran and many other countries to prevent vND in poultry. Despite the extensive use of vaccines, outbreaks are continuously occurring in various parts of the world resulting in huge losses since few years.Therefore; there is a need to develop new vaccine strains and/or design new vaccination schedule to control vND outbreaks.

Rescue of recombinant Newcastle disease virus (NDV); assembly and recovery.

Dr.Aidin Molouki

Since the rescue of the first recombinant Newcastle disease virus (rNDV) in the late 90's, this recombinant virus has gained major attention and has been of great medical and economical importance. In fact, over the last two decades many more rNDVs have been rescued by researchers around the world. Interestingly, the main principle behind the recovery of the virus has remained the same; for a functional rNDV to be recovered, the RNP complex consisting of the full-length RNA together with the NP, P and L proteins must be present. This would need a series of cloning into transcription and expression vectors. However, different strategies for the assembly of the long NDV cDNA into transcription vector and provision of RNA polymerase have been published that we will discuss in here. On the other hand, reverse genetics is leading us into better understanding of the major determinants of NDV virulence. Surely, greater knowledge on the function of each protein will help us develop better and stronger vaccines to tackle this deadly disease much more efficiently.
Keywords:rNDV, reverse genetics, virus rescue, RNP

Ornithobacteriosis in the poultry industryof Iran and *Ornithobacterium rhinotracheale*(ORT) vaccines

Banani, M.* ,Pourbakhsh, S.A., Nouri, A., Goudarzi, H.,Ghodsian, N.,Ashtari, A,Mirzaei, SG and Babakhani, M.
Razi vaccine and serum research institute
*Mansour Banani[1]

1-Associate Professor , Avian bacterial, parasitic & fungal diseases dept., Razi vaccine & serum research institute, Karaj, Iran.

Introduction:*Ornithobacterium rhinotracheale* (ORT) infection or ornithobacteriosis is a contagious bacterial disease of avian species, primarily chickens and turkeys. It can be associated with respiratory distress, decreased growth, mortality, and increased condemnation rates at slaughter. It causes high economic losses in the poultry industry throughout the world annually. Transmission of ORT occurs horizontally and vertically and antibody-mediated immunity in chickens is a key component in the protection against ORT infection. After a farm is infected, ORT becomes endemic, especially in multiple-age farms and in areas with intensive poultry production.Some works showed high incidence of ORT infections among commercial chicken and turkey flocksthroughout Iran and some of them were associated with high mortalities.

Ornithobacteriosis in Iran: Unilateral or bilateral pneumonia, reduced growth, drop in egg production, airsacculitis, bronchopneumonia followed by right ventricular failure and ascites, meningitis and swollen head and face have been observed in commercial chickens of Iran suffered from ornithobacteriosis. Observation of purulent cast into the trachea near to the syrinx and into the extrapulmonary primary bronchus and heavy mortalities are common signs of natural ORT and influenza virus H9N2 co-infection.If we could control the ORT infection we probably would be successful in prevention of high losses due to influenza H9N2 infections. In addition to AIV subtype H9N2, simultaneous ORT isolation with other respiratory pathogens such as some other viruses, avian pathogenic *Escherichia coli* (APEC), *P. multocida*, *Av. paragallinarum*, and *Cryptosporidium baileyi* has been reported in Iran. Neglecting the infection of ORT in respiratory complexes can induce tremendous economic losses in poultry industry of Iran.

Treatment with antibiotics has become less effective against ORT infections due to an increased pathogenicity, an increased burden of infection, and/or an increased level of acquired antibiotic resistance.Drug sensitivity of 47 ORT isolates using standard disk diffusion were examined with 35 different antibiotics. The isolates originating from commercial chicken flocks submitted in 2000, 2001 and 2007 to Razi institute. There was an obvious antibiotic resistance increase in 2007 isolates compared with 2000 and 2001 in several antibiotics. But in others there was no change or even an apparent decrease of antibiotic resistance has been observed. Of course because of different geographic area and different breeds of birds this comparison cannot be generalized. Because of acquired antibiotic resistance, and various results of antibiotic therapy, it must be stressed to prevent the infection and vaccination.

Public health significance: Currently, ORT has not been found to be of any public health significance. In spite of this, ORT indirectly might help to propagate and spread the potentially zoonotic agents such as some strains of avian pathogenic Escherichia coli (APEC) and AIV subtype H9N2. Furthermore, increasing the extensive use of various antibiotics against respiratory complexes causes increasing the antibiotics resistant human

pathogenic bacteria like *Salmonella* and *Campylobacter*.

ORT vaccines: The best strategy for the control or prevention of ORT infection is probably vaccination, but vaccines developed so far show variable results in commercial poultry. Killed and live vaccines and subunit recombinant vaccines reported and used for the control of *O. rhinotracheale* infection in commercialpoultry under experimental and field conditions in the world. In Iran a commercial killed vaccine have been used in some broiler breeder flocks because of improved performance of production parameters of broiler chicken progenies. In spite of the availability of autogenous vaccines, economic losses related to ORT infections in the poultry industry are estimated in hundreds of millions of dollars annually in the United States.It seems that decreasing the slaughter age of chicken broilers in Iran is a useful strategy to decrease the respiratory complexes and also the threat to public health.

Key words:*Ornithobacterium rhinotracheale,*Ornithobacteriosis, poultry industry, Iran, vaccines.

Co- infection of *Ornithobacterium rhinotracheale* and H9N2 avian influenza virus in SPF Chickens

Hossein Goudarzi*,Mansour Banani*Abbas Nouri *Reza Momayez*,Aidin Azizpour**

**Department of poultry diseases, Razi Vaccine and serum research institute, karaj, Iran.*
***Department of poultry diseases, Islamic Azad University, Tehran, Iran.*

In recent years,outbreaks of respiratory disease associated witha progressive pneumonia has become prevalent in broilers and laying hens In Iran, which has caused extensive economic losses. Previous studies demonstrate that H9N2 virus infection contributes to respiratory distress and is involved in diseases caused by other respiratory pathogens in the poultry industry. In recent years, outbreaks of respiratory disease associated with ORT and H9N2 have been reported in Iran.

Experimental infection with ORT (R87-7/1387) andH9N2 (A/Chicken/Iran/2010):

One hundred twenty, 21-day-old healthySPF Chickenwere randomly divided into six groups with 20 birds in eachgroup. All of the birds were kept in negative pressure isolators. Group 1 was inoculatedintranasaly with 1×10^{10}CFUORTin 0.5 ml, and at the sametime10^6 EID50of H9N2 was administrated 0.1ml eye drops. Group 2 received 1×10^{10} CFUof ORTintranasally in 0.5 ml and,three days later, received 10^6 EID50of H9N2 eye drops. Group 3was inoculated eye drops with 10^6 EID50of H9N2and, three dayslater, received 1×10^{10} CFUORTin 0.5 ml. Group 4 birds wereinoculated intranasalywith 1×10^{10} CFUORTin 0.5 ml of ORT, and Group 5 wasadministered10^6 EID50 of H9N2 eye drops. Group 6 received anintranasaly of the sterile physiological saline as a negative control. Each groupwas observed daily, and all were sacrificed on day 14 PI.

Results:

Group 1: Some birds showed ruffled the feathers, inactivity,reduced appetite and respiratory distress (coughing, sneezing and gasping) on days 2 PI with ORT
and H9N2 virus simultaneously. The most remarkable clinical signs appeared on day 3 PI.The clinical signs disappeared at 10 day PI.There was 15% mortality in the ORT+H9N2 virus group.The lesions such as congestion and hemorrhage in the tracheal mucosa, air saculitis, pneumonia, fibrinous cast formation in tracheal and swollen kidneys were observed in gross lesion findings.

Group2: Clinicalsigns such as depression and ruffled feathers on day 4 PI.These clinical signs disappeared on day 6 PI. Birds infected with ORT followed by H9N2 showed no mortality.

Group3: Some birds showed ruffled the feathers, anorexia and respiratory distress on days 5 PI with H9N2 followed by ORT.
The most remarkable clinical signs appeared on day 3 PI.The clinical signs disappeared at 8 day PI.There was 10% mortality in the H9N2 virus followed by ORTgroup. The gross lesion was similar to group1.

Group4: Some chickens infected with ORT alone showed only ruffled feathers on days 3 PI.This sign disappeared on day 5 PI. There was not mortality in this group.

Group5:Clinical signs such as depression and ruffled feathers on days 4PI. These clinical signs disappeared on days 6 PI. Birds infected with H9N2 alone showed no mortality.

Discussion:

In the current study,SPF chickens inoculated intranasaly with ORT(R87-7/1387) and inoculated eye drops with H9N2(A/Chicken/Iran/2010) alone not displayed pneumonia and typical airsacculitis and not mortality , while co-infection of the SPFchickens with ORT and H9N2 virus isolates and H9N2 followed by ORT displayed pneumonia and typical airsacculitisand induced mortality . Our findings suggest that primary infection with ORT not play a major role in the development of severe pneumonia, while co- infection and infection with H9N2 followed by ORT further increases the mortality.
This is the first report of co-infection of SPF leghorn chickens with ORT and H9N2 virus, and this coinfection is probably associated with the outbreak of broiler airsacculitis in Iran, which has caused extensive economic losses.

Infectious Coryza in Iran

Abbas Nouri*, Banani M. Ataie S.
Avian bacterial diseases department of Razi vaccine and Serum Research Institute
Corresponding author's email: a.nouri@rvsri.ac.ir

Infectious Coryza (IC) is an acute respiratory disease of chicken that caused by *Avibacteriumparagallinarum* (Av.P). The disease results in marked drop in egg production from 10-40 percent to sometime 75% and also poor performance in breeders and layer flocks during 3 weeks of infection. IC clinically has been recognized in Iran for many years and vaccination protocol has been implemented to control the disease. Despite these measures, there is no documented information either about serotype prevalence and virulence or about efficacy of used vaccines in flocks. Fastidious growth of Av.p and sensitivity to environmental stress are the main causes of little works on IC in Iran. Summary of activities carry out on one of theimportant bacterial respiratory disease "Infectious Coryza" are discussed here.

The first report of infectious Coryza agent isolation and determination of antibiotic susceptibility pattern was done by Bozorgmehrifard in 1978 after that Banani (2007) in studying of bacterial cause of head swelling in layer flocks, two bacterial isolate recovered. He confirmed the isolate as *Haemophilusparagallinarum* by studies on biochemical properties and upon experimental infection of susceptible birds characteristic signs of IC disease were produced (3,1). Two isolate that later were inactivated has been subjected to serotyping by PCR test recommended by Sakamoto(5). The results shows that both isolate were belong to serotype B of PAGES method (4). In recent years by increasing genomic related information and introduction of a PCR to detect and diagnosis of Av.p, some efforts were done in Iran by researchers to detect IC agent in poultry flocks and comparison with culture method(2). In avian diseases research department of Razi institute, we obtained one field isolate of Av.P (RT-83) from Khorasan Razavi province in Iran, after identification of this isolate as Av.p, using biochemical tests and PCR technique. We amplified and sequenced a part of haemagglutinin protein genome of the bacteria using recommended primers specific to serotype (serogroup) A. In continuation of works, the pathogenesis evaluation of this isolate and immune protection of commercial vaccine against it on SPF birds was carried out. Based on this research, characteristic signs if IC has been reproduced in SPF birds and existence of common antigens between vaccines contain strains and the isolate was confirmed by SPA and AGP tests. Vaccinated birds when challenged by this isolate in compassion with susceptible bird they remained nearly no affected clinically but challenged bacteria re-isolated from inoculated site (infera-orbital sinus) for a 6-day duration. Extended re-isolation time of bacteria in comparison with other examined vaccine challenged experiments raises the question of possible differences between vaccine strain and the Iran's native isolate and relapsing of IC in susceptible birds of flocks. With respect to rising concerns over more antibiotics used in poultry farms to combat against bacterial infection, the rationale of bacterial vaccine development and its consumptionrequired more attention.

Keywords:infectious Coryza,*Avibacteriumparagallinarum*, serotype, Iran,

First report of *Gallibacterium* isolation from layer chickens in Iran

Ataei Kachooei[1], Saeed; Banani, Mansour[1]; Goodarzi, Hossein[1]; Afkhamnia, Mohamad[1];Abtin, Alireza[1];Noori, Abas[1]; Ashtari, Abas[1];Tooloo, Allahghadri[2].

1) *Avian Bacterial Diseases Department, Razi Vaccine and Serum Research Institute, Karaj, Iran.*
2) *Department of Veterinary Disease Biology, Faculty of Health Sciences,University of Copenhagen, 1870 Frederiksberg C, Denmark.*

*Corresponding author: Saeed AtaeiKachooei, s.ataei@rvsri.ac.ir

Key words: Gallibacterium, Salpinigitis, Chicken.

Gallibacterium, a Gram negative coccobacillus, is a genus of the *Pasteurellaceae* family with capability of infecting wide range of avian host species. The organism was introduced by Kjos-Hansen in 1950 under the name of "cloaca bacterium" a hemolytic bacterium isolated from acute salpangitis and peritonitis also isolated from healthy chicken. In 2003, *Gallibacterium* was selected instead of different previous names such as *Actinobacillussalpingitidis, Pasteurella haemolytica*-like organisms*, Pasteurellaanatis.* Four different species has been recognized in the *Gallibacterium* genus so far. Members of the genus has the potential of causing a wide range of pathological lesions, from upperrespiratory tract lesions, follicle degeneration, enteritis, pericarditis, hepatitis, oophoritis,septicemia to more importantly salpingitis and peritonitis.However, the infection with species of*Gallibacterium* considered to be critical in layer farms since they are major pathogens of reproductive organs.Salpingitis and peritonitis of layer farms caused by *Gallibacterium*, results in lowered egg-production and increased mortality. *Gallibacterium* is the most common single bacterial infection in egg-laying farms with reproductive disorders.

During a microbiological survey on bacterial infectious agents of reproductive tract of layers, some isolates from salpingitis cases were suspicious of *Gallibacterium*. According to culture and biochemical properties primary identification was in support of genus *Gallibacterium*. A PCR test using primers specific for the genus identification was carried out. The suspected isolate showed bands of 1030 and 1080 Da, which are specific for *Gallibcterium*.

To our knowledge, this is the first report of isolation and identification of *Gallibacterium* in Iran. This study shows the possibility of a role for *Gallibacterium* in poultry industry of Iran. This study also shows the need for the further investigations on epidemiological situation of the infection, and also the isolation and identification of the different species of the genus *Gallibacterium*.

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Prevalence and effects of mycotoxins on health and performance of poultry

*Department of Clinical Sciences, Faculty of Veterinary Medicine, Urmia University, Urmia, Iran

ManoochehrAllymehr*

Author's email: m.allymehr@urmia.ac.ir

Mycotoxins are low molecular weightsecondary metabolites produced by a wide range of fungi, principally molds. They are not used as building components for the fungus body but are produced for other reasons that are not yet fully understood.There are over 200 species of molds that produce mycotoxins. While more than 400 mycotoxins have been identified, Aflatoxins(AF), zearalenone (ZEN), ochratoxinA (OTA), fumonisins (FUM), trichothecenes such as deoxynivalenol (DON), and T-2 toxin have captured most attention.

The Food and Agriculture Organization(FAO) estimated thatabout 25% of animal feeds and human foods arecontaminated by one or several mycotoxins.Mycotoxin contamination and the severity of the mycotoxin problem vary from year to year and from one geographic region to another. Contamination and subsequent mycotoxin production influenced by environmental conditions at thetime of crop development and also storage condition. It is therefore important to understand how mycotoxins affect poultry in order to properly control them and reduce economic losses.

Mycotoxicoses are diseases in humans or animal caused by the ingestion, inhalation or skin contact with mycotoxins. Toxicity of mycotoxins depends on the amounts ingested or inhaled, exposure time, poultry species, their breed, age, sex, general health and immune status.Poultry reared under environmental condition of high temperature, poor ventilation, high humidity, overcrowding and other challenges are more susceptible to the effects of mycotoxins. Generally, younger birds are more susceptible than older birds.Mycotoxins can affect various organs such asgastrointestinal tract, liver,kidney,respiratory, reproductive and immune system, essentiallyresulting in reduced productivity of the birds andmortality in extreme cases.

Although the prevention of mycotoxin contamination in the field is the main goal ofagricultural and feed industries, under certain environmental conditions the contamination of various commodities with mycotoxins is unavoidable.Physical treatment **(**washing, polishing, segregation, flotation, autoclaving, UV irradiation, ultrasound treatment),Chemical methods **(**oxidising agents, acids, bases, salts, chlorinating substances),Mycotoxin binder(bentonites, zeolites, aluminosilicates) and biodetoxification (microorganisms or enzymes) have already been used to counteract mycotoxins.

This symposium review presentation comprehensively discusses the above mentioned aspects.

"Ardehal Variant" Involves in Reovirus-Associated Arthritis and Tenosynovitis Outbreaksin Broiler Flocks

Hosseini Hossein[1], Bozorgmehri Fard Mohammad Hassan[2, 3], Charkhkar Saied[2]

[1]Department of Clinical Sciences, Faculty of Veterinary Medicine, Islamic Azad University, Karaj Branch, Alborz, Iran
[2] Department of Clinical Science, Faculty of Veterinary Medicine, Islamic Azad University, Science and Research Branch, Tehran, Iran
[3]Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran

Introduction

Avian reoviruses are widespread in poultry. All commercial poultry flocks are probably infected by avian reoviruses during their lives. A vast majority of reoviruses are non-pathogenic. Reoviruses can be isolated from healthy birds and several disorders including malabsorption syndrome, runting and stunting syndrome, enteric disease problems and viral arteritis (VA). The role of reoviruses as a primary pathogen in many clinical manifestations is less clear and often even somewhat ambiguous. However, VA is the exception here and the association of some reoviruses with viral arteritis/tenosynovitis in commercial poultry is well-established.

The outbreak of VA is fairly rare due to the vaccination of broiler breeder with a combination of live and inactive vaccines. In addition, the majority of reoviruses circulating in the poultry farm is non-pathogenic.However, clinical outbreaks may occur when a virulent of reoviruses infects unprotected broiler breeder or broiler flocks.

Field observation

At the end of 2014, an outbreak of clinical manifestation related to reoviruses was submitted to PCR Veterinary Diagnostic Laboratory. The number of clinical cases of tenosynovitis and/or lameness in broilers increased during 2015.All the affected broiler flocks were characterized by inflammation of joints, digital flexor tendon, footpads, as well as lamenessand poor performance. These uneven birds at harvest produced such sings as ruffled appearance, splay legs, angular leg deformities which led to condemnation at processing.

Laboratory finding

Tenosynovitis, pericarditis and myocarditis were the predominant findings in histopathology. Reovirus ELISA serology demonstrated a significant increase in the immune response of all affected flocks to reovirus in the later stages of production.

Avian reoviruses were also detected in tendon or synovial samples. The open reading frame of the S1 sequence which is encoding the σC protein of reovirus, was sequenced.The sigma C protein is the target for genotyping classification of ARV's using molecularmethods and is the minor outer capsid protein. The sigma C proteindisplays cell binding activitiesand is responsible for cell attachment, as well as induces type-specific neutralizing antibodies. Avian reoviruses fromarteritis/tenosynovitis in all affected broiler flocks were closely related to each other, regardless of flock source. Clear similarities in reoviruses give evidence for a common source of the infection. Thisavian reovirus was designated as "Ardehal Variant" after the first detection in broiler flock in Ardehal, in the center of Iran. The sequence were analyzed phylogenetically and were compared with the sequence of avian reovirus in the GenBank database. This sequence demonstrated that the virus known as the "Ardehal

Variant"belongs to cluster 1. Cluster 1 of the avian reovirus includes the commercially available vaccine strains such as S1133, 1733 and2408. However,the sequence of the Ardehal Variant differs significantly from these commercial vaccines.

Conclusion

Controlling reovirus-induced VA can be achieved by vaccinating broiler breeders to confer maternal immunity in progeny for early protection against field challenges.Many field and vaccine strains display a partial cross-antigenicity to some extent and thus induce a somewhat partialcross-protection. It is known that a completeprotection is only given against homologous serotypes. Since 2011, reoviruseswhich have been inducing VA, continued to cause problems for the broiler flocks in some parts of the world. Several novel groups of variant reoviruses were isolated from clinical cases of viral arthritis/tenosynovitis and are genetically and antigenically distinct from the current reovirus vaccine strains.Studies demonstrated thatthe standard vaccines may be insufficient to protect the progeny against novel variants.Autogenous vaccines have been produced with field isolates associated with reoviral-induced disease and delivered a promising result.

Postmortem, bacteriological, histopathological, virologicaland serological examinations confirm that the etiology of avian reoviruseshas inducedthe recent tenosynovitis in Iran.Broiler breeders were generally vaccinated by live and inactive vaccines in Iran. Subsequently, progenies of thesevaccinated parent stocks are supposed to be, also,protected against early challenges. Viral arthritis/tenosynovitisoutbreaks are reported among broiler flocks, especially where the vaccinationshave failed. There isnot any definitive evidence forthe outbreaks of tenosynovitis among broiler flocks in Iran in recent decade.However, the recent outbreak in broiler flocks, despite the ordinary vaccinations of parent stocks, might contribute to the fact that the vaccination of broilerbreeders in Iran with the vaccines currently in usefail toeffectively protect progenies.

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Avian Infectious Bronchitis Virus:A Brief Update

Arash Ghalyanchi Langeroudi

(Avian Coronavirus Research Group)

ghalyana@ut.ac.ir

Introduction:

Infectious bronchitis virus (IBV), the prototype of the family Coronaviridae, subfamily Coronavirinae, order Nidovirales, is an important pathogen of chickens. The most characteristic clinical sign relates to the respiratory tract; however, infectious bronchitis can also present renal, enteric, and reproductive clinical signs. This disease causes major economic losses not only because of low performance or decreased egg production and quality but also because of secondary infections.The first isolation of IBV in Iranian chicken flocks was reported by Aghakhan *et al* (1994) which was Massachusetts serotype. Later, several Iranian researchers identified the 793/B serotype.Genotyping of IBV strains isolated in Iran were classified into seven distinct phylogenetic groups (Mass, /B like, IS/1494 like , IS/720-like, QX-like, IR-1, and IR-2) based on analysis of mainly HVRs of the S1 gene.

Molecular Surveillance(March 2015-December 2015):

A total of 80 IBVs were isolated from the tissue samples of clinically suspected chickens of Iranian farms. The isolates were confirmed by real-time polymerase chain reaction (PCR) and characterized by sequencing the spike glycoprotein gene. The isolates formed five distinct phylogenetic groups [IS/1494/06 (Var2) like, 793/B , QX like, and Mass like]. The most frequently detected genotype were Var2-like (IS/1494/06 like) viruses with a total prevalence of 62%.

Cross –Protection Studies:

Vaccination against IB control has been practiced for over half a century. Besides commercial vaccines of Mass serotype, 793/B serotype vaccines have been produced by several companies including 4/91 (Intervet), IB88 (Merial), Ibird (CEVA Sante animale).We did some cross Protection studies on Variant 2 &QX .You can find the summery of findings in the following table:

Vaccination Program	Challenged Virus	Protection
H120 (1 day) + 793/B type vaccine (14 day)	Variant 2	68-70%
H120 (1 day) + H120 (14 day)	Variant 2	60%
H120 (1 day) + 793/B type vaccine (14 day)	QX	83%

Conclusion:

Further studies are needed to explain the mechanism of the emergence of variants and their biological properties, including pathogenicity, and the development of suitable vaccines from indigenous virus strains.

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Detection and Molecular Characterization of Seven Respiratory Diseases in Respiratory Diseases Complex in Broiler Farms in Qazvin Province, Iran, 2014

Gita Akbariazad[1*], Payam Haghighi Khoshkhoo.[1], Hossein Hosseini.[1]

Behshad Beheshtian[2], Ali Latifi[2], Seyed Sadredin Mousavi-Nasab[2], Mostafa Fallah Joshaghani[2], Mohammad-Reza Koshk-Baghi[2], Saman Jabbari[2], Armin Sorayaie[2]

[1]Department of Clinical Sciences, Veterinary Medicine Faculty, Karaj Branch, Islamic Azad University, Karaj, Iran.
[2] Graduated fromVeterinary Medicine Faculty, Karaj Branch, Islamic Azad University, Karaj, Iran.

Corresponding author's email: gita199@yahoo.com

Introduction:

Amongst different prevalent poultry diseases, respiratory diseases with variable severities are the most common under intensive rearing system. Detection of the pathogens based on clinical signs and serologic tests is complicated for poultry veterinarians. In this study, seven prevalent respiratory pathogens including: Newcastle disease virus (NDV), infectious bronchitis virus (IBV), avian influenza virus (AIV), Avian metapneumovirus (aMPV), O*rnithobacterium rhinotracheale* (ORT), M*ycoplasma gallisepticum* (MG) and M*ycoplasma synoviae* (MS) in broiler farms detected by polymerase chain reaction (PCR), Reverse transcription-PCR (RT-PCR) andtheir molecular characteristics were investigated.

Materials and Methods:

Sampling: A total of 180 tracheal swabs were taken from 20 broiler flocks in Qazvin province during fall and winter, 2013-2014. After pooling, 60 swabs were prepared for PCR.All samples were taken during acute phase of respiratory disease.

Genome extraction: for NDV, IBV, AIV and aMPV, RNA extracted by kit (Bioneer, Korea). Then, cDNA was synthesized by Random Hexamer (RH) primer and First Strand cDNA synthesis kit(CinnaGen, Iran). For MG, MS and ORT, DNA extracted by boiling method.

PCR: Target genes for NDV was fusion, for IBV was spike (HVR), for AIV were matrix and hemagglutinin and for aMPV was nucleocapsid that amplified in PCR. TaqMan probe, high resolution melting analysis (HRM), RT-PCR and type-specific RT-PCR were applied for strain identification of NDV, IBV, AIV and aMPV respectively. For MG, MS and ORT a fragment of 16SrRNA were amplified. Virulent strains of NDV and different genotypes of IB were sequenced and phylogenetic tree were designed by Mega 5 software.

Results:

PCR products were 362, 396, 132 & 488, 255, 784, 185 and 207 bp for NDV, IBV, AIV, aMPV, ORT, MG and MS respectively.NDVdetected in 60% of flocks, IBV in 95% of flocks, AIV in 65% of flocks, aMPVin 65% of flocks,ORTin 55% of flocks,MGin 10% of flocks and MSin 20% of flocks.

Based on strain identification of NDV by TaqMan probe, 5 (25%) flocks were infected by velogenic strains. Sequence analysis of these viruses confirmed the primary results and they had 112-RRQKRF-117 sequence in their cleavage site of F gene that is characteristics for velogenic pathotype. Phylogenetic analysis revealed that these isolates were closely related to the genotype VIId of class II NDV strains. Strain identification of IBV revealed that three genotypes including variant II, 793/B and Mass were circulating in theses flocks.Variant II was found in 11 (55%) flocks. In 5 (25%) flocks, 793/B; in 2 (10%) flocks, Mass and in 2 (10%) flocks 793/B+ Mass were found.These results were confirmed by sequence analysis and phylogenic tree of Spike gene.As a result of H9-specific PCR, all positive samples of AIV in matrix gene (type A) were H9. Type-specific RT-PCR of positive samples of aMPV showed that all viruseswere belonged to type B.

Distribution Pattern of detected pathogens was different among 20 broiler farms. In one flock: 6 pathogens, in 4 flocks: 5 pathogens, in 6 flocks: 4 pathogens, in 6 flocks: 3 pathogens and in 2 flocks: 3 pathogens detected simultaneously.

Conclusion:

Among the seven investigated pathogens in 20 broiler farms, IBV detected in the highest rate (95%), followed by AIV (65%), aMPV (65%), NDV (60%), ORT (55%), MS (20%) and MG (10%) respectively.

Keywords: Respiratory Diseases Complex, PCR, Sequencing, Broiler, Qazvin.

Response to HPAI outbreaks in EU Member States during 2015

Situation as of 07 December 2015

Alisafar Makenali
Iran Veterinary Organization
makenali@gmail.com

This document summarises basic information on the outbreaks of Avian Influenza (AI) in several EU Member States and related EU action. It focuses on the animal health aspects. The electronic version of this document is available on the SANTE AI web pages.

For additional information, please refer to the Decisions in the Official Journal, the Commission's avian influenza webpage and associated press releases. EU legal texts – Commission Decisions (CD) and Regulations (RG) can be accessed via the EUR-Lex webpages.

For more general animal health information, please refer to the Commission's webpage.

For human health information, please refer to the Commission's relevant webpage and the website of the European Centre for Disease Prevention and Control.

As regards international organisations please refer to the AI web pages of the World Animal Health Organisation (OIE), the AI web pages of the Food and Agriculture Organisation (FAO) and the AI web pages of the World Health Organisation (WHO).

Virtual faxes on AI occurrences in Member States (MS) and information on the Commission's work are sent to EU Member States and many third countries trading with the EU. These documents are referenced, starting each year with Fax 001. Please note that information on LPAI outbreaks in Member States is not included in this chronology.

Oral Abstracts

Oseltamivir efficacy against avian influenza A virus (H9N2) replication in cell culture

Pourghanbari, GH[1,2*], Nili, H[1], Moattari, A[3], Mohammadi, A[4], Morovati M[1], Salehi E[1]
1. School of Veterinary Medicine, Ardakan University, Ardakan, Yazd, Iran.
2. Avian Disease Research Center, School of Veterinary Medicine, Shiraz University, Shiraz, Iran.
3. Department of Bacteriology and Virology, Shiraz University of Medical Science, Shiraz, Iran.
4. Department of Pathobiology, School of Veterinary Medicine, Shiraz University, Shiraz, Iran
Corresponding author's email: hpourghanbari@ardakan.ac.ir

Objectives: The low pathogenic avian influenza H9N2 subtype virus is one of the member of the influenza family which has been widely circulating in different birds, mammalian species and even human population. Although vaccination is the most efficient method to control the disease but some difficulty were included this approach. Currently two classes of antiviral drugs have been approved: M2 ion channel and neuraminidase inhibitors. In this experimental assay the anti-avian influenza virus (H9N2) activity of Oseltamivir was evaluated.
Materials & Methods: MDCK cells culture were grown in 96 well plates for 48 hours and inoculated with influenza virus (H9N2) at MOI=0.1 for one hour, then oseltamivir were added at different concentration(0.5-0.005 mg/ml), viral titration were carried out by TCID50, HA and Real Time PCR tests, also Cell viability of oseltamivir investigated by MTT test.
Results & Conclusion: the Cytotoxicity concentration 50% of oseltamivir was 0.5mg/ml. Oseltamivir exhibited a dose dependent anti avian influenza virus (A/chicken /Iran/772/1998(H9N2) activity. Virus titers were reduced at 0.5-0.005 mg/ml in all of experimental tests and interestingly a drastic decrease in the viral genome copy number were observed in all of concentrations.
The findings of our study, suggest that oseltamivir has a potent anti avian influenza activity and it could be a choice for control and treatment of avian influenza subtype H9N2 in poultry industries.
Key words: avian influenza, oseltamivir, antiviral, cell culture, Real Time PCR

Serological and molecular detection of avian influenza (H9N2), Newcastle disease and infectious bronchitis viruses in indigenous fowls in Ahvaz region

Zahra Boroomand[1], Ramezan Ali Jafari[1] , Mansour Mayahi[1], Elham Maleki[1]
Department of Avian Medicine, Faculty of Veterinary Medicine ShahidChamran University of Ahvaz, Ahvaz, Iran

Objectives : Acute respiratory tract infections are of paramount importance in the poultry industry. Avian influenza virus (AIV), infectious bronchitis virus (IBV), Newcastle disease virus (NDV) have been recognized as the most important pathogens in poultry.
Materials &Methods: In this survey, A total of 100 Rural chickens that suffered from respiratory disease were sampled for serological and molecular detection. Serum samples, oral and cloacae swabs were used for this study. Rural chickens were raised in free ranging traditional and backyard systems. Swabs were tested by using reverse transcription PCR. Sera were tested for the presence of antibodies against IBV virus antigens by ELISA and the haemagglutination inhibition (HI) test for AIV H9N2 and NDV.
Results &Conclusion: The reverse transcription PCR results showed that 17,20 and 10% of these birds were infected with NDV, IBV and AIV, respectively, whereas 23, 4, and 13% of these birds were infected with both NDV and IBV; NDV and AIV; IBV and AIV. Furthermore, 7% of these birds were infected with IBV, NDV, and AIV at the same time. On the other hand, 6% of these birds were negative for the above-mentioned respiratory diseases. 27% of birds were vaccinated by AI H9N2 and ND killed vaccine. The chickens had no history of vaccination against infectious bronchitis virus.overallseroprevalence of ND, AI and IB virus antibodies was 92.5, 89 and 100% in these rural chickens but the prevalence of protective Newcastle disease virus antibodies in vaccinated chickens was 60% and in unvaccinated chickens 67.%. The prevalence of protective AI H9N2 virus antibodies in vaccinated chickens was 50% and in unvaccinated chickens 27%. The prevalence of protective IBV antibodies was 34%.These results suggest that for the "vaccinated chickens" group, the vaccination was not well carried out, furthermore the results also imply the possibility of circulation of a wild strain of virus. It is suggested that this group of scavenging birds may play significant roles in the transmission of these three viruses to commercial poultry farms. The introduction and sustenance of routine vaccination of scavenging village poultry against ND and AI H9N2 is highly recommended. Nation-wide active surveillance of AI, ND and IBV should also be conducted to define the true status of the disease in poultry in Ahvaz.
Keywords, Newcastle disease, Avian Influenza ,infectious bronchitis, Rural chickens, RT-PCR, Ahvaz

Design and Evaluate a Multiplex PCR Technique in Detecting Infection of Newcastle, Bronchitis and Influenza in Poultry

Seyed Davood Hosseini*, Nafiseh Mirjamali mehrabadi, Saideh Ebrahimi
Razi vaccine and serum research institute, Markazi branch, Arak, Iran.

Objective: Some of the most important and dangerous diseases that today poultry industry is faced with and lead to affect the profitability of poultry industry, are infectious Bronchitis, Newcastle and poultry influenza. Early and rapid detection of these diseases are very important. The molecular detection method by using PCR is one of the best and most rapid and prevalent methods that used for detection of poultry viral diseases. Multiplex PCR is one of the best methods that used for detection of viral diseases and is able to detect several viruses simultaneously. Thus, by this method, we are able to detect these three viruses by a high accuracy and less expenses. The objective of this present study is to detect infection of IBV, NDV and poultry influenza virus by Multiplex PCR simultaneously in a single reaction.
Materials and methods: After RNA extractions of three viruses, IBV, NDV and poultry influenza virus, from standard strains, cDNA were made by *Reverse Transcriptase* Enzyme and specific primers of each. Then, PCR reaction was managed and optimized. Therefore, the condition was observed for the viruses two by two, and finally, a Multiplex PCR reaction was done for the all three viruses simultaneously and related bands of each were observed.
Results& Conclusion: 637 bp band for IBV, 234 bp band for NDV and493 bp band for HN in a same column on the agarose gel was clearly visible. According to expanding of poultry industry and its more over effects on economy of the countries and even the world, the need of faster and more accurate detection of diseases, especially viral diseases, is seemed so essential. Hence, using modern molecular methods like Multiplex PCR could help to detect and treat these viral diseases.
Keywords: multiplex PCR,NDV,IBV,AIV

Development and Validation of a One-Step Real-Time PCR Assay for Detection of Subtype H5 Avian Influenza Virus

Mirzaei *[1], S.G. , Shoushtari[2], A., Nouri, A.[1]
1. Department of Avian Bacterial Diseases, Research & Diagnosis, Razi Vaccine and Serum Research Institute, Karaj, Iran
2. Department of Avian Viral Diseases. Razi Vaccine and Serum Research Institute, Karaj, Iran
***Corresponding authors email: s.mirzaei@rvsri.ir**

Objectives: Our purposes from this study was to detect H5 subtype of avian influenza (AI) viruses with high sensitivity and specificity beside rapid test using by real time RT-PCR.
Materials & Method: Each components that are effective at reaction includes probe and primer concentration, different materials and term of thermal needs to be optimization. Therefore we performed the multifarious tests to determine optimum concentration for probe and primers and also different thermal cycles, and selected optimum thermal cycle. The specificity of the primer/probe sets was tested on nucleic acids extracted from a diverse array of microorganisms that may be naturally present in samples of avian origin. The sensitivity of the RRT-PCR assay was determined by using in vitro-transcribed RNA and 10-fold serial dilutions of titrated AI viruses.
Results & Conclusion: High sensitivity levels were obtained, with limits of detection ranging from 10^1 to 10^3 RNA copies and from 10^1 50% egg infectious dose (EID_{50})/100 µl to $10^{2.74}$ EID_{50}/100 µl with titrated viruses. Excellent results were achieved in the intra and inter assay variability tests. The repeatability of the H5 RRT-PCR assay was determined using three different concentrations (high, medium, and low) of viral subtype tested. The coefficients of variation within runs (intra-assay variability) ranged from 0.12% to 2.64%. The inter assay variability was in the range of 2.۷6% to 4.۰۶%. In conclusion this experiment revealed that real time RT-PCR is more suitable replacement for recognition of highly pathogenic influenza viruses by virus isolation methods.
Key words: H5, Avian Influenza virus, Real time RT-PCR

Effect of dietary concentrations of crude protein and amino acids on performance, lymphoid organs weight and immunological responses of broiler chicks

Safdari P, Jahanian R*

Department of Animal Sciences, College of Agriculture, Isfahan University of Technology, Isfahan 84156-83111, Iran

***Corresponding author's email: r.jahanian@gmail.com**

Objectives: The present trial aimed to investigate the influence of different crude protein (CP) and amino acid (AA) levels on performance, lymphoid organs development and antibody responses in broiler chicks.

Materials & Methods: A total of 144 day-old Ross 308 broiler chicks were randomly distributed among 3 dietary treatments with 4 replicates of 12 birds each. Dietary treatments included 3 dietary CP levels (control, and 1 or 2 percentage points lower), which fed to the birds during a 42 feeding trial. Dietary CP levels were 23, 22, and 21% during starter period. The respective values were 21, 20, and 19% during grower period, and 19, 18, and 17% during finisher phase. The ratio of most limiting AA to CP was constant among the different CP groups. Performance parameters were measured biweekly. In addition, antibody titers against different antigens were evaluated after respective inoculations. Moreover, 2 randomly-selected birds per pen were slaughtered at d 42 of age to measure lymphoid organs weight.

Results & Conclusion: Results showed that reducing dietary CP level by at least 1 percentage point caused a significant ($P < 0.01$) decrease in average daily gain (ADG). In the grower period, however, 2 percentage point reduction in dietary CP level was needed to decrease ADG. The chicks fed on diets containing the lowest CP level compensated the retarded ADG in the finisher period, so that the ADG of this group was similar to the control birds during entire (1-42 d of age) trial period. Although feed intake wasn't affected by dietary treatments, dietary CP reduction by 1 percentage point worsened feed conversion ratio during finisher period. Interestingly, the greatest ($P < 0.05$) weights of lymphoid organs (i.e. thymus, bursa of Fabricius, and spleen) were seen for the birds fed on the lower CP diets. Although reducing dietary CP and AA levels had no marked effect on antibody titers against sheep red blood cell and infectious bronchitis virus, it resulted in a significant ($P < 0.05$) decrease in influenza antibody titer. In contrast, antibody response to Newcastle disease virus was increased as the result of 2 percentage point reduction of dietary CP level. The present findings indicate that reducing dietary CP level could suppress immunological responses in the starter periods, while had an opposite effect in the later periods.

Keywords: broiler chicks, dietary crude protein, amino acid density, immune responses, humoral immunity, performance

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Dietary Manan Oligosaccharides on Performance, Intestinal Morphology and Cecal Microflora of Broiler Chicken

Nadjari MM[1],Miranzadeh H[2*],[3]Shojaian K

[1]Graduate of zaboluniversity, [2]university of applied science and technology – Education of complex Esfahan jahad agriculture,[3] Assistant professor University of Zabol, Iran

Corresponding author's email: Miranzadeh2@hotmail.com

Objectives: This study was conducted to investigate the effects of mannan oligosaccharides (MOS), which are commonly used as alternatives to antibiotics, on the growth performance , some blood parameters , Intestinal Morphology and Cecal Microflora in broiler chickens.

Materials & Methods: In an experiment 560Ross broilers sexed were weighted and randomly assignedto the seven treatment groups, each with four replicates. Birds were housed in replicate pens each containing 24 birds (male). The seven treatments were as follows:1- basal diet (control) 2- basal diet with antibiotic, Virginiamycin (AGP1, 0.02g/kg diet) 3- basal diet withmannan oligosaccharide (MOS, 0.5 g/kg diet) 4- basal diet withmannan oligosaccharide (MOS, 1 g/kg diet) 5- basal diet withmannan oligosaccharide (MOS, 1.5g/kg diet) 6- basal diet withmannan oligosaccharide (MOS, 2g/kg diet)7- basal diet withmannan oligosaccharide (MOS, 2.5g/kg diet). Chicks fed on basal diets were supplemented with Manan Oligosaccharides were significantly heavier at 21 and 42 days of age than that of control chickens fed with basal diet as control.

Results & Conclusion: Feed consumptionof birds was affected by dietary treatments determined both at 21-42 d and 1-42 d periods ($P = 0.1109$). Feed conversionratio of birds was significantly affected by dietary treatments determined both at 1 to 21 d ($P < 0.01$), 21-42 d and 1-42 d periods ($P < 0.05$). Percentage weight of carcass yield, breast and leg muscles, pancreas and gizzard wasnot affected by dietary treatments also ($P > 0.05$). However, Percentage weight of carcass yield, liver, Intestinal ($P < 0.05$) and abdominal fat pad ($P < 0.001$) affected by dietary treatments also. There was no significant difference inserum HDL cholesterol of birds fed with Mos, However, LDL cholesterol, total cholesterol and triglyceride levels was significantly lower in birds fed with MOS than that of control chickens fed with basal diet as control. Higher villus height (VH) ($P=0.13$) were seen in the Intestinal of birds fed diets with MOS; crypt depths wasnot affected by dietary treatments also ($P > 0.05$). But villus height to crypt depths ratio significantly affected by dietary treatments Mos ($P < 0.01$).The pH of ileal contents were affected by dietary treatments but pH of cecal contents were unaffected. The population of cecal Escherichia coli (E.coli) andClostridium perfringens was decreased, especially by the high experimental treatments. In addition, Dietary MOS did significantly affect the cecal populations of Lactobacillus.

KeywordsMannanOligosaccharides, Broiler, E.coli, Cecal

Survey of separate effects of vitamin components in AD_3E oral solution on lameness improvement of chickens at an aviculture in zabol suburb

Amohammadtaqi khammar[1].ayda davari[2].ali riasi[3].faruq sarani[4]
[1],3,4: doctoral student in veterinary professionals. Zabol University. Zabol. Iran
[2].DVM,ph.D Assistant professor of pathology Department of pathobiology. Zabol University. Zabol. Iran

AD3E is an effective solution for treatment of vitamin deficiency, improvement in the growth performance and immunity, increasing quality of egg production in chickens and prevention and treatment of skeletal abnormalities.AD3E is a dietary vitamin which is a complex of several vitamins(A,D3 and E).Vitamin A has an important function in preserving of retinal epithelium and phosphorus in blood flow. Besides, vitamin E as another component of AD3E oral solution has many biological functions such as stimulation of growth and fertility, increasing of body natural defense and antioxidant activities. The aim of this study was comparison between these vitamins effects on lameness improvement of chickens at an aviculture near zabol city. For this reason ,100 chickens were randomly selected from 12000 affected ones. Afterwards, they were divided into 4 groups (group1:control,group2:treatment with 0.5cc of vitamin A daily, group 3:treatment with 0.3cc of vitamin D3 daily and group 4:treatment with 0.4cc of vitamin E daily). The vitamins were administered to the treatment groups by gastric gavage route from 20th to 45th day for 25 days. The results showed that groups 3 demonstrated amore rapid recovery in comparison with the other groups.

Key words:AD_3E.lameness.chicken.zabol

Herbal Methionine Bioavailability in Comparison with Synthetic D-L Methionine in Broilers

[1]Dr.Mahmud Shivazad, Full professor University of Tehran faculty of agriculture
[2]Omid Nuri, MSc graduated student University of Tehran faculty of agriculture
[3]Dr.Hossein Moravej, Associate professor University of Tehran faculty of agriculture
[4]Dr.Leyla Lotfi, PhD graduated student University of Tehran faculty of agriculture
[5]Sanaz Gholamrezazadeh, MSc graduated student University of Tehran faculty of agriculture
[6]*Dr.MinaKhodadadi, PhD student University of Tehran faculty of veterinary medicine physiology department
department.Mina.khodadadi@ut.ac.ir

In order to determine herbal methionine bioavailability in comparison with synthetic D-L methionine in broilers, 200 day old male broiler chicks (ROS 308) were divided to 10 treatments with 4 blocks each with 5 birds randomly. Corn and soybean meal basal diet without any sources of methionine was formulated as a control treatment and other treatments designed by equal gradual increase from each source of herbal and synthetic methionine. Final weight gain, feed consumption and mortality rate were recorded and FCR and production index were calculated. Bioavailability of herbal methionine in comparison with D-L methionine was evaluated based on production index using regression analysis.
The results showed herbal methionine has 57% efficacy in comparison with synthetic D-L methionine. The lower bioavailability of herbal methionine probably is due to inability of this source of methionine to cover whole major methionine functions in body such as protein synthesis and only covers part of major function and whole subsidiary functions of methionine such as methyl donors and etc.
In conclusion, synthetic D-L methionine cannot be replaced by herbal methionine completely, but replacement of partial amount of synthetic D-L methionine with organic and cheaper herbal methionine is recommended.
Keyword: Bioavailability, herbal Methionine, Synthetic D-L Methionine, Broilers

Copper- methionine changed MMP-2 gene expressionin heart of broiler chickens under cold temperature

Bagheri Varzaneh M [1,2*], Rahmani H[1],Jahanian R[1],Mahdavi A[1], Perreau C[2], Perrot G[2], Brézillon S[2], MaquartF.X[2,3]

[1] Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran, 84156-83111

[2] Unité de Recherche "Matrice Extracellulaire et Dynamique Cellulaire" (MEDyC), UMR CNRS/URCA NO 7369, Faculté de Médecine de Reims, 51095 Reims cedex, France

[3] CHU de Reims, Laboratoire Central de Biochimie, 51092 Reims cedex, France

Corresponding author's email: Mina_b641028@yahoo.com

Objective: This study was conducted to investigatethe effect ofdietary copper-methinione on matrix metalloproteinase-2 (MMP-2) mRNA expression in heart of broiler chickens reared in low temperature.
Materials & Methods:A total of 480 one-day-old broiler Chickens (*Ross 308*)were randomly distributed among six treatments and four replicates. Diets consisted of three levels of copper- methionine (0, 100, 200 mg/kg of diet). Half the broiler chickens were reared in low temperatures (15□19 □C) during 28 to 45 days of age and the rest broilers were grown in normal temperatures (25□28 □C) during 1 to 45 days of age. Ascites was detectedat 45 d of age in broiler chickens reared in cold temperature without receiving dietary copper as copper- methionine by abdominal and pericardial fluid accumulation.Four broilers of each treatment were selected at days 38 and 45 of age. Their heart were stored at □ 80 ºC. RNA isolation, cDNA synthesis, reverse transcription-polymerase chain reaction (RT-PCR)and Real-time PCR were performed for detectionMMP-2 gene expression. Data were analyzed by GLM procedure of SAS software (1998) and Least Significant Difference test. P< 0.05 was considered statistically significant.
Results & Conclusion: The results of RT-PCR showed that low temperatures increasedMMP-2mRNA expression. The highest MMP-2gene expression was detected in heart of ascitic broilers. Real-time PCR analysis confirmed RT-PCR results.Feeding copper-methionine significantly decreased MMP-2 gene expression in cold conditions. In conclusion, the present study indicated that feeding copper-methionine can decrease MMP-2 gene expression and ascites incidence in broiler chickens reared in low temperatures.
Keywords:matrix metalloproteinase-2mRNA expression, ascites, copper-methionine, heart, broiler chickens

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Effect of Adding Phytase Enzyme to Diet and Small Intestine Morphology and Some Blood Parameters in Broiler Chicken

Ali Mahdavi[1], Ehsan Pourafshar[2],Mohammad Sadegh Ghodrati[3,*], Fatemeh Yosefzadeh[3]

1Assistant professor, Faculty of veterinary medicine, Semnan university, Semnan, Iran

2Faculty of veterinary medicine, Semnan university, Semnan, Iran

3DVM student, Assistant professor, faculty of veterinary medicine; Semnan university, Semnan, Iran

Corresponding author E-mail: m.sadegh.ghodrati@semnan.ac.ir

Objects: There are various types of enzymes that are essential to poultry feed. Each one has a specific role and function and result in numerous benefits for the poultry producer. In this study we evaluated the effectiveness of phytase enzyme to release organic phosphorus diets and balanced phosphorus diets with inorganic phosphorus.Phytase is an enzyme that breaks down phytase molecules, the form of phosphorus found in plants that is not naturally available for the animal, to release available phosphorus for animal growth.
Materials & Methods: This study was conducted in completely randomized design by using 350 (one-day-old Ross 308) broiler chicken. Chickens were divided into 5 groups and 7 replicate, each group was contained 10 chickens .Control group had no phytase enzyme in its diet but 50gram (per ton) phytase added in other treatments diet, also treatment (T) 1 , T2, T3 and T4 received 25, 50, 75 and 100 percent organic phosphorus, respectively. Blood sample were collected from the wing vein at the 28 and 42 days and plasma separated immediately and blood parameter such as Glucose, Blood Urea Nitrogen (BUN), Creatinine, Cholesterol, triglyceride were measured by auto-analyzer. At the end of experiment chickens were sacrificed and duodenum, jejunum and ileum samples were collected and fixed 10%. Samples were sent to laboratory and slides were prepared. Finally data were analyzed by GLM procedure using the SAS software (SAS, 2000).
Results & Conclusion: Obtained results indicate that the only BUN had statistically significant difference and other parameters didn't show a significant difference. Almost the highest value for villus depth and crypt depth in duodenum, jejunum and ileum were belonging to treatment groups and some of them were statistically significance. Overall, adding phytase enzyme to diet can modified small intestine whit no significant different on blood parameters also it can breaks down phytase moleculesto release available phosphorus for animal growth.
Key Words: Phytase, Ross 308, broiler chicken, performance, blood parameter.

Development of a SYBR Green-Based Real Time RT-PCR Assay for Detection and Quantification of the H9N2 avian influenza viruses

Eshratabadi.F, Shoushtari A,Aghaeipour KH,Ghoudarzi H,Mahmoodzadeh M.Abtin A.
Razi Vaccine & Serum Research Institute

eshratabadi_f@yahoo.com

Introduction: Since the 1990s, outbreaks of H9N2 AIV in poultry have caused great economic losses in the industrial poultry populations in many countries in Asia and the Middle East. To have a reliable method for quantification and detection of this virus a SYBR green-based one-step real time reverse transcription-PCR (RT-PCR) was developed.
Materials and Method: The HA genes of a H9N2 virus strain, A/chicken/ Iran/772/1999 was amplified by RT-PCR and the amplification products were cloned into PTZ57R/T vector by TA cloning kit .Plasmids with the HA insert were isolated from positive Escherichia coli DH5α colonies by using a plasmid High pure plasmid isolation kit. The number of plasmid copies was calculated. To determine the limit of detection of the assay for RNA copy numbers and egg Infectious dose(EID_{50}) tenfold dilution from $10^{1}$to 10^{10} copies number and virus solution knowing the original concentration were respectively prepared. The validation of the assay in terms of sensitivity, specificity. Intra assay and inter assay approaches were carried out.
Result: The primer pairs on the basis of the hemagglutinin gene sequences of H9N2 viruses amplified subtype specific fragments with Tm values of 82.77±0.5 . The standard curves with a dynamic linear range on the base of serial ten-fold diluted plasmid and infectious dose showed a detection limit of 150 copies and 10^{1} EID_{50} per reaction respectively .The assay R^2 value was 0.999, indicating the linear regression between the standard curve line and individual C_T data point from the standard reaction. No cross-reactivity was observed with all other avian influenza sub types, Newcastle Disease Viruses, Infectious Bronchitis Viruses, and Infectious Bursal Disease Viruses. The RRT-PCR assay was about 100-fold more sensitive when compared to the conventional RT-PCR method. In addition, the sensitivity and specificity of RRT-PCR assay were s 100% and 92% respectively.
Conclusions: A rapid, specific and reproducible SYBR Green real-time RT-PCR assay was developed for the diagnosis of avian H9N2 infection in chickens. This assay can accurately detect avian H9N2 RNA with more sensitivity than conventional RT-PCR. Considering the limit of detection of the current assay it could be strongly suggested for control quantification of oil- based vaccine base through the production process.

Development of BHK21 cellstransfected with factor X for efficient replication of the low pathogenic influenza virus

Shahsavandi S*, Ebrahimi MM, Masoudi S
Poultry Viral Vaccines Research and ProductionDepartment, Razi Vaccine and Serum Research Institute, Karaj, P.O.Box:31975-148, Iran
Corresponding author's e mail: s.shahsavandi@rvsri.ac.ir

Objectives: Virus isolationin eggorcell culture is a valuable andhighly sensitive methodtodetectviral infection.Avian influenza viruses reach high titers when grown within chicken-origin cells; however the efficient replication and infectivity of low pathogenic viruses are achieved in the presence of supplemental trypsin which limitthe viral growth in cell cultures.In this study factor 10 (FX)was expressed in the baby hamster kidney (BHK-21) cell and the impact of the established BHK-21/FX cell on susceptibility and influenza virus replication kinetics was assessed.
Materials and Methods: To generate a cell line which can cleave and activate influenza virus hemagglutinin (HA), cDNA clone for FX isolated from chicken embryo inserted into the mammalian cell expression vector pCDNA3.1 was transfected into BHK-21 cells. Then the growth kinetic of avian influenza H9N2 virus in BHK-21/FX cells with providing the impact of the cellular protease roles in virus infectivity, virus multiplicity of infection, expression of virus M gene, and molecular characterization during seven consecutive passages.
Results and conclusion: The BHK-21/FX cell could proteolytically cleave the HA of H9N2 influenza virus at multiplicity of infections 0.01, 1.0, and 2.0 and support virus entry without supplemental trypsin. Titration data showed the markedly efficient multicycle viral replication in BHK-21/FX cell at subsequently passages. The replication rate was significantly differed with the BHK-21 control cell. The comparative sequence analysis of virus genes indicated no substitutions were occurred in amino acid sequences. These data indicate potential application for the BHK-21/FX cell in highly titer H9N2 influenza virus replication procedure and related studies.
Keywords: Influenza virus, Growth dynamics, Hemagglutinin, Factor X, BHK-21

Evaluation of H9N2 avian influenza virus replication and tissue distribution in Canadian partridge (Alectoris Chukar) by Reverse Transcription – PCR

Nili H[1], Ghale Golab N[2], Khadem A[3], Abbasnia M*[4],
[1] Avian Disease Research Center, School of Veterinary Medicine, Shiraz University, Shiraz, Iran. [2] Razi Vaccines and Serm Research Institue(RVSRI), Shiraz Branch, Iran. [3] School of Veterinary Medicine, [4] Avian Disease Research Center.
Corresponding author's email: Abbasnia.m@shirazu.ac.ir

Objectives: H9N2 Avian influenza virus (AVI) infection is a major cause of economic losses in poultry industry. The purpose of this study was to Evaluate H9N2 avian influenza virus replication and tissue distribution in Canadian partridge (Alectoris Chukar) by Reverse Transcription – PCR.
Materials & Methods: To determine replication and tissue distribution of influenza virus H9N2, 125 Chukar partridge were randomly allotted including four experimental and one control groups (25 birds in each group). The birds, except for the control group (group 5), were challenged with a various concentration of A/Chicken/Iran/722/2000 (H9N2) virus isolate (10 8.5,10 7.5,10 4.5 and 10 0.5 EID50). On days 1, 3, 6, 9 and 12 post inoculations (PI) trachea, thymus, lung, spleen, kidney, pancreas, small intestine and cecal tonsils were collected for molecular detection. A Reverse Transcriptase Polymerase Chain Reaction (RT-PCR) test was performed for virus detection.
Results & Conclusion: In groups 1 and 2 which received the highest viral dose (10 8.5 and10 7.5 EID50, respectively) clinical signs including depression, listlessness, sneezing and coughing, were observed in 3 and 6 days PI. In groups 1 and 2, viral RNA was detected in the trachea on days 1, 3, 6, 9 and 12 PI. The virus was also found in the lungs on 1, 3, 6, 9 and 12 days PI and in the pancreas on days1, 3 and 6 PI only in groups 1 and 2. The virus was also found in the kidney 6 day PI and in the thymus on days 1 and 12. Viral RNA not observed in 12 day PI in cecal tonsils. Small intestine were positive for virus RNA in days 1, 3 and 6 PI. In all days of sampling, virus RNA were detected in spleen specimens in group 1 and
2. These results indicate that H9N2 AIV could be detected in the respiratory and urinary systems and the spleen following intranasal/oral inoculation and in other organs depend upon viral dose and days passed after virus inoculation. Hence, more replication and tissue distribution of AI virus occur in high concentration of virus in time of inoculation.
Keywords: H9N2, tissue distribution,Canadian partridge, RT– PCR .

Evaluation ofH9N2 subtype of Avian Influenza tissue tropism in SPF chickens by virus isolation method

MomayezR[1], Bijanzad P[2*], MahmoodzadehM[1], NikpiranH[2], Banaei M[3], NikkhahS[4],Faramarzi S[3]
1. Razi Vaccine & Serum Research Institute, Karaj, Iran
2. Department of Clinical Science, Tabriz Branch, Islamic Azad University, Tabriz, Iran
3. Department of poultry disease, Science and Research Branch, Islamic Azad University, Tehran, Iran
4. DVM Graduated from faculty of veterinary medicine, Islamic Azad University of Tabriz, Tabriz, Iran
Corresponding author's email: drbijanzad@gmail.com

Objective: Infections by Avian influenza virus (AVI) H9N2 subtype is a major cause of economic losses in Iranian poultry industry. This study was evaluated the tissue tropism of A/chicken/Iran/m.1/2010 (H9N2) virus
Materials & Methods: Tissue dissemination of A/chicken/Iran/m.1/2010 (H9N2) virus was investigated in different organs of SPF chicks. Forty two, dayold SPF chicks were divided randomly into two groups (21 chicks per group) in separate positive pressure isolators. At the age of 12days-old the chicks in group-1 were inoculated with 10^6EID50 AIV by eye drop, group-2 was kept as the control group. The samples from various tissues were collected at 2,4,6,8,10, and 12 days post-inoculation (PI). The virus isolation methods was used for detection of the viruse dissemination.
Results & Conclusion: In group-1 AIV was detected in the trachea, lungs, spleen and cloaca. Our results indicated that the virus was detected in trachea, lung and spleen samples of infected groups on 2 days PI only and in cloaca samples it was detected by virus isolation on 6 days PI. The virus was not detected in cecal tonsils, kidney, bursa of fabricius and thymus. Also there was not any mortality in any groups. Our results indicated that the H9N2 subtype of Avian Influenza in SPF chickens has limited dissemination, and perhaps other pathogens in commercial poultry houses cause extreme mortality and losses.
Key words:Avian Influenza (H9N2), Virus Isolation, Tissue dissemination, SPF chickens

Seroepidemiology and Risk Factors of Avian Influenza H9N2 in backyard poultry of Iran 2013-2014

Fallah Mehrabadi M.H[a], Bahonar A.R*[b], Vasfi Marandi M[c], Sadrzadeh A[d],Tehrani F[e] , GHafouri SA[e]
[a] *Department of Poultry Viral Diseases, Razi Vaccine and Serum Research Institute, Karaj-Iran*
[b] *Department of Food Hygiene & Quality Control, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran*
[c] *Department of Poultry Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran.*
[d] *Department of Poultry Diseases, School of Veterinary Medicine, Azad University, Garmsar, Iran.*
[e] *Department of Health and Management of Poultry Diseases, Iranian Veterinary Organization. Tehran, Iran.*
***Corresponding author** at: Department of Food Hygiene & Quality Control, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran. Tel: +982161117056. E-mail address: abahonar@ut.ac.ir

Influenza is an acute, contagious, and zoonotic viral disease. It is caused by a virus of the Orthomyxoviridae family. This very infectious is caused by different subtypes of type A influenza virus in the poultry, turkey, and many other birds. The aim of this study was to estimate subclinical infections or previous exposure to H9N2 subtype and to identify potentially important determinants of prevalence of this infectiousin backyard poultry in Iran.
A survey was conducted using a cross-sectional designfrom August to October in2013 and 2014 in Iranian villages throughout the entire country.TheEnzyme-Linked Immunosorbent Assay (ELISA) was used as the screening test and all ELISA-positive samples were examined with the HI test for H9N2.The questionnaire for independent variables was designed according to advice from veterinary experts regarding likely risk factorsof influenza in. The questionnaire was completed through a direct interview of the bird owners.
In 2013 a total of 397 villages and 11546 birds (10145 chickens, 1413 ducks, 397 turkeys, 10 pigeons, and 175 other species) were sampled. Three hundred and forty nine (88%) out of 397 villages were positive on ELISA. In addition, 341 villages (86%) were positive and 56 (14%) were negative on the HI test for antibody titers. Also 4517 samples out of 11546 were positive in HI test.In 2014 total of 329 villages were sampled. Testing of samples collected in the villages revealed that 296 out of 329 villages (90%) had positive ELISA tests and also HI tests for H9.
Also 3343 samples out of 8901 (37.6%) were positive inELISA test and 2771 samples (31.1%) were positive in HI test.
In 2013, among the considered variables, weather was a risk factor and the prevalence was significantly lower in villages near the rivers, lagoons and lakes (up to a radius of 3 Km). In 2014 the results of this study showed that among the risk variables, mountainous area was a protective factor. Our results also showed that a lack of hygienic disposal of dead birds was a risk factor for AI; this was also observed in rural poultry.
The high sero-prevalence of influenza H9N2 in rural domestic poultry indicates that the disease is endemic. It is necessary to include backyard poultry in any surveillance system and control strategy for this disease due to the existence of AIV in backyard poultry and the possibility of transmission of infection to commercial poultry farms. Implementation of an AI surveillance program and biosecurity measures can be useful to control this infection and prevent AI from spreading to commercial farms. Furthermorein Iran there is no program for destruction of birds infected with the H9N2 AI subtype, so an effective vaccination program with regard to issues such as acceptability and cost-benefit must play an important role in reducing infections in backyard poultry.
Keywords: Avian Influenza, H9N2 subtype, BackyardPoultry, Iran

Antiviral and cytotoxic evaluation of Moxidectin against Influenza Virus H9

Hameed R[1], Ashraf M[1], Rasheed, MA[1*], Anjum AA[2]
[1]Department of Pharmacology and Toxicology, [2]Department of Microbiology, University of Veterinary and Animal Science, Sheikh Abdul Qadir Jillani Road, Lahore, Pakistan
Corresponding author's email: dr_aadil@uvas.edu.pk

Objectives: This study was designed to evaluate antiviral and cytotoxic activity of Moxidectin against influenza virus H9 *in ovo* and *in vitro* by using Haemagglutination test and MTT (3-(4,5)-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide) colorimetric assay respectively.
Materials & Methods: A 200 embryonated egg were taken and divided into 8 groups to evaluate antiviral activity of six different concentrations (200, 100, 50, 25, 12.5 and 6.25µg/ml) of moxidectin against influenza virus H_9 with positive and negative control. A suspension of 0.1ml virus and moxidectin were inoculated via allantoic route on day 9th of incubation. After inoculation eggs were incubated at 37°C and were monitored for embryonic death 12 hourly for 96h. Then allantoic fluid was then collected and checked for antiviral activity by spot haemagglutination test. For *in vitro* cytotoxicity study, primary fibroblast cell line was prepared from embryonated chick eggs. Cytotoxicity of moxidectin was evaluated by MTT assay using primary fibroblast cell line prepared from embryonated chick eggs in 96 well plate having M-199 cell culture media and different concentrations of moxidectin. The cells along with drug same concentrations were incubated for 48hrs at 37°C. Viability of cells was determined by calculating the cell survival percentage.
Results & Conclusion: Moxidectin has strong antiviral activity at higher concentrations (200µg & 100µg/ml) but these concentrations are cytotoxic. Antiviral activity was moderate to weaker at lower concentrations (50µg, 25µg, 12.5µg, 6.25µg/ml). These lower concentrations were safe and effective against influenza virus H9.
Keywords: Antiviral and cytotoxicity of Moxidectin, Haemagglutination test**,** MTT (3-(4,5)-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide) colorimetric assay, Influenza virus H9

Assessment of Lead in the Broiler Chickens Raised in Qom Province

Masaeli Sh[1*], Fazlara A[2], RafieeMohammadi M[1]
[1]*Veterinary General Office of Qom, Qom, Iran;*
[2]*Department of food hygiene,Faculty of veterinary Medicine, ShahidChamran University of Ahvaz, Ahvaz, Iran*
Corresponding author's email: shmasaeli@gmail.com

Objectives: Lead is a toxic metal whose widespread use has caused extensive environmental contamination and deleterious cumulative effect on human health in many parts of the world, particularly in developing countries. As poultryare raised under controlled conditions,exposure to lead can mainly occur via food and water.Thus, the aim of the current study was to estimate concentration of Pb in water and feed consumed by broiler chicks to show any presumed lead residues in chicken meat produced in Qom province, Iran.
Materials & Methods: Totally 150 samples (75 samples of water and 75 samples of feed consumed by chickens) collected stratified randomly from broiler farms in five sections of Qom province and the concentration of lead (Pb) was estimated by using flame atomic absorption spectrometer (FAAS). Data were expressed as mean ± standard error (SE) and analyzed using one way analysis of variance (ANOVA) by SPSS 16 software.
Results & Conclusion: The mean Pbconcentration in water was less than LOD (Limit of detection), whereas food samples contain the mean152.53 ± 28.53 ppb. These data interpreted that lead residual concentration is less than the permissible limit (0.01 ppm for water and 5 ppm for whole food) in the Codex alimentariusfood standards and so it is concluded that quality of water and feed (in according to Pb residues) consumed by broilers in Qom is acceptable and in the range of permissible limit but Since Pb is accumulated in body gradually, consistent surveillance and monitoring of raw materials, whole food and water should be employed even for the other heavy metals.
Keywords: Lead (Pb), broiler, chicken, water, food, Qom

Effect of Dietary SilymarinSupplementation on Performance and Ileal Microflorain Broilers Challenged with *Escherichia coli*

Jahanian E[1*], Mahdavi AH[1], Asgary S[2], Jahanian R[1]
1. Department of Animal Sciences, College of Agriculture, Isfahan University of Technology, Isfahan 84156-83111, Iran
2. Isfahan Cardiovascular Research Center, Isfahan Cardiovascular Research Institute, Physiology Research Center, Isfahan University of Medical Sciences, Isfahan, Iran
***Corresponding author's email: elaheh.jahanian@gmail.com**

Objectives: The present study was carried out to assess the effect of dietary silymarin supplementation on performance and ileal microflora in broilers challenged with *Escherichia coli* O78:K80.
Materials & Methods: A total of 384 Ross 308 broiler chicks of 7 d of age were randomly assigned into 8 experimental treatments as a 2×4 arrangement with 4 replicates of 12 birds each. Experimental treatments consisted of two microbial conditions (unchallenged group and *Escherichia coli*challenge) and four dietary additive supplementations (no additive, 400 and 800 mg/kg ofsilymarin, and bacitracin). The chicks were challenged with *Escherichia coli*O78:K80 from 7 to 28 d of age. At 28 and 42 d of age, two birds of each cage were randomly selected and sacrificed to determine ileal microbial counts.
Results & Conclusion: Results showed that *Escherichia coli* contamination caused a marked ($P<0.0001$) decrease in feed intake and body weight gain; in turn,itnoticeably ($P<0.0001$) worsen feed conversion ratio throughouttrial period in broiler chick. Although dietary inclusion of silymarin especially 800 mg/kg resulted in theincreased feed intake and weight gain ($P<0.0001$) and improved ($P<0.0001$) feed conversion ratio, the greatestweight gainswere obtained in broilers fed on bacitracin.Dietary addition of bacitracin was more effective ($P<0.0001$) regarding to feed conversion ratio in broilers challenged with *Escherichia coli*.Challenging with *Escherichia coli* O78:K80 significantly ($P<0.0001$) increased ileal *Escherichia coli*, Salmonella,Klebsiellaand total negative bacteria enumerationsin both 28 and 42 d of age. Dietary supplementation of silymarin especially 800 mg/kg noticeably ($P<0.0001$) depressed all of studied microbial populations at 28 and 42 d of age.However, the lowest ileal microbial counts were observed as a consequence of feeding bacitracin. Moreover, application of bacitracin was more effective ($P<0.001$) concerning to ileal microbial population in birds contaminated with *Escherichia coli* at 28 and 42 d of age. In general, results indicated that dietary inclusion of silymarin could improve growth performance and decrease ileal microbial counts in *Escherichia coli* challenged broiler chicks.
Keywords: silymarin, performance, microbial counts, *Escherichia coli*, broiler chicks

Effect of dietary supplementation of egg yolk antibody on performance and immunological responses of broiler chicks

Jahanian R[1]*, Zare GR[2]
[1]*Department of Animal Sciences, College of Agriculture, Isfahan University of Technology, Isfahan 84156-83111, Iran;*
[2]*Mazraeh Feed Manufacturer, Isfahan, Iran*
***Corresponding author's email: r.jahanian@gmail.com**

Objectives: The present study was designed to investigate the effect of dietary supplementation with yolk antibody on performance and antibody responses in Ross broiler chicks.
Materials & Methods: Two hundred and twenty five Ross 308 broiler chicks were purchased from a local hatchery and were randomly distributed between 3 dietary treatments. Experimental treatments were included different levels of egg yolk antibody (0, 0.25 and 0.5% of diet), which was added to the diets from 1 to 7 d of age. An untreated diet was offered to the birds during the rest of trial period. Yolk antibody was provided through the eggs from a 52 wk-old laying hen's flock. Experimental diets were formulated to be isocaloric and isonitrogenous. The birds had free access to feed and water throughout the duration of study. The blood samples of 3 birds per replicate were collected on d 21 and 42 of age to measure antibody production titers against avian Influenza (AI), Newcastle (NDV), infectious bronchitis (IBV) and bursal (IBD) disease viruses.
Results & Conclusion: Results showed that dietary supplementation of yolk antibody had no marked effect on feed intake. On the other hand, supplemental yolk antibody tended (P = 0.07) to increase average daily gain (ADG) during starter period, but had no obvious effect on ADG during grower phase. Feed conversion ration wasn't influenced by dietary supplementation of egg yolk antibody. The finding of interest was that supplemental antibody improved AI and IBD antibody responses at d 21 of age. In addition, dietary inclusion of yolk antibody increased NDV antibody titer at d 42 of age. Antibody production titer against IBV, however, wasn't affected by dietary treatments. The present findings indicate that dietary supplementation of egg yolk antibody during the first days of chick life could increase immunological functions and may protect chicks against infectious diseases.
Keywords: broiler chicks, egg yolk antibody, performance, immunological responses, humoral immunity

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Effects of cinnamon essential oil in combination with nisin on the growth of *Salmonella typhimorium* in minced chicken meat during storage at refrigerator

RaminKarimi[1], Moslem Neyriz Naghadehi*[2]
[1] *Graduated MSc Course of Biology, Basic Science Faculty, Urmia Branch, Islamic Azad University, Urmia, Iran.*
[2] *Assistance Professor ofFood Hygiene and Quality Control Department,Veterinary Medicine Faculty, Urmia Branch, Islamic Azad University, Urmia, Iran.*
***Correspounding author: mnn.uiau@yahoo.com**

Objectives: essentialoilsof some plants and bacteriocinsare natural antimicrobial agents for enhancing thedurabilityand inhibition ofpathogens infood products. *Salmonella typhimurium* is an important pathogenic agent thatcauses salmonellosis inhumans. Meatand its productsareimportant sources of*S. typhimorium*transmission to humans.In these research effects of cinnamon(*Cinnamomumzeylanicum*)oil, nisin and mixture of cinnamon oil and nisin (cinnamon oil-nisin) on the growth and survival of *S. typhimurium* in chicken minced meat during 10 days of storage at refrigerated temperature was studied.
Material and Methods: extraction of cinnamon essential oil, analyze the chemical composition of the cinnamon oil, determination the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) of the cinnamon oil, nisin and cinnamon oil-nisin on *S. typhimurium*, preparation of the minced chicken meat containing *S. typhimurium*, various concentration of cinnamon oil (100, 200 and 400 ppm), nisin (100, 200 and 400 i.u/g),and cinnamon oil-nisin, counting of*S. typhimurium*, performance of standard plate count (SPC) and pH measurements on different storage days at refrigerator (zero, 4, 7 and 10) were the methods used in the study.
Results and Conclusion: the major constituents of cinnamon oil werecinnamic aldehyde (35.23%), -bergamotene (15.06%) and trans-cinnamyl acetate (12.08%). The MIC values of cinnamon oil, nisinand the cinnamon oil-nisin were 1.6 mg/ml, 100 i.u/ml and 0.8 mg/ml-50 i.u/ml respectively.Determination of FIC (Fractional Inhibitory Concentration) index showed that the cinnamon oil-nisin inhibitthe *S. typhimurium*additively. The cinnamon oil-nisin was the most effective treatment in reducing of *S. thyphimurium* count and SPC in minced meat. The pH values showed no significant differences among the tested treatments. Also among the tested various concentrations of treatments, the mixture of 400 ppm cinnamon oil and 400 i.u/g nisin was the most effective concentration in reducing *S. typhimurium* count and SPC.From the results it can be concluded that the cinnamon oil-nisinwas the most effective treatment in decreasing of *S.typhimurium* count and SPC. Therefore the cinnamon oil combination with nisinto enhance durability and inhibition of pathogens in minced meat is recommended.
Keywords: Cinnamon essential oil, nisin, *Salmonella typhimurium*, minced chicken meat

Effects of ofloxacin residueson health and muscle quality biomarkers in chicken

Zia-ur-Rahman[1*] and Farheen Asad[2]
[1]InstituteofPharmacy, Physiology and Pharmacology, Faculty of Veterinary Sci, University of Agriculture, FaisalabadPakistan. [2]Government College for Women, Jaranwala, Faisalabad. Pakistan
***Corresponding author: drziar@yahoo.com**

Quinolones are frequently usedas antibiotics for growth and biosecurity of poultry but their residual effects causes oxidative damage to muscle and vital organs have not been addressed. Therefore, we investigated the effect of antibiotic residues of ofloxacin on serum and muscles total antioxidants, oxidants, paraoxonase, arylesterase and catalase activities. Five weeks old broiler birds (n=36) were treated with ofloxacin@ 10 mg/kg b.wt/day for 5 consecutive days through drinking water. Six birds were killed for each time interval (every day during treatment) for the detection of antibiotic residuein muscles and liver by HPLC with fluorescent detection.Experiment was conducted according to the institutional ethics committee. Health biomarkers including paraoxonase, arylesterase and catalase were analyzed by their respective methods and concentrations were measured by photometric method fromserum, muscles and liver.Ofloxacin did show a residual effect on day 3 of experimental study.Oxidant status did increase on day 1 in liver and on day 3 in muscle after ofloxacin therapy and level remainedhigh throughout experimental period that may lead to deterioration of broiler meat.Ofloxacin did decrease the muscle arylesterase but did not show any significant effect on serum arylesterase. Muscle catalase and serum paraoxonase were significantly decreased by ofloxacin at day 1 of the experiment. However, after 4 days of wash out period for drug, the antioxidants status was improved without any significance. In conclusion our results did show that residues of ofloxacin have deteriorative effects on meat quality by increasing the oxidant level in the muscles and serum.

Key words: Antibiotic residues, Health biomarkersOfloxacin, HPLC, Meat, Chicken

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H120 and 1/96 strains Combination, protects chickens against challenge with IS-1494/06 like of infectious bronchitis viruses

Arash Ghalyanchi langeroudi, Mostafa Habibi, Vahid Karimi, Seyed Ali Ghafouri, Masoud Hashemzadeh, Reza Khaltabadi Farahani, Hossein Maghsoudlo, Hamed Abdollahi, Parvaneh Seifouri, Taha Zabihi

Avian Infectious bronchitis is a worldwide chicken disease, which infects all commercial poultry lines. The present study was conducted to evaluate protection caused by two different serotypes' vaccines (Massachusetts & 793/B) in order to evaluate protection against challenge withIS/1494/06 like-virus (Var-2 like-virus) which is prevalent in Middle East. Chickens were divided into four groups (20 birds each). First and second groups (as negative control group and non-vaccinated-challenged group) received no vaccine. Groups 3 received two vaccines on days 1 and 14, and H120-1/96 strain (IBird). 21 days post last vaccination,non-vaccinated-challenged group and vaccinated group were challenged using variant2-like IBV virus. Immediately before challenge, serum samples were collected to measure humeral immune response of chickens to vaccination. Five days post challenge tissue samples from the trachea, lung and kidney were taken to evaluate cilliary activity and histopathological evaluation. Clinical signs score were also recorded after challenge. Overall results showed protective ability of vaccination program used in this study. High cilliary activity (%69.2 protection) was obtained by the H120-1/96vaccinatedgroup. ELISA results of sera also showed acceptable titers of chicken in the H120-1/96 (GMT:1960) vaccinated group. Clinical signs scores of the challenge birds were also illustrating significant effects of the vaccination program in reduction of the clinical signs (zero in vaccinated and negative control groups compare to 1.5 median score in Non-vaccinated-challenged group). Pathological scores of the trachea and histopathological findings in the lungs and kidneys also showed confirming better protective effect of vaccinated groups. In conclusion, using combination of heterologous vaccine serotypes (H120-1/96) would be a properprogram to control of variant 2-like viruses, but more evaluation would be needed using other circulating isolates to find best combination of vaccines.

Comparison between two different programs of vaccination against Infectious Bronchitis Virus on systemic antibody responses in chickens

Talazadeh F.[1*], Mayahi M. [1],Zahabi H.[2]and Parsaei P.[3]

1-Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahid, 2Chamran University of Ahvaz, Iran, 3-Resident of avian disease, Faculty of Veterinary Medicine, Shahid
Chamran University of Ahvaz, Iran4-poultry clinician

Corresponding author: hessamoddin.zahabi@gmail.com

Objectives: The objective of this study was to investigate two different programs of vaccination against Infectious Bronchitis Virus on systemic antibody response in chickens. **Materials &Methods**:In the present study, 84000 day-old broiler chicks divided into 2 groups. The chickens in the group 1 were vaccinated with Nobilis® IB Ma5at day old and Nobilis IB 4/91 at11 days of age via spray administration. The chickens in the group 2 were vaccinated with Nobilis® IB Ma5 at day old via spray administration and Nobilis IB 4/91 at 11 days of age via drinking water. Sera were collected at 28 days of age and submitted to serologic tests to assess antibody levels. Results demonstrate that there is significant statistical difference between the vaccinated groups.

Results & Conclusion: Table I:Mean ± SD of ELISA titer in broiler chickens which were vaccinated against IBV detected by ELISA.

The highest Ab levels noted to IBV in the groups 2 were vaccinated with Nobilis® IB Ma5 at day old via spray administration and Nobilis IB 4/91 at 11 days of age via drinking water.It seems that the mucosal vaccination (used in group 1) is very important in controlling the infection of this virus because it could remove this virus from respiratory organs, so in this program, the stimulation of systemic antibody responsewas lower than group 2. The classic role of the mucosal vaccination, which consists in stimulating IgA production, is still controversial when the infectious bronchitis model is studied. Many primary and secondary post-infection tests, including the characterization of the memory against IBV, have shown high levels of local IgY. Pei & Colisson (2005) demonstrated that the presence of IgA is important in controlling the infection and those long-life plasma cells, as those found in mammal bone marrow, are observed in the spleen of birds. IgY levels may be present for at least 18 weeks, ensuring rapid reaction when a challenge emerges. The presence of an attenuated vaccine virus in the respiratory system is intended to prevent its colonization by wild viruses.

Keywords: Infectious Bronchitis Virus, poultry chicks, systemic antibody responses, programs of vaccination

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Detection of DY12-2 like IBV viruses In Iraq: The First Report in Middle East

Waleed majeed Almayahi, Arash ghalyanchi Langeroudi, Vahid Karimi, Omid Madadgar, Masoud Hashemzadeh, Manouchehr Amini

Objective: The aim of the present study wasto investigate thepresence of DY12-2 likeviruses in Iraq.

Materials and Methods: One hundred IBV samples were collected from broiler chick farms in middle and south of Iraqduring 2014-2015.The total RNA was extracted from the tissues by using of CinnaPure RNA (silica membrane filters (Sinaclon Co.). CDNA was prepared with RT-PCR kit (thermo scientific co)according to manufacture instructions. IBV was detected by diagnostic-nested RT-PCR. Genotype identification was characterized by sequencing and phylogenetic analysis of the amplified hypervariable region of the spike 1 (S1) gene.The suspected recombination event was explained by further analysis of the S1 sequence alignment that showed DY12-2 like strain.

Results& Conclusion: results explained presence of DY12- like virus, andsuchviruses shared high nucleotides identity 98.72%, with CK/CH/SC/DY12-2, CK/CH/ZJ/QZ12-2 and CH/Guangdong/Xindadi (GU938442) respectively. DY12-2 appeared following the recombinationof CK/CH/GD/LZ09 and TA09 viruses in China and currently is a circulating genotype in China.In this paper we documented for the first time the presence of DY12-2 like viruses in Iraq during 2014-2015, which previously isolated in china.According to the persistence of this new genotype in China, it can be predicted that the genotype may be spread and persistent in Iraq and the Middle East in the future.

Keywords: IBV, DY12-2 like virus, phylogenetic analysis, broiler chicks, Iraq

Changes of cytokine levels during infections by two Iranian bronchitis virus variants: IS/1494/06 & IR-1 like

Hamideh Najafi [1] , Arash Ghalyanchi Langeroudi [1] , Masoud Hashemzadeh* [2] ,Vahid Karimi [3] , Omid Madadgar [1] , Reza Khaltabadi Farahani [4] , Hossein Maghsoudlo [4] , Seyed Ali Ghafouri [4] ,Taha Zabihi[1]

1- Department of Microbiology and Immunology, Faculty of Veterinary Medicine, University of Tehran, Iran.
2- Department of Research and Production of Poultry Viral Vaccine, Razi Vaccine and Serum Research Institute, Iran.
3- Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran.
4- Iranian veterinary Organization, Tehran, Iran.
Corresponding author's email: mhashemzadeh15@gmail.com

Objectives: In response to pathogens, host immune cells exhibit different reactions according to the nature of the infectious agent. The activation of inflammatory and immune systems is accompanied by cytokine release. Therefore, analysis of serum levels of cytokines may help us understand the functional alterations of the host immune system. The present study was conducted to investigate the IL-1 β and IFN- γ changes in serum of experimentally infected chickens with two IBV Iranian isolates(IS/1494/06 & IR-1 like) in Iran.
Material and methods: 72 SPF one-day-old chickens were divided randomly into three groups (thirty chickens in each two experimental group and twelve chickens in the control group). At age of 14 days, birds in the experimental group1 and group 2 were challenged via the intranasal route with viruses (Containing 10^4 EID50/0.1 ml of the virus) of Variant-2 like and IR-1 like strains, respectively. On days 1, 3, 5, 7, 14 and 21 and 28 post infection, blood samples of both infected groups and un-inoculated control group were collected. Chicken interferon gamma ELISA kit (Biospes-China) was used to detect interferon gamma following manufacturer's instructions. Interleukin 1β (IL-1β) in sera was detected by Chicken interleukin 1β ELISA kit. The obtained values were analyzed by ANOVA followed by Post Hoc tests.
Results & Conclusion: The mean serum level of IFN-gamma was increased significantly on day 5 post infection in IR-1 like infected group, as compared with control group. Increase of IL-1β levels in Variant-2 like infected chicks on day 1 post infection was significantly higher than control group. We observed early response of IL-1β in Variant2- like infected chicks and delayed response of INF-gamma in IR-1-like infected chicks. Variant-2 like virus infected chicks could not induce INF response, it may reflect the potency of this isolate to inhibit host immunity responses. In addition, there is no significant increase in IL-1β in sera of IR_1 like infected chicks. Maybe further studies are needed in which they apply more sensitive technics like real time RT-PCR which assesses cytokine mRNA levels.
Keywords: Infectious bronchitis virus, Interferon, Interleukin-1, Iran

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Prevalence of *Extended-Spectrum Beta-Lactamase(TEM)* producing *Escherichia Coli* in poultry Colibacillosis by polymerase chain reaction

Kafshdouzan Kh*[1], Pazhand O[2], Moradi Z[1]

[1]Department of Microbiology, Faculty of Veterinary Medicine, university of Semnan, Iran*
[2]Department of Microbiology,Faculty of Medicine, semnan, Iran
Corresponding author's email:kafshdouzan@semnan.ac.ir

Objectives: presence of *Extended-Spectrum β-lactamase (ESBL)* such as *TEM (Temoneria)* is a major reason for resistance of *Enterobacteriaceae* to β-lactam antibiotics in poultry industry. Since there is no detailed description in prevalence of TEM in *Escherichia coli* isolates in *Semnan,Iran*, the purpose of this study was determination of prevalence of *ESBL* producing *Escherichia coli* and bla_{TEM} type gene in broiler chicken farms in Semnan.
Materials and methods: In this study, Of 186 isolates collected from poultry farms and veterinary laboratory, 50 *E. coli* isolated from cloac of apparently healthy broilers and 50 *E. coli* isolated from viscera of broilers suspected colibacillosis. After identification of isolated by differential biochemical tests, the Combined disk method according to *CLSI*(*Clinical and Laboratory Standards Institute 2014)* guidelines (by MAST® D67C[5] set) was carried out for detection of *ESBL* production. bla_{TEM} gene was determined by PCR amplification.
Results & Conclusion: the results of this study showed that 32% of strains produced *ESBLs*(n=17cloacal, n=15 visceral group). The frequency of bla_{TEM} among *ESBL* producing isolates was 40.6%. According to the results, the prevalence of *ESBL* producing *E. coli* is relatively high in both studied groups. This finding provides evidence that healthy broilers in Semnan poultry farms could be as an important reservoir for dissemination of antimicrobial resistance by contaminating food chain. Therefore it is essential to plan on continuous surveillance of livestock-rearing and our food industries to monitor the *ESBLs* producing microorganisms.
Keywords: antimicrobial resistance, combined disk method, *Escherichia coli*, *Extended-spectrum β- lactamase (ESBLs)*, PCR

The effect of herbal medicine on immune system, blood biochemical parameters, intestinal microbial population and performance of broilers

S. Rahimi*[1], M. A.Karimi Torshizi[1], M. M. Ayari[2], S.Yakhkeshi[1], M.Noorani[1], R.Soleymani[1], G. R.Zaboli[1]
[1] Department of Poultry Science, Faculty of Agriculture, TarbiatModaresUniversity, Tehran- Iran
[2]Department of Horticultural Science, Faculty of Agriculture, TarbiatModares University, Tehran- Iran
E-mail: rahimi_s@modares.ac.ir

Thisstudy was conducted to comparethe effects of a novelherbal medicinewith antibiotic, a commercialherbal medicineand coneflower on immune system, blood biochemical parameters, intestinal microbial population and performance of broiler chickens.A total of 300 one-day old male broilers (Ross 308) were randomly allocated to 5 treatments, 6 replicates with 10 birds/penin a completely randomized design. Treatments were contained basal diet (control),novelherbal medicine(Immunosupport®), commercial herbal medicine(Immunofen®), antibiotic (Virginiamycin) and medicinal plant (purple coneflower) ina ratio of 1 to 1000in drinking water. The highest body weight gain obtained by antibiotic treatment (P<0.05). The lowest and the highest feed conversation ratio obtained by control and antibiotic treatments, receptivity (P<0.05). Moreover, the herbal medicinescaused to increase number of usefullmicrobial population of intestine like lactic acid bacteria, and decrease thegrowth of coliforms and total aerobic bacteria. Also, Immunosupport®showed the highest cell mediated immune response, and lowest serum cholesterol and triglyceridecompared to the other treatments (P<0.05). According to result of this experiment Immunosupport®can be used as antibioticalternativein poultry production.

Key word: Medicinal plants, immune system, broiler, performance.

Distribution of *iss* and *irp2*Genes in *Escherichiacoli* Isolated from Chicken withColibacillosis In Comparison With HealthyChicken in Sistan

Mohammad Sadegh Sadeghi Bonjar[1],SaeedSalari[2]*, Mohammad Jahantigh[3], Ahmad Rashki[2]
1. Student of Veterinary Medicine,Faculty of Veterinary Medicine, University of Zabol, Zabol, Iran
2. Department of Pathobiology, Faculty of Veterinary Medicine, University of Zabol, Zabol, Iran
3. Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Zabol, Zabol, Iran
***Corresponding E-mail: saeedsalari@ut.ac.ir**

Objectives: In recent years, knowledge about virulence factors and the pathogenesis of Avian Pathogenic *Escherichiacoli*(APEC), the causative agent forcolibacillosis, as a member ofExtra-intestinal Pathogenic *Escherichiacoli* (EXPEC), has been increased via molecular methods. Serum resistance and iron uptake system are two important virulence factors of APEC which mediated by some genes including Increased Serum Survival (*iss*) andIron-Responsive element *(irp2*) genes, respectively.There is no special trait for determination and differentiation of APEC from Avian Fecal *E. coli* (AFEC) regarding to region of Iran. The aim of the present study was to investigate the prevalence of *iss* and *irp2* in AFEC and *E. coli* isolated from chickens with colibacillosis.
Materials & Methods: As a case control study, a total number of 43 AFEC collected andalso, 40 and 56 *E. coli*were isolated from the liver and kidney of chickens with colibacillosis, respectively. The presence and frequency of *iss* and *irp2* were studied using PCR.
Results & Conclusion:*iss* and *irp2* genes frequency in AFEC were %37.2 and %27.9, respectively. In *E. coli*isolates, collected from liver and kidneys of poultry with colibacillosis, the frequency for *iss* gene, were %82.5 and %91.3, respectively, while for *irp2* gene were %60 and %58.7, respectively. The frequency of *E. coli* isolated from chickens with colibacillosis, carrying both genes, were %50 and %54.34 collected from liver and kidney, respectively (with average of %52.17), while, %19.62 of AFEC isolates have both genes.%86.9 of isolates from chickens with colibacillosis were positive for *iss* gene,while the frequency of *iss* in feces samples obtained from healthy chickens were %37.2 (P<0.05). On average, %43.3 of *E. coli* strains isolated from colibacillosis have *irp2* gene while %27.9 of isolates from the feces of healthy birds were positive for this gene(P<0.05).The frequency of the simultaneous presence of both genes in isolated *E. coli* were significantly different (P<0.05). %52.17 of isolates from colibacillosis and % 19.62 of isolates from healthy chicken feces were positive for both genes.This marked difference in the distribution of *iss* and *irp2* genes in *E. coli* isolated from clinical cases and strains isolated from healthy poultry feces makes these two genes as markers for differentiate AFEC and APEC strains especially in Sistan region to improve colibacillosis control measurements.
Keywords: Colibacillosis, *Escherichiacoli*, *irp2*, *iss,* PCR

The frequency of two virulence genes,*iss* and *bor*,in *Escherichia coli* isolatedfrom ostrich feces

Hosseini A[1], Salari S[2*], Rashki A[3], Jahantigh M[4]

[1]Student of Veterinary Medicine, University of Zabol, Zabol, Iran, [2,3,4]Faculty of Veterinary Medicine, University of Zabol, Zabol, Iran

Corresponding author's email: saeedsalari@ut.ac.ir

Background: In recent years, ostrich have proposed as an economical birdtobreedand maintain for entertainment, meat and leather production.*Escherichia coli* as a normal intestinal flora, have been investigated as a reservoir of genes and it appears that sometimescould act as a source for transfer virulence genes from one species to anotherspecies.*iss* and *bor*are two virulence genes of *Escherichia coli* involved in serum resistance. Concurrent study of these twogenes is essential because of their structural and functional similarities. Up to now, no research have been done in *Escherichia coli*isolated from ostrich about *iss* and *bor*. The aim of the present study was to investigate the existence and frequency of*iss* and*bor*, in *Escherichia coli* isolated from healthy ostriches.
Methods: As a descriptive cross-sectional study, a total number of 59 fecessamples were collected from healthy ostriches.*Escherichia coli*was detected by conventionalmethods. Thenexistence and the frequency of *iss* and*bor*were investigated by PCR.
Results:45 samples (%76) contain *Escherichia coli*. PCR amplification on*Escherichia coli*indicated that 22 (%48) and 14 isolates (%31) contained *iss* and *bor* gene, respectively. Also 8 isolates (%17) have both genes.
Conclusions: This survey is the first report of frequencyof *bor* and *iss,*as two virulence genes, in *Escherichia coli* isolated from healthy ostrich in Iran. *Escherichia coli* is one of the most important and common bacterial pathogens in poultry which could be the causative agent of poultry colibacillosis. Certain strains of *Escherichia coli* can cause disease by virulence factors.Our results showed the high frequency of these two virulence genes in the normal intestinal flora of ostrich.Therefore, it can be concluded that ostrich may have a rolein transmission of these two virulence genes to other poultry.
Key words:*bor, iss*, Ostrich, Polymerase Chain Reaction

Full-length fusion protein genetic evolutionof Newcastle disease virus circulating predominantly in chickens in Iran

Shahsavandi S*, Ebrahimi MM
Poultry Viral Vaccines Research and Production Department, Razi Vaccine and Serum Research Institute, Karaj, Iran
Corresponding author's e mail: s.shahsavandi@rvsri.ac.ir

Objectives: Newcastle disease (ND) is one of the most devastating diseases in poultryindustry worldwide. The causative agent, Newcastle disease virus (NDV) genome codes the six major proteins in the order of 3'-NP-P-M-F-HN-L-5'. The NDV fusion protein (F) mediates fusion of virus envelope with host-cell plasma membrane and its cleavage site sequence is a major determinant of NDV virulence. Based on genetic and antigenic analyses the NDV strains have been classified into class I and class II with eleven genotypes, I to XI. In recent years recombination occurring throughout the NDVs genome has been reported. This study was focused to investigate the recombination events in F gene of the Iranian ND viruses deposited in GenBank.
Materials and Methods: The complete F Iranian NDVs and the complete genome sequences and to localize Iranian isolates among other reference strains. Phylogenetic tree was generated using the neighbor-joining method with the maximum composition likelihood in MEGA4. All positions containing gaps and missing data were eliminated from the data set. Recombination events over the gene different statistical methods included in the RDP3 software package were analyzed. Putative recombinant sequence and its putative parents were identified with the SimPlot.
Results and conclusion: Alignment and phylogenetic analysis based on the full F gene classification system revealed that Iranian NDVs clustered together and harbored low genetic diversity. The isolates share higher nucleotide identity with viruses representing genotype VII and showed lower nucleotide sequence homologies of about 82% with the vaccine strains LaSota, B1, and Clone. While no statistically significant recombination events were identified for the gene, constant molecular and pathological characterization of circulating NDVs are needed to detect an evolutionary feature of the viruses.
Keywords: Newcastle disease virus, fusion protein, evolution, recombination

The pathogenesis of Newcastle disease viruses isolated from recent outbreaks in broiler and layer farms

Ebrahimi MM*, Shahsavandi S,Shoushtari A,Ghodsian N, Mahmoudzadeh M

Razi Vaccine and Serum Research Institute, Karaj, P.O.Box:31975-148, Iran

Corresponding author's e mail: mm.ebrahimi@rvsri.ac.ir

Objectives: Newcastle disease virus (NDV) is a contagious and fatal viral disease affecting most species of birds. Strains of NDV belong to the family *Paramyxoviridae*are displayed a spectrum of virulence in affected birds from a fatal to an unapparent infection.Clinical signs are extremely variable depending on the strain of virus, species and age of bird, concurrent disease, and pre-existing immunity. There are many strains of NDV and they vary in pathogenicity which is reflected in the severity of disease in chickens. Because NDV strains are of a single serotype, virulence differentiation among those strains must be determined by standard pathotyping assays. In this study, the pathogenesis of NDV isolates obtained from recent outbreaks in broilers and layers was characterized.
Materials and Methods: Brain of the affected chickens was collected using aseptic technique.The specimen was homogenized in PBS, pH 7.2. 0.1 ml of 10% (v/v) suspension was inoculated into the allantoic cavity of embryonated specific-pathogen-free (SPF) eggs. The etiologic agents were diagnosed and identified by haemagglutination inhibition (HI) test, and nucleotide sequence analysisusing primers targeting the fusion (F) protein gene in RT-PCR assay. The pathogenic potential for the isolated viruses was evaluated using standard assay methods to determine the mean death time (MDT) in 10-day-old chick embryos, the intracerebral pathogenicity index (ICPI) of day-old chickens and the intravenous pathogenicity index (IVPI) of 6-week-old chickens.
Results and conclusion: The presence of NDV in the clinical samples was confirmed by serological and molecular tests. The ICPI and IVPI were calculated $\geq$1.7 and $\geq$2.5, respectively and the MDT mean death time was estimated $\leq$60 hours. The amino acid sequences of the precursor F0 cleavage site position 112-117 at the C terminus of the F2 proteinand pathogenicityindices data, revealed the velogenic feature of the new isolated NDVs.
Keywords: Newcastle disease virus, pathogenicity, velogenic strain

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Using a native *Avibacterium Paragallinarum* isolate for potencyassessment of an Infectious Coryza Vaccine

Abbas nouri*, Banani M., Mirzaei S. G

Avian bacterial diseases departmentof Razi vaccine and Serum Research Institute

Corresponding author's email: a.nouri@rvsri.ac.ir

Objectives: The purpose of this study was to determine the efficacy of used vaccines against a native isolate of infectious Coryza (IC) agent, *Avibacteriumparagallinarum*.
Materials & Methods: By obtainingone field isolate of Av.P(RT-83) from KorasanRazavi province of Iran,recognized asserogoup A, toachieve this goal 36 SPF bird of 14 weeks old were randomlydivided into three separate groups and feeds equally. First group of birdswas vaccinatedbytwo doses within 4 week using by a commercial killed oil vaccine. After two weeks of last vaccination all bird of this group and the second group were challenged with 1×10^{8} CFU/ml bacterial suspension prepared from fresh 24 hours culture of Av.pgrown on horse RBCchocolateagar (at 37˚C, 5% CO_2) by intra-orbital sinus inoculation, instead the third group as control only received phosphate buffer (PH=7) using same route and volume.
Results & Conclusion: All birdswere daily examinedfor nasal discharge and facial edema throughout the experiments. At days 2, 4, 6and 8 after challenge three birds from eachgroupwere euthanized by CO_2 gasfor re-isolation of bacterium frominfra-orbital sinuses.At first day of post infection day (PID), characteristic clinical signs of ICwere seen in all bird of second group.Av.P were re-isolated fromboth first and second groups of birds all the time except for vaccinated (first) group that after 6 PID the bacteria apparently cleaned from the site. In brief, we concluded that used commercial vaccine can prevent clinical IC and longer time of bacterial clearance from bird in comparison toother examined vaccine challenged experiments, suggests this Isolate to be hoterologusfrom Coryza vaccine included strains.This research was supported by Razi vaccine and Serum Research Institute project number 2 - 18 - 18 -92105.
Keywords:*Avibacteriumparagallinarum*, infectious coryza, Iran, vaccine, potency

Simultaneous differentiation of *Mycoplasma gallisepticum* and *Mycoplasma synoviae* by a duplex-PCR on clinical samples

Taheri H[1*], Peighambari SM[1], Pourbakhsh SA[2], Barin A[1], Ashtari A[2], Abtin A[2]
[1]*Department of Avian Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran;*
[2]*Mycoplasma Reference Laboratory, Razi Serum and Vaccine Research Institute, Karadj, Iran*
Corresponding author's email: hanieh_taheri@yahoo.com

Objectives: *Mycoplasma gallisepticum* (MG) and *Mycoplasma synoviae* (MS) are among the most important pathogenic *Mycoplasma agents* causing avian mycoplasmosis in chickens leading to economic losses to the poultry industry worldwide. Attempts to differentiate between these two major avian mycoplasmas by using molecular methods such as PCR tests have been mainly based on the 16s rRNA gene. Duplex PCR is a variant of PCR enabling simultaneous amplification of two targets of interest in one reaction by using more than one pair of primers.
Materials & Methods: We attempted to target species-specific structural genes for the simultaneous detection and differentiation of MG and MS. Primers used in duplex PCR were the same as used for differential diagnosis between MG and MS. Sixty samples including air sac choanal cleft and tracheal swabs were obtained from flocks and were used in PCR using genus-specific primers to confirm the mycoplasma genus.
Results & Conclusions: Forty out of 60 samples were positive for mycoplasma genus. The positive samples, then, were tested with species-specific single PCR using MS1 (for MS) and MG10 (for MG) primers. In gel electrophoresis, out of 40 samples, six samples showed 791 bp band and were positive for MG; and 26 samples showed 272 bp band and were positive for MS. Six samples demonstrated both 791 bp and 272 bp bands and were positive for both MG and MS. The results of duplex PCR for simultaneous detection of both MG and MS using MG10, MS1, and M3R primers showed that all MG positive samples in single PCR were also positive for MG in duplex PCR and out of 26 MS positive samples in single PCR, only 18 were found to be positive for MS in duplex PCR. Among those six MG and MS positive samples in single PCR, only 5 were positive for both MG and MS in duplex PCR. It was concluded that the duplex PCR was a more rapid and inexpensive method than the single PCR for the detection of MG and MS. A better optimized duplex PCR can be a valuable alternative method for simultaneous detection of MG and MS infection.
Keywords: *Mycoplasma gallisepticum*, *Mycoplasma synoviae*, Duplex PCR

Molecular epidemiology survey of *Mycoplasma synoviae* in broiler breeders vaccinated with a live temperature sensitive vaccine, broilers and commercial layers in Iran 2013-2014

Ghafouri Seyed Ali [1*],Hosseini Hossein[2],Tehrani Farshad[1],Fallah Mohammad Hossein[3]
1-Department of Poultry health and diseases, Iran Veterinary Organization (IVO) , Tehran, Iran
2- Department of Clinical Sciences, Faculty of Veterinary Medicine, Karaj Branch, Islamic Azad University, Alborz, Iran
3-Space Transportation Institute, Iranian Space Research Center, Tehran, Iran
***Corresponding Email:saghafouri@yahoo.com tel: 00989125140298**

Prevention of *Mycoplasmasynoviae*in poultry flocks especially in broiler breeders is an important concern around the world. To control the infection in these flocks in Iran, in addition to bio-security issues, the live vaccine has been used since 2005.In a molecular epidemiology surveillance (2013 to 2014)some broiler flocks and their appropriate vaccinated breeders and the commercial layers and broilers around them have been studied. 1590 tracheal swabs were taken from 53 broiler flocks in 14 provinces at the 1th week old and 424 swabs at the 6th week old. Additionally, 1325 swabs were taken from 53 breeders producing these broilers at the same time of first sampling in broilers. All samples were tested by PCR for detecting *Mycoplasma synoviae* using the amplification of hyper-variable fragment of *vlhA* gene. To differentiate between vaccine and field strain, the positive samples were tested by High Resolution Melting curve(HRM) analysis and also sequenced which the results were similar. Four broiler flocks (8%) in the first week and six flocks(12%) in the 6th week were positive in PCR and showed infection with field strains. four of 53 positive breeder flocks were infected with field strain and only the strain detected in one breeder flock was similar to strain from their progeny. In the second step,800 tracheal swabs were taken in 21 broilers and 11 commercial layers around the all infected broilers and breeders in the first step and tested with the same methods which 5 flocks (23%) and 8 flocks (73%) were infected consequently. It is concluded that breeders vaccination with *Mycoplasma synoviae* vaccine can make an acceptable protection and decrease the vertical transmission. In addition, the high prevalence of *Mycoplasma synoviae* infection in commercial layers can be an important threat for breeders and broilers which is required implementing a perfect control plan in commercial layers.

RAPD-PCR and drug resistance pattern of *Staphylococcus aureus* isolates recovered from pet birds

Bagheri SS*, Peighambari SM, Soltani M,Malekan M
Department of Avian Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran
Correspondingauthor's email: seyedsinabagheri@gmail.com

Objectives: *Staphylococcus aureus*, a highly versatile pathogen in a large number of domestic animals, is also important in avian species. This study was conducted to determineantibacterial susceptibility and RAPD-PCR pattern of *Staphylococcus aureus*isolated from birds referred to pet birds clinic at the University of Tehran.
Materials & Methods: During the study period, 53 isolates of *Staphylococcus aureus* were recovered from pet birds of various species using standard bacteriologic procedures and then the susceptibility of isolates was determined to a panel of 30 antimicrobial agents with agar disk-diffusion method. RAPD-PCR was also performed with two different 10-bp oligonucleotide primers in a duplex-PCR.
Results & Conclusion: The findings of this study demonstrated that *S. aureus* resistance to oxacillin, clindamycin and meticillinwere 58, 53 and 53%, respectively. The multi-drug resistance (MDR) pattern was found in all isolates.Forty three different patterns of antimicrobial resistance were detected in all isolates. RAPD divided*S. aureus* isolates into five groups including A (20%), B (62%), C (3%), D (9%) and E (3%). The findings of the present study may be useful in future molecular epidemiology studies on *Staphylococcus aureus.*
Keywords: *Staphylococcus aureus*, pet birds, Antimicrobial susceptibility, RAPD-PCR

The effect of CpG ODN against intestinal colonization of *Salmonella enteritidis* in broiler chickens

Kalidari Gh[1], Rad M[2], Miri T[3], Abootorabi Rize E[4*], Ali Davarzani[4]
1. Department of Clinical Scienes, School of Vetetinary Medicine Ferdowsi University of Mashhad,Mashhad, Iran
2. Department of pathobiology, School of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran
3. Graduted from the Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran
4. Student of Veterinary Medicine, Islamic Azad University of Garmsar, Garmsar, Iran

Objective: The present study evaluated synthetic CpG-ODNs for their in vivo protection against intestinal colonization by Salmonella enteritidis (SE) in broiler chickens of Ross strain.
Materials & Methods: Two day-old chickens were subcutaneously injected with synthetic CpG-ODN at 50 ug/bird and two control groups received PBS via subcutaneous injection. the CpG-ODN Group and also one of the control group (PBS) were orally challenged with live SE in 3h, and 4days, 7days and 14days after the CpG-ODN treatments. birds were euthanized and cecum were aseptically removed from each bird. cecum contents of three chicks were collected in a sterile tube and were cultured for bacterial counting.
Result & Conclusion: intestinal colonization in birds treated with CpG-ODN in 4, 7 and 14days after the CpG-ODN treatmentwas not significantly different from that in the control group but this difference in 3h after the CpG-ODN treatment was significant.5 days old chickens were given CpG-ODNs or PBS via subcutaneous injection. Twenty-four hours after the CpG-ODN treatment, chickens were challenged with live Salmonella enteritis(SE). intestinal colonization in birds treated with CpG-ODN was not significantly different from that in the control group. Also, in this study for determining the increased effect of CPG, a booster of CPG was given to 20 days old chickens subcutaneously. Twenty-four hours later chickens were challenged with live Salmonella enteritis(SE). . intestinal colonization in Chickens receiving a booster of CpG-ODN was not significantly different from that in the CpG ODN group.
In this study, rectal swabs were taken at each stage.
In three hours, 4 and 7 days after CPG inoculation, rectal swabs from CpG groupwere negative, while, 75%(three hours),12.5%(4days) and 12.5%(7days) of rectal swab from controls groups were positive.
14days after CPG inoculation, 12.5% of rectal swabs inCpG group and 25% of control were positive for Salmonella enteritidis.
Regarding the resultes , CPG ODN could be effective in preventing intestinal colonization by salmonella entritidis in broiler(Ross strain) and the effect was continued for 7 days.
Key words: CpG-ODN,Salmonella enteritidis, Broiler chicken, intestinal colonization

Clinical evaluation of three respiratory medicinal compounds in broiler chickens experimentally infected with respiratory complex agents

Asasi K.[1*], Hosseini A.[2], Abdi-Hachesoo B.[1]
[1]Department of Clinical Science, School of Veterinary Medicine, Shiraz University, Shiraz, Iran
2 Graduated student, School of Veterinary Medicine, Shiraz University, Shiraz, Iran
***Corresponding author's E. mail: Asasi@shirazu.ac.ir**

Objectives: the purpose of this study was to evaluate the clinical effectiveness of three medicinal compounds (Bronchimax, Bromhexine, and Theophylline G) in broiler chickens experienced experimental respiratory complex.

Materials & Methods: Four groups (n= 50) of day- old chicks (Cobb 500) were reared in isolated rooms with strict control environment. All chicks were infected with infectious bronchitis virus (IRFIBV32 isolates, 1×10^4 EID_{50}) via eye drop, avian influenza virus (H9N2 subtype, 1×10^6 EID_{50}) by intranasal rout and *E. coli* (O2 serotype, 1×10^9 c*f*u) via Spray simultaneously on day 25 of age. Two days post inoculation groups 1, 2 and 3 treated with Bronchimax, Bromhexine, and Theophylline G for four days. Group 4 were kept as untreated control group. Clinical signs, daily feed and water consumption, weight gain, mortality, ciliary activity and necropsy findings were recorded during the course of infection (10 days).

Results & Conclusion: Clinical signs including lacrimation, nasal discharge, and sneezing appeared 24 hours PI in 4 groups with no significant differences among groups till 6 DPI ($P>0.05$). The lesions such as tracheal hyperemia, air saculitis, and cast formation in air ways indicating respiratory complex observed in first 5 birds euthanized from each groups with no significant difference ($P>0.05$). Serological data also supported the infectious process. Although there was not any syringeal exudate cast in euthanized birds during necropsy, surprisingly all dead chicks showed marked tubular casts in tracheal bifurcation mostly extended to the lower bronchi which significantly less severe in control group ($P\leq0.05$). Total mortality was 26% in Bronchimax, 22% in Bromhexine, 32% in theophiline-G, and 8% in untreated control group which differ significantly between treated and control groups ($P\leq0.05$). Feed and water consumption and weight gain were not significantly different among four groups ($P>0.05$). There were no significant differences in histopathological lesions on days 2, 4 and 8 PI between control and treatment groups ($P>0.05$). None of medicines used in this study improved ciliary activity which impaired by Infectious Bronchitis virus.

Key words: Respiratory complex agents, Respiratory medicinal compounds, Clinical signs, Histopathology, Ciliostasis

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Evaluation the diagnostic value of T3 measurement in Ascitic broilers

Shekofteh A[1],Haghbin nazarpak H[2],Tehrani sharif M[3]
[1]1Department of Clinical Sciences
[2]Department of Poultry disease, Schoolof Veterinary Medicine,Islamic Azad University of Garmsar
[3]Department ofClinicalPathology, Schoolof Veterinary Medicine,Islamic Azad University of Garmsar
Corresponding author's email : Dr.alishekofteh@gmail.com

Objectives: In most of the countries, ascites became an issue in poultry industry. This syndrome is the serious reason of economy loss in most countries around the world. This is not only due to high mortality, but retarded growth and low carcass quality. The aim of this study was to evaluate the Triiodothyronineconcentration in broiler chicks suffered from ascites, to compare the control group and to check the diagnostic value of Triiodothyronine in chicks with ascites. Also the breed sensitivity of Hubbard F15 and Ross 308 were compared in ascites syndrome.

Materials & Methods: 440 broiler chicks of Ross 308 and Hubbard F15 of two breeder flocks were kept in 2 houses as treatment and control groups. Each house was divided into 6 35-chick groups, 3 groups of Ross 308 and 3 groups of Hubbard F15. The ascites inducing method of treatment group included 4 parameters including coldness, salt in water, O_2 decrement and pellet feeding.

Results & Conclusion: The results regarding RV-TV ratio of treatment and control groups were 60% and 27%, respectively. Using biochemistry tests, statistical analysis indicated that the Triiodothyronine concentration in treatment group was not significantly increased compared with the control group and Triiodothyronine concentrations were not significantly different among Hubbard F15 and Ross 308.

Key words: ascites, Hubbard F15, Ross 308, RV/TV, Triiodothyronine

Evaluation of the anticoccidial effects of herbal extractsin experimentally induced*Eimeriatenella*infection in broiler chickens

G.Farjanikish[1], E. Babayee-Nezhad*[2]
[1]*Department of pathobiology, School of Veterinary Medicine, Lorestan University, Khorramabad, Iran*
[2]*Student of Veterinary Medicine, School of Veterinary Medicine, Lorestan University, Khorramabad, Iran*
***Corresponding author's email: Es.babaeenezhad1391@gmail.com**

Objectives: Coccidiosis is one of the most important diseases of poultry worldwide that characterizedby enteritis. Safe alternative anticoccidial drug to chemical feed additives are herbal extracts,because they don't results in tissue residue and drug resistance. Therefore we havedecided to study the effects of herbal extracts to control avian coccidiosis.
Materials & Methods: For thispurpose 180 one-day-old broiler chickens were randomly divided into 9 equal groups.Each group had 2 replicates (10birds/group). The experimental groups weredesignated as follow: 1) Biarumbovei 2) Nectaroscordumtripedale 3) Doremaaucheri4) Cichoriumintybus 5) Prangosferulaceae 6) Diclazuril 7) Artemisia absinthium 8)Infected control 9) uninfected control. Administration of herbal extracts andsupplementation of diclazurilbegan 2 days before challenge and lasted for theduration of the experiment. The chicks of all the groups except uninfected controlgroup were inoculated orally with sporulatedoocysts (3×103 oocysts of E. tenella) at22 day of age. The criteria employed were: body weight, feed conversion ratio (FCR),blood in feces, survival rate, lesion scoring, number of oocyst output per gram feces(OPG) and development of histopathological lesions.
Results &Conclusions:N. tripedale and diclazurilshowed better results in terms of growth performance, lesion score, extent of bloodydiarrhea and oocyst count as compared with other herbal extracts. Based on histopathological examination intracellular stages of coccidian in mucosa and submucosa were observed in all treated groups. In addition, in group 1purulent enteritis, coagulative necrosis and degeneration, crypt hyperplasia withoocysts of coccidia was also evident in the epithelium. In group 2 and 3 parasitic hemorrhagic fibrinopurulent enteritis were observed. In group 5fibrinopurulent enteritis with villus atrophy were seen.In the group 6, lesions included intracellular stages of coccidia (oocyte and schizont) in mucosa and submucosa with infiltration of inflammatory cells.The severity oflesions was respectively related to the groups D. aucheri, A. absinthium, B. bovei, P.ferulaceae, C. intybus, diclazuril and N. tripedale in decreasing order.
In conclusion, the results of the present study showed that herbal extracts were effective against the *E. tenella*. In particular, *N. tripedale*found to be more potent on the basis of oocysts output and live body weight. *N. tripedale*has promising efficacy as an effective and safe alternative drug against coccidiosis.
Keywords: Coccidiosis, herbal extract, broiler chicken, histopathological examination

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Molecular identification of genotype B, a new genotype of*Chlamydophilapsittaci* in an African grey parrot*(Psittacuserithacus)*

Afshari A[1], Razmyar J[2], Rajabion M[2], Zaeemi M[2], Kargar A[2]
[1]*Department of Nutrition, Faculty of Medicine, Mashhad University of Medical Science, Mashhad, Iran*
[2] *Department of Clinical Sciences, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran.*
Corresponding author's email: Afsharia3@mums.ac.ir

Objectives: Avian chlamydophilosis is caused by *Chlamydiophilapsittaci* with the highest infection rates in parrots (Psittacidae) and pigeons (Columbiformes). This study was conducted to molecularly characterize chlamydophilosisin an African grey parrot and determine its genotype.
Materials & Methods: A 2 year-old African grey parrot***(Psittacuserithacus)***was examined because of anorexia, depression, diarrhea, and mild dyspnea.After laboratory tests and radiology of the bird,swabs from choanal cleft and cloaca were collected. DNA extraction and *OmpA* gene-based diagnostic PCR,using CTU/CTL primers were performed. Finally sequence of the PCR product was compared with sequences obtained from GenBank.
Results & Conclusion: The established phylogenetic tree based on the genome fragment examined in this report and 12 reference genomes, revealed 100% identity of amplicon sequence with genotype B obtained from previous studies. To the best of our knowledge, this is the first report of genotype B identification from Iran. This study suggests the need for greater awareness of chlamydophilosis in pet bird populations by avian clinicians in Iran.
Keywords: Avian *Chlamydophilosis*, Psittacidae, Columbiformes, African grey parrot, *ompA* gene.

Phenotypic and genotypic investigation of antibiotic resistant *E. coli* isolates during a rearing period of broiler farms

Abdi-Hachesoo B*, Asasi K, Sharifiyazdi H
Department of Clinical Sciences, School of Veterinary Medicine, Shiraz University, Shiraz, Iran
***Corresponding author's email: abdi@shirazu.ac.ir**

Objectives: In this study, antibiotic resistances were investigated in cloacal *E. coli* isolates during a rearing period of broiler chickens. Fluoroquinolone and tetracycline resistance gene determinants were investigated in these isolates. In addition, multi-drug resistance and presence of class 1 and class 2 integron genes were also inspected in these multi-drug resistant *E. coli* during a complete rearing period in 20 broiler farms.
Material & methods: Three hundred fecal *E. coli* isolates were collected from 20 broiler farms in three stages (day old chicks, 25-35 days and a day before slaughter). Five *E. coli* isolates were taken from each farm in each sampling period (100 isolates in each stage). Resistance patterns of 18 common antimicrobial agents were evaluated with disk diffusion method. Mutation detection in *gyrA* and *parC* genes in enrofloxacin resistant *E. coli* isolates was evaluated by Sequencing and PCR-RFLP methods. Distribution of *qnr* resistance genes in enrofloxacin resistant *E. coli* isolates, *tet* resistance genes in tetracycline resistant *E. coli* isolates and class 1 and class 2 integron genes in multi–drug resistant *E. coli* isolates were investigated with PCR.
Results & conclusion: Antibiogram results showed an increasing resistance patterns against most of the antimicrobials during the rearing period. In general, greater than 80% of these isolates showed multiple drug resistance (MDR) and the greatest rate of MDR was seen in ready for slaughter chickens. Mutation detection in enrofloxacin resistant *E. coli* isolates showed amino acid substitutions in Ser-83 and Asp-87 in GyrA protein and Ser-80 in ParC protein. Mutations at both Ser-83 and Asp-87 of *gyr*A and Ser-80 of parC were higher in 2nd and 3rd of rearing period. No *qnr*A, *qnr*B and *qnr*S determinants were detected among these *E. coli* isolates. *Tet*(A) resistance gene was present in 32.5% of tetracycline resistant *E. coli* isolated from one-day-old chicks, 65% of tetracycline resistant *E. coli* isolated from thirty-day-old chickens and 72.5% of tetracycline resistant *E. coli* isolated from the chickens on the day before slaughter. None of the tested isolates contained *tet*(M), *tet*(O) or *tet*(S). The overall frequency of integrase 1 was higher than the frequency of integrase 2 (67.7% and 8.6%, respectively). The results of sequencing gene cassettes indicated the presence of dfrA, aadA and ereA that caused resistance to trimethoprim, streptomysin and erythromycin, respectively. The phenotypic and genotypic results of this study showed high antibiotic resistance in day old chicks with upward trends until the age of slaughtering.
Keywords: antibiotic resistance, *E. coli*, fluoroquinolone resistance genes, tetracycline resistance genes, integrons, Broiler chickens, rearing period

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Immunity induced by arHVT-ND vaccine Range of protection and effect on challenge virus shedding

Vilmos Palya, Timea Tatar-Kis, TamasMato
Scientific Support and Investigation Unit, Ceva-Phylaxia Vet. Biol. Co., Budapest, Hungary
Corresponding author's email: vilmos.palya@ceva.com

Objectives: Newcastle disease (ND) remains a constant threat to the poultry industry worldwide, in spite of the availability and global employment of ND vaccinations. Reports of vaccine failures and on the ability of classical vaccines to significantly reduce viral replication and shedding have resulted in renewed interest in developing new types of vaccines to control better virulent NDV (vNDV) circulating in the field. Carrying out several studies in broiler and layer chickens we assessed how the immunity induced by a recombinant HVT-based ND vaccine(rHVT-ND)affected clinical protection and viral shedding following challenge with different genotypes (heterologous) of vNDV.
Materials & Methods: In different experimental settings, commercial broiler and layer chicks were vaccinated with commercial dose of the rHVT ND vaccine (Vectormune ND, CevaSanteAnimale, France) by the subcutaneous route at hatch. At different time-points post-vaccination, groups of vaccinated birds along with non-vaccinated controls were challenged by the oro-nasal route with different genotypes of vNDV (genotype IV, V, VII and VIII). The birds were monitored daily for clinical signs and death for 14 days post-challenge. At 3 and 7 days post-challenge, birds were sampled (oro-nasal and cloacal swabs) to monitor the level of challenge virus excretion.
Results & Conclusion: Vaccination with the rHVT-ND vaccine induced HI antibodies from 3-4 weeks post-vaccination which increased continuously until reaching a plateau at around 6-8 weeks of age. Vaccinated birds were clinically protected, close to 100 %, from 3 to 4 weeks of age against challenge with the different vNDV strains representing all genotypes causing recent epidemics in the world.
rHVT-ND was able to suppress cloacal shedding of challenge virus completely. The degree of suppression on challenge virus replication in the oro-nasal mucosa varied depending on the challenge strain used. There was a tendency of higher shedding by vaccinated birds when the challenge virus replicatedat a higher titre in the non-vaccinated chickens, indicating the higher virulence of the relevant challenge strain.
rHVT-ND vaccine could induce solid immunity in reasonably short time after single administration in face of MDA to NDV, and reduce challenge virus sheddingsignificantly via both the oro-nasal and cloacal routes.

Keywords: Newcastle disease, Vaccination, Recombinant HVT-ND vaccine, Protection, Challenge viru shedding

Efficacy and transmissibility of Newcastle disease vaccine strain of I-2 against a field isolate of virulent ND virus (JF820294.1) in village chicken

H. Habibi[1]*, H. Nili[2], K. Asasi[2], S. Firouzi[2], N. Mosleh[2], Mitra Mohammadi[2]
1. Department of Animal Science, Faculty of Agriculture, Persian Gulf University, Bushehr, Iran
2. Avian Diseases Research Center, School of Veterinary Medicine, Shiraz University
***Corespond outhers: H.habibi@pgu.ac.ir**

Objectives: This study was conducted to assess efficacy of heat stable I2 vaccine against Newcastle diseases in vaccinated and vaccinated-in contact chickens following challenge againstvirulent ND virus (JF820294.1) in village chicken. And to assess whether birds that have been exposed to vaccine virus-shedding birds were protected against mortality and clinical signs after infection with a virulent strain of the NDV.
Material and method: 150 one-day old local chickens were divided into seven groups (4 experimental groups of 30 birds and 3 control groups (unvaccinated unchallenged, challenged, just vaccinated). In experimental groups birds were vaccinated either via drinking water or as food carrier with thermostable I-2 vaccine and then challenged with virulent isolate of NDV (JF820294.1), 8 birds were added as in-contact birds to vaccinated groups. Following challenge 7 extra birds were added to all groups as in-contact with vaccinated and challenged birds. Survival rate, clinical signs, necropsy finding and mean antibody titer were evaluated in different experimental and control groups.
Result and discussion: Birdsvaccinated via drinking water showed almost 100% survival rate. However birds vaccinated with food carrier vaccine, showed less than 50% survival rate. The in-contact birds in vaccinated and challenged groups via drinking water become seropositive, but did not show any advert clinical signs and necropsy lesions.The use of ND Thermostable I-2 vaccine in village chicken prevented of mortality and reduced APP concentration.
Key word: thrmostable I-2 vaccine**,** acute phase protein, village chicken, Newcastle disease

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Master Seed Preparation for Heat Resistant Vaccine Production Against Newcastle Disease

Abdoshah, M .[1] , Masoudi S.h.[1], Hassanzadeh, M.[2] , Ashtari, A.[1] , Tehrani, F.[3] , Famil Ghadakchi, H.[1]
1. Razi Vaccine and Serum Research Institute
2. Faculty of Veterinary Medicine, University of Tehran
3. Iranian Veterinary Organization
Corresponding author's email: m.abdoshah@rvsri.ac.ir

Introduction: The objective of vaccination is reducing the number of susceptible birds against the Newcastle disease (ND)Many Newcastle disease vaccines deteriorate after storage for one or two hours at room temperature. This makes them unsuitable for use, especially in villages where the vaccine may need to be transported for hours or in some cases days at ambient temperature. A heat resistant Newcastle disease strain is more robust and is known as a thermostable vaccine. Such a vaccine strain, is suitable not only for use in rural Chickens in tropical areas, but also to provide sufficient time for the vaccination of poultry by drinking water method.
Materials and Method: The virus identified as Avian Paramyxovirus serotype 1 (APMV-1) by molecular tests. It is proved avirulent through in vitro and in vivo conventional experiments. The stability of virus tested to ensure that is resistant to heat. Then quality control tests for master seed was achieved included safety, potency, stability, sterility (freedom from bacteria, fungi, mycoplasmas) and purity (absence of extraneous agents) tests based on pharmacopoeia.
Results: The results of pathogenicity tests and determination of pathogenicity indices (MDT, ICPI, IVPI) showed that studied virus is in the range of avirulent NDVs. Molecular tests and sequencing of F gen, confirmed the conventional tests and indicated similarity between studied virus and heat-stable vaccinal strains. Eventually the master seed passed quality control tests successfully.
Discussion: The avirulent, thermostable ND vaccine strains were developed by researchers at the University of Queensland in Australia (Spradbrow 1999) to provide rural poultry farmers with an effective, affordable means of controlling ND in their flocks. These vaccines have been used successfully in village chicken populations in many countries in Asia and Africa. The results obtained in this study show that our vaccine has potent to use successfully via different routes in chickens. It reduces the costs for backyard poultry in our villages especially that has also capacity for feed administration.
Key words: Newcastle Disease, Thermostable, Vaccine

Identification of NDV isolated from the recent outbreak in Ardestan's broiler farms

Z.Mojahei[1], M.Abdoshah[1], A.Anissian[2], A.Adiban[3], A.Roghani[4], A.Ashtari[1]
Razi Vaccine and Serum Research Institute[1], Islamic Azad University Abhar Branch[2], Veterinary Directorate of Isfahan Province[3], Clinician[4]

In November 2015, a very contagious disease with high mortality spread in broiler flocks around Ardestan. The Iranian veterinary organization was confirmed that it is not an outbreak of HPAI by molecular tests. After that, some death birds belong to several farms necropsied and taken samples included brain, spleen, and cecal tonsils were studied pathologically and virologically. The suspected samples were inoculated in 9-11 days SPF embryonated eggs and after 48 hours Newcastle disease virus was isolated from allantoic fluid. Pathogenicity indices of these viruses, such as Mean Death Time (MDT) and Intracerebral Pathogenicity Index (ICPI) calculated.
F gene sequence of these isolates compared with recent and earlier Iranian NDVs was done.
Additional histopathological studies were shown clear signs of Newcastle disease in the organs of the above mentioned.
Newcastle disease is still considered as a risk in poultry farms, and every time we are faced with a new aspect of the disease. Monitoring of obtained isolates, to identify and study of the virus phenotypic and genotypic changes, will be a great help to control of the disease.
Key words: Newcastle isolates, Ardestan, ICPI, MDT, F gene

Molecular study of outer membrane protein H gene (*ompH*) among avian *Pasteurella multocida* isolates from Iran

Haghnazari, Sepideh[1].,Jabbari, Ahmad Reza[2*]., Tadayon,Keyvan[3]
1-Islamic Azad University of Pharmaceutical Sciences Branch,Tehran, Iran
2- National Pasteurella Research Laboratory, Razi Vaccine & Serum Research Institute, Karaj, Iran

Pasteurella multocida is a Gram-negative, nonmotile, non-spore forming, penicillin-sensitive coccobacillus belonging to the Pasteurellacea family, and can cause a common infection in human and animals, Thuscausing several diseases hemorrhagic septicemia in cattle, atrophic rhinitis in swine and fowl cholera in poultry. The bacteria types that cause fowl cholera in bird species normally belong toserotypes (A: 1, A: 3 or A: 4).High morbidity and mortality associated with fowl cholera result in significant economic losses to the poultry industry.Several factors are known as virulence factorsof *P.multocida*such as capsule, lipopolysaccharide, adhesions, outer membrane proteins, toxins and iron regulated mediators.The outer membrane proteins OmpA, OmpH, and P6 were identified as the three major immunogenic proteins of *P. multocida* OMVs.
In this study, thirty strains of *P.multocida* isolated from poultry in Iran were studied using bacteriological and biochemical tests according to the classical methods and were identified using the molecular method PM-PCR, also were examined for the presence of virulence factor capsule and *ompH* gene. The aim of this study was to analyze the nucleotide sequence of *ompH*gene of avian serotypes 1 (vaccinal strain), 3 and 4 *P.multocida* from Iran and phylogenetic comparison with isolates from other countries.
The nucleotide sequences of *ompH*gene (1100bp) were analyzed among vaccinal strain and serotypes 3 and 4 by Clustal X, Artemis, MEGA softwares. Sequence analysis of *ompH* gene by BLAST showed 96-100% similarity among vaccinal strain (serotype 1) and published sequences in the GenBank. Isolates serotypes 3 and 4 showed 88 and 87% similarity with vaccinal strain respectively. Sequence analysis showed five conserved, four variable (SNPs) and three deletion regions in *ompH* gene of *p. multocida* isolates. The identity between serotypes 3 and 4 was 94%. A neighbor joining dendrogram representing the phylogenetic relationships of*ompH* gene showed that the vacccinal strain and field isolates located in two different lineages.
These findings indicated a significant sequence difference of *ompH* genes among serotypes 1, 3 and 4 local isolates of avian *P.multocida*, which will be helpful for further understanding the molecular relationship of *ompH* genes from vaccinal strain and field isolates from Iran and other countries. This information is likely assist to prepare efficacious vaccines against *Pasteurella multocida* infections.
Key word:*Pasteurella multocida*, Avian, Fowl cholera, *ompH* gene, PM-PCR, Sequence Analaysis

Distribution of the major Outer Membrane Proteins among *Pasteurella multocida* isolated from poultry in Iran

Zeynab Babaei rik, Ahmad Reza Jabbari, Majid Esmaelizad

The Gram-negative bacterium *Pasteurella multocida* is responsible for economically significant infections of a wide range of animal species. The organism causes a variety of diseases and syndromes which include fowl cholera,pneumonic pasteurellosis of ruminants and pigs, porcine progressive atrophic rhinitis (PAR) and bovine haemorrhagic septicemia (HS).
The pathogenicity of *Pasteurella multocida*is associated with various virulence factors include adesins (ptfA, fimA, hsf-1, hsf-2, pfhA, tadD), neuraminidases (nanB, nanH), iron acquisition related factors (exBD, tonB, fur, tbpA, hgbA, hgbB), superoxideedismutases (sodA, sodC), dermonecrotoxin (toxA), and hyaluronidase (pmHAS) and outer membrane and porin proteins.
The aim of this study was to identifythe presence of major outer membrane protein genes coding for ompA, oma87, plpBand PlpE, of avian*Pasteurella multocid*isolates.
Thirty *Pasteurella multocida*isolates obtained from avian pasteurellosis cases were used for this investigation. All the isolates were confirmed as *Pasteurella multocida*by PM-PCR using species specific primers,KMT1.Molecular capsular typing showed that all of the isolates belong to type A.
Frequency of four important Outer Membrane Protein genes includeompA, oma87, plpB, PlpE were investigated.All of the isolates (100%) harbouredompA, omp87 and plpB outer membrane protein genes. However, the frequency of plpE gene was 67% among the *P. multocida* isolates.
The results of this study showed that the avian *P.multocida* isolates had the most important outer membrane genesknown as critical factors for pathogenesis of the organism.The role of OMPs in pathogenesis and immunogenesis of *P. multocida* have been demonstrated. The findings of this study will be applied in preparation of suitable recombinant or subunit vaccines from local isolates against avian pasteurellosis.
Key words:*Pasteurella multocida*, Virulence factors, Fowel cholera, OMPs

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Investigating the polymorphism ofTonB gene structure among avian isolates of Pasteurella *multocida*

Motahare feizabadi farahani, Majid Esmaelizad, Ahmad Reza Jabbari

Iron is an essential element required by almost all living cells. Bacterial cells present several mechanisms to uptake this element. Depending on their specific habitat, bacteria can use either or both siderophores and outer - membrane proteins able to scavenge this element from the environment and the host Fe-binding molecules such as transferrin, lactoferrin, heme, hemoglobin and ferritin. Transport of the iron into the bacterial cell by any of these high affinity systems requires the product of the *tonB* gene, which links both Cytoplasmic and outer membranes thus enabling the transfer of energy necessary for this process.
Fowl cholera, caused by *Pasteurella multocida*(*PM*), is known as a bacterial disease with major economic importance due to its high mortality, use the exbBD-TonB complex to transport iron to bacteria cell.
Thirty PM isolates present in RaziNational Laboratory of *Pasteurella multocida*,gathered from north provinces (Gilan and Mazandaran) of Iran, were investigated to classify them according to their genotype groups. The PM–PCR method was used to verify the PM isolates and then the presence of TonB gene among isolates were detectedby specific PCR method. To classify the isolates into their genotyping groups, poly acrylamid gel was utilized based on amplified size differences. The results of this study showed the presence of *tonB* gene among all of the isolates (100). They were classified into 5different (polymorph) genotypes (I-V).
The presence, pattern and prevalence of each TonB genotype might be useful to better understandingthe role of TonB in pathogenesis and could lead us to choose the better strains for improving the vaccinepotency against avian pasteurellosis.
Key words:Iron acquisition, *tonB* gene, *Pasteurella multocida*, fowl cholera, vaccine

Investigetion of *Avibacterium paragallinarum* in breeder farms using culture and polymeras chain reaction

Barzegari Naeeni R[1,*], Askari Badouei M[2],Sadrzadeh A[3],Moshayedi A[4]

[1]Department of Avian Diseases,Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran[2]Department of Veterinary Microbiology,[3]Department of Avian Diseases[4]Graduated DVM, , Faculty of Veterinary Medicine, University of Garmsar, Semnan, Iran,

Corresponding author's email:reza.barzegari@ut.ac.ir

Objectives: Respiratory diseases are among the major cause of economic losses in poultry industry worldwide. Avibacterium paragallinarum is the causative agent for infectious coryza that is related to respiratory diseases, poor growth, and mortality in chickens and turkeys. Although this bacterium has no public health significance, the global population growth and need for more food resources urges the need for intensive poultry raising systems, where pathogenic microorganisms including this bacterium can be a risk for the industry. Infectious coryza not only exacerbates the respiratory complexes, but also causes mortality, egg drop, reduction in egg size, and affecting the quality of egg shells in breeders.

Materials & Methods: The aim of the present study was the isolation and identification of *Av. paragallinaum* in broiler breeders in Iran for the first time. For this purpose, 100 tracheal swab samples were collected from different provinces. Then, the samples cultured on sheep blood agar-with *Staphylococcus epidermidis* cross streak. After Gram-staining, catalase, and oxidase tests, the suspected isolates were checked by specific PCR assay. Additionally, all swab samples were subjected to direct-PCR for *Av. paragallinarum*.

Results & Conclusion: The results showed that 9.3% of the clinical samples (swabs) and two isolates (1.6%) from cultures were positive for *Av. paragallinaum* that confirms the presence of this bacterium in breeders in Iran. A noteworthy observation was the non-stattellitic growth property of two isolates that needs more studies to confirm the presence of NAD-independent strains in Iran. The detection and isolation of this bacterium from a vaccinated farm urges the need for additional studies in breeders.

Keywords: Avibacterium paragallinarum, Isolation, Broiler breeder chicken

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Molecular detection of pigeon herpesvirus, fowl adenovirus and pigeon circovirus in pigeonsrefered to mashad

Omid Behrouzi Nasab1,Jamshid Razmyar2, Gholamali Kalidari3, Hossein Nourani4, Reza KafiMashhadi,

Seyed Ali Kargar5

1,2,3,5 Ferdowsi University of Mashhad,4Iranian veterinary organization

omidjagha@gmail.com

Pigeon is one of the birds that in addition to have a special place in our civilization, is important in Islam religion too. There are lots of pathogens that sickens this bird, including viruses. In this research we focus on pigeon Adenovirus, pigeon Circovirus and pigeon Herpesvirus, which are three most important viruses in pigeons. All of these viruses have a major role in Young Pigeons Disease Syndrome, which have common symptoms such as diarrhea, vomiting, lethargy, respiratory distress and depression, and have no separate and pathognomonic sign. One of the methods to detect these viruses in pigeons is polymerase chain reaction that used in this research. Sampling was performed from liver of dead pigeons during four years from 2011 to 2015 in veterinary hospital of the Ferdowsi University of Mashhad, Iran. Total genome of samples was extracted, and histopathological slides were prepared according to their specific protocols.

In this research, for the first time, presence of adenovirus in 15.5%, circovirus in 100%, and herpesvirus in 22.5% of pigeons that studied in Mashhad were proved.

To author's knowledge this is the first report in Iran. To find out exact prevalence of these viruses in Iran, more researches with larger population and throughout the country are necessary.

The First Detection of Goose Circoviruses in a Flock of Graylag Goose (*Anseranser*) in Tehran, IRAN.

Mohammadreza Haddad marandi[*,1], Hassan Nili[1], Seyed Ahmad Madani[2, 3], Amir Ghorbani[2]

[1]*Avian Disease research center, Department of clinical science, Faculty of veterinary medicine, P.O. 1731, Shiraz University, Shiraz Iran*

[2]*Department of Avian Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran*

[3]*Central Veterinary Laboratory, Towhid St., Tehran, Iran*

Corresponding author's email: mr_haddadmarandi@shirazu.ac.ir

Objectives: Goose circovirus (GoCV) is a potential immunosuppressive virus that can cause growth retardation and great economic impact in goose breeding industries. Clinical signs varies from depression and diarrhea to immunosuppression related symptoms. The virus can lead to immunosuppression by lymphoid depletion and cause fatal diseases. Unlike other circoviral agents in other species detection of inclusion bodies are not a frequent finding in goose circoviral infections.

Material & Methods: In a flock of 60 one-month-old goslings with a mortality of 50% during the rearing period, the only clinical sign were runting. A comprehensive necropsy has been performed. Samples were taken from whole internal organs including lymphoid tissues for routine bacterial culture, pathological and molecular investigations. The DNA was extracted and detection has been done by a broad spectrum nested PCR using degenerated primers targeting the Rep-encoding region of avian circoviruses. The PCR product of the expected length of 350 bp was sequenced at Bioneer Co., Korea. BioEdit, MegAlign and MEGA6 softwares were used for genetic analysis of the sequences.

Results & Conclusion: There were no gross lesions in the necropsy except rickets. Cultivation for common bacterial and fungal infectious agents were also negative. There were no apparent histopathologic lesions except severe depletion of bursal lymphocyte and cystic degenerations in bursal tissue. There were no inclusion bodies in affected tissue. The presence of GoCV genome in the samples was confirmed using sequence analysis. The phylogenetic analysis based on the partial rep gene showed that the GoCV from this study formed a distinct subgroup of the previous strains but placed within the second clade of the previously known GoCV strains (xs1, yk2, yk4 and TD254-2014) from China. Analysis of percent identity and divergence among GoCVs showed that the GoCV from this study was closely related to GoCV strain yk2 from Eastern China with 98% nucleotide sequence identity. GoCV is an immunosuppressive virus that can cause developmental disorders and secondary infections in affected flocks. Circoviral infection is widespread within geese flocks around the world. However, to the authors' knowledge, this is the first report of GoCV from Iran. Hence, further investigation of prevalence of GoCV within Iranian gees flocks might be needed.

Keywords: Goose circovirus, Immunosuppression, Growth retardation,Rep gene, Sequence analysis, Iran

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West Nile virus in birds and poultry and itsimplication on public health

Savić V[1]*, Barbić L[2], Vilibić-Čavlek T[3], Balenović M[1], Stevanović V[2], Listeš E[4], Savini G[5]

[1]*Poultry Center, Croatian Veterinary Institute, Zagreb, Croatia;* [2]*Department of Microbiology and Infectious Diseases with Clinic,Veterinary Faculty, University of Zagreb, Zagreb, Croatia;* [3]*Department of Virology, Croatian National Institute of Public Health,Zagreb, Croatia;* [4]*Regional Institute Split, Croatian Veterinary Institute, Split, Croatia;* [5]*OIE Reference Centre forWest Nile Disease, IstitutoZooprofilatticoSperimentale "G. Caporale", Teramo, Italy*

Corresponding author's email: v_savic@veinst.hr

Objectives: Birds are the main reservoir for West Nile virus (WNV)while mammals, particularly humans and horses, represent dead end hosts.Infected birds usually do not show symptoms, although few avian species can suffer from severe disease even with lethal outcome. Geese and ducks are particularly sensitive to the disease and develop high viremia and severe symptoms.Mortality in young geese can be as high as 60%. On the other hand, infection in chickens and turkeys usually remain subclinical but with development of high titre antibodies and very low viremia. Hence, chickens can be used as sentinels for seasonal incursions of WNV which is usually introduced by migratory birds and transmitted by mosquitoes. WNV can cause neurological disease and death in humans as well as in horses. The objective of this study was to use chickens and horses as sentinels for early detection of WNV in order to timely conductappropriate anti-epidemic measures in Croatia.

Materials and methods: During a three-year period (2013-2015), a total of 1,717 serum samples from sentinel outdoor chickens and 8,131 serum samples from horses were tested for WNV antibodies using IgG ELISA.In addition, 278 serum samples from humans suspected of WNV infection and 1,778 serum samples from asymptomatic subjects were tested for WNV IgM and IgG antibodies. WNV positive human samples were confirmed using virus neutralization test. Positive horse sera were retested using IgM ELISA in order to confirmcurrent/recentWNV infection.

Results & Conclusion:198 (11.53%) chickens, 665 (8.18%) horses as well as22 (7.9%) humans suspected of WNV infectionand 15 (0.84%) asymptomatic subjects were found to be positive. Of 585 positive horse sera, WNV IgMantibodies were found in 34 (5.81%) samples. A significant correlation in geographical distribution of high WNV seroprevalence in tested animalswithhuman WNV infections was found. In addition, this coincided in regions contiguous to countries where high incidence of human neuroinvasive WNV infection was reported during the investigated period.Coordinated extensive monitoring of WNV infection in poultry and horses throughout Croatia, as an early warning system, enabled timely anti-epidemic measures, primarily thorough disinsection in affected areas.This resulted in prevention of mass occurrence of human neuroinvasive WNV infections as reported in certain neighbouring countries.

Keywords: West Nile Virus, Poultry, Horses, Sentinels, Public Health, Croatia

New strain of S_1 gene of ARVs in broiler breeder of Iran

HEDAYATI M.[1,2]*, SHOJADOOST B.[1], PEIGHAMBARI S.M.[1], GHALYANCHI LANGEROUDI A.[1]

1-Department of Avian Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, P.O. Box 14155-6453, Iran

2- Department of Animal Science, Faculty of Agriculture, University of Malayer, Malayer, Iran.

Objectives: Avian reoviruses (ARVs) are important causes of disease conditions in poultry, in particular, reovirus-induced arthritis, tenosynovitis.
Materials & Methods: In this study, avian reoviruses causing tenosynovitis in breeder flocks of Iran was investigated by RT-PCR, (RFLP) and molecular characterization of the virus isolates. Extracted RNA from 800 fecal swab samples then were used in RT-PCR to amplify the selected parts of S_1 (1023 bp) genes from ARV field isolates. The RT-PCR amplified products of positive samples were further analyzed by RFLP using five restriction enzymes of *Bcn*I, *Dde*I, *Hae*III, *Hinc*II, and *Taq*I. Sequence analysis of the S_1 genes of ARVs isolated.
Results & Conclusion: The result of this study revealed that positive samples were closely related to the most ARVs inducing tenosynovitis with less than 2% nucleotide divergence. The homology was highest with the strain S1133, this strain is commonly strain that induced tenosynovitis and used in live and killed vaccine and this new strain had a 99/9 % nucleotide and amino acid identity.
Keywords: Avian reo viruse, S1 genome, breeder, iran

Innovative adjuvants improve protection conferred by poultry vaccines

Louiza Chitour[1], François Bertrand[2], Juliette Ben Arous[3], Laurent Dupuis[3]

[1]SEPPIC, East Wing 5, Dubai Airport Free Zone, PO Box – 54638, Dubai, UAE
[2]SEPPIC China, 580 West Nan Jing Road, Shanghai 200041, China
[3]SEPPIC, 22 Terrasse Bellini, Paris La Défense, 92806 Puteaux Cedex, France
Corresponding author's email : louiza.chitour@airliquide.com

Objectives: Water-in-mineral oil adjuvants induce a strong long-term humoral immune response and are widely used in poultry vaccines. New generation adjuvants are needed to increase short and long term protection of avian vaccines, to formulate more stable and efficient multivalent vaccines and to help extend the vaccinal cross-protection against different viral or bacterial strains or serotypes. To address these issues, Seppic has developed 2 grades of water-in-mineral oil adjuvants dedicated to poultry vaccination, Montanide™ ISA 71 VG (ISA 71) and Montanide™ ISA 71 R VG (ISA 71 R). Here we demonstrate that ISA 71 is a potent adjuvant that can improve protection conferred by viral vaccines. It is also proved that ISA 71 R is a flexible and robust adjuvant that can improve the performance of multivalent avian vaccines.
Materials & Methods: First, galenic properties and safety profile of both adjuvants were tested in laboratory conditions. Further, in a first trial, 10 chickens per group were injected with experimental Newcastle Disease (LaSota) and Avian Influenza (H9N2) vaccine adjuvanted with standard W/O adjuvant or with ISA 71 (used at 70%). Vaccine efficacy was assessed by ELISA antibody titration up to D42. In a second field trial, 30 chickens per group were injected at D0 and D21 with infectious coryza trivalent vaccines either based on ISA 71R (used at 60%), standard adjuvant or commercial vaccines. Vaccine efficacy was assessed by a virulent challenge at D35.
Results & Conclusion: Lab trials showed that ISA 71 and and ISA 71R are easy to handle and safe adjuvants. In the first poultry trial, ISA 71 vaccine induced significantly higher antibody levels than other formulations from D0 to D28. The use of ISA 71 also allowed a reduction of the antigenic load to 25% of the original concentration. In the second trial, ISA 71R based vaccines were stable and induced 100% protection against all the valences of the infectious coryza vaccine. These results demonstrate that ISA 71 and ISA 71R adjuvants are safe and efficient adjuvants for poultry vaccine formulation.
Keywords: Vaccine, adjuvants, Newcastle disease, Avian influenza, Infectious coryza

Alleviating effects of Satureja Khuzestanica extract on broilers which were exposed to cold stress situation on performance parameters and antibody responses to Newcastle disease vaccination

Kor S[2,*], Zamani Moghaddam AK[1], Kiani Salmi A[3], Vakili N[4], Keyvani Hafshejani S[5], Nasiri M[2]

[1] Department of clinical sciences, Faculty of veterinary medicine, Shahrekord University, Shahrekord, Iran; [2] DVM student, Shahrekord University, Shahrekord, Iran; [3] Technician at department of clinical sciences, Shahrekord University, Shahrekord, Iran; [4] Barij Essence Phamaceutical company, Kashan, Iran; [5] Graduated of veterinary medicine, Shahrekord university, Shahrekord, Iran

Corresponding author's email: s.kor@stu.sku.ac.ir

Objective: Recently, herbal feed additives like essential oils and herbal extracts are considered as alternatives to antibiotics due to their fewer biological harmful effects. Satureja Khuzestanica is one of the herbal extracts that is considered as a therapeutic agent which contains essential oils, flavonoids and triterpenoids and was shown to have beneficial effects on FCR, but the extract's effect has not been assessed under cold stress situation in broiler chickens.
Material and methods: 135 one-day old broiler chickens (Ross 308) from both sexes were randomly divided into three groups of 45 chickens (15 birds/ replicate). The experimental groups included control group, 250 ppm and 500 ppm Satureja Khuzestanica (Barij Essence Pharmaceutical Co.) from day 11. The Satureja Khuzestanica extract was added to the drinking water of treatment groups and all the groups received feed and water *ad libitum* till the end of the experiment. Environmental temperature of was decreased more rapidly than the normal situation and reached 16 °C at the end of the 2nd week till the end of the 4th week, after that it was elevated to the normal levels. Vaccination against Newcastle disease was performed equally with live lentogenic vaccines. At the end of the experiment, blood was collected from 9 birds whose body weights were closer to the group average and were slaughtered to measure carcass yield and selected internal organs. Assessments of humoral immunity responses were carried out with HA and HI tests.
Results and conclusion: The obtained results showed significantly better Feed conversion ratio in 500 ppm Satureja Khuzestanica group compared to control and 250 ppm of the extract ($p<0.05$), but 250 ppm Satureja treatment group reached the best percent of carcass yield ($p\geq0.05$). Meanwhile the mortality of the control group was significantly more than the other groups ($p<0.05$). The percent of internal organs weight including the percent of liver and spleen weights were better in 250 ppm Satureja, although it was not significant. Moreover heart weight gain was more in control group which might be due to initiation of ascites syndrome. In addition, the humoral antibody response to Newcastle disease vaccination was best in 500 ppm Satureja treatment ($p<0.05$). It could be concluded that addition of Satureja Khuzestanica extract in cold stress situations to the drinking water at 500 ppm dosage would induce better FCR and lessen mortality and might have beneficial effects for obtaining better humoral antibody responses after Newcastle diseases vaccination.
Keywords: Saturja Khuzestanica, Cold Stress, Broiler, performance, Humoral immunity

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The effects of adding antibiotic toliveNDV vaccineon evolution of conjunctiva-associated lymphoid tissuestructure and in stimulating antibody response with eye drop route by ELISA and HI tests

Vaziri SH[1], Sadrzadeh A[1]*, peighambari SM[2], RafieyanM[1], Zarepour HR[1]

[1]Department of Clinical Sciences, Faculty of Veterinary Medicine, Islamic Azad University, Garmsar Branch, Garmsar, Iran
[2]Department of Avian Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran

Corresponding author's email:avestasadr@yahoo.com

Objectives: The presence of conjunctiva-associated lymphoid tissue near the entrance of live-virus vaccine is one of the most important reasons of the effectiveness of eye drop route. Eye bacterial infection due to contamination of the air of poultry houses is one of the reasons that could prevent effective dose of vaccine virus from reaching the lymphatic nodes of the eye because of absorption of the viruses. The aim of the present study is to decrease the negative effects of the bacterial infection by mixing the vaccine solution with an antibiotic and as a result, having a better immune response against Newcastle disease. Excenel and Penicillin have been selected for this study due to providing the conditions.
Materials & Methods: 385-Ross 308 broiler chicks were randomly divided into 7 equal groups as follows: Groups 1 and 2: The solution of eye drop of Newcastle vaccine and Excenel. Groups 3 and 4: The solution of eye drop of Newcastle vaccine and Penicillin. Groups 5 and 6 (as the drug-control groups): The eye drop of Newcastle vaccine without adding any antibiotic. Group 7: The vaccine control group. At days 10, 16, 23 and 33, serum samples were collected from the chickens and used to estimate the antibody levels against Newcastle Disease virus by using Haemagglutination Inhibition (HI) and ELISA test. Then the samples of the conjunctive tissue were carefully collected and fixed in 10% formalin solution. After stabilizing the samples, they were stained with Haematoxylin-Eosin method for microscopic observation.
Result & Conclusion: The results of this study showed that there were no significant histopathological changes in lymphoid tissue. Although, in some cases, significant differences between the results of the antibody responses of antibiotic-vaccine administered groups and drug control groups were seen, the hypothesis of this study was not proved. There are probable reasons for not observing significant differences between the groups. The most important reason is having a safe condition such as low density of chicks and good ventilation of the poultry house. These circumstances could prevent the bacterial infection of the eye from providing proper conditions for the expected impact of antibiotic administration. If the results of other studies on various aspects of immunity and carried out in field conditions are associated with similar results to this study, it can be concluded that mixing the drug with vaccine solution has no effect on the results of eye drop vaccination against Newcastle Disease.
Keywords: Newcastle disease, lymphoid tissue, Eye drop, Antibiotic, Broiler

Hematological values in domestic pigeons naturally infected with*Mycobacteriumavium* subsp. *avium*

Kaveh. Parvandar Asadollahi[1*], Mansour. Mayahi[1],GholamHossein. Khajeh[1], Nader. Mosavari[2], Ali Reza. Raki[1]

1-Department of Clinical Sciences, Faculty of Veterinary Medicine, ShahidChamran University of Ahvaz, Ahvaz,Iran
2-Razi Vaccine and Serum Research Institute, Karaj, Iran

Corresponding author's email: kaveh_parvandar@yahoo.com

Objective: Avian tuberculosis is an important disease affecting all species of birds and is most often caused by *Mycobacteriumavium* or *Mycobacteriumgenavense*. Analyses of hematological values is a useful diagnostic tool in clinical practice and is especially important in birds, which frequently show few overt clinical signs of disease. The aim of this investigation was to compare hematological values of domestic pigeons (*Columbalivia* var. *domestica*) naturally infected with *mycobacteriumavium* subsp. *avium* (MAA), with healthy pigeons.
Material & Methods: Blood samples were collected from 12 pigeons suspected to tuberculosis. All birds were necropsied and their affected organs were subjected for culturing and histopathological examination for mycobacteriosis; positive cultures were typed for MAA by PCR reactions targeting 16S rRNA, IS1245 and IS901. Total leukocyte and erythrocyte counts were performed on each blood sample with Natt and Herrick method using Neubauerhemocytometer.White blood cells differentials were performed on Giemsa stained smears. Packed cell volume was measured by microhematocrittechnique. Hemoglobin concentration was measured by spectrophotometer usingcyanomethemoglubin method. Mean Corpuscular Hemoglobin, Mean Corpuscular Hemoglobin Concentration and Mean Cell Volume were calculated manually. For statistical analysis, the infected birds were compared with healthy pigeons.
Results &Conclusion: All the 12 birds had typical histopathological findings of avian tuberculosis and cultures positive for MAA and this was confirmed by PCR. The total WBC, heterophils, lymphocytes and monocytes were significantly higher in the infected birds in comparison with the healthy control group. The PCV, HGB, MCH and MCHC were significantly lower in the infected birds in comparison with the healthy control group. Statistically significant leucocytosis and anemia in the infected birds indicate that evaluation of hematological parameters can be used in the diagnosis of avian tuberculosis as a nonspecific indicator.
Key Words: Avian tuberculosis, *mycobacterium avium* subsp. *avium*, domestic pigeons, hematological values, leukocytosis, anemia

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Effect of apple cider vinegar and commercial vinegar on growth, histopathological and serological parameters in broiler chicken undergone imbalanced diet

A. Asl Najjari[1,*] , K. Asasi[1] , F. Namazi[2] , S. Mokhayery[1] , M. Kalantari[3] , N. Hatami Nesar[4] , H. Darvishian[4] , M. Gharibnavaz[4]

1. *Department of Poultry Sciences, School of Veterinary Medicine, Shiraz University, Iran*
2. *Department of Pathobiology, School of Veterinary Medicine, Shiraz University, Iran*
3. *Department of Clinical Pathology, School of Veterinary Medicine, Shiraz University, Iran*
4. *DVM student, School of Veterinary Medicine, Shiraz University, Iran*

The aim of this study was evaluation of apple cider vinegar, commercial vinegar and Acesol plus® effect on weight gain and kidney lesions and serological parameters in broiler chicken, which calcium/phosphorus ratio was imbalanced in their diet.In this study, 100 day-old broiler chicken divided into five groups, which received balanced diet (1), imbalanced diet (Ca/P ratio was eight) without any treatment (2), and treatment groups with apple cider vinegar [3ml/1lit in drinking water] (3), commercial vinegar [3ml/1lit] (4) andAcesol plus® [0.5ml/1lit] (5), respectively. The total acidity and PH for apple cider vinegar, commercial vinegar and Acesolplus® were 4.68, 3.85 ; 4.41, 3.6; 49.41, 2.7, respectively. After 20 days having imbalanced diet and seeing mortality, the diet changed to balanced formulation and treatment with mentioned vinegars was done for seven days. Before and after treatment weight gaining was evaluated for each group. Necropsy from kidneys was done and stained with H&E for histopathological analysis. For serological purposes, uric acid, calcium and phosphorus level in blood sera were analyzed by photometer. The results showed that there was statistically significant difference in weight gaining between balanced and imbalanced diet, and after treatment thesignificant differencewas betweengroup 1 and other groups, which there wasn't any significant difference between treatment groups. Although the calcium/phosphorus ratio was eight, the results didn't show any renal lesions in gross or histopathology.Serologically, before treatment there was decrease in uric acid level with imbalanced diet rather than balanced diet, and after treatment there was not statistically significant difference between treatment groups. Calcium level increased significantly in the groups with imbalanced diet before treatment, but after treatmentthere wasn't any statistically significant difference between groups. Phosphorus level decreased in the groups with imbalanced diet before treatment, and after treatment there was significant difference between groups 2 and 4.In conclusion, the imbalance of calcium/phosphorus ratio couldn't induce significant renal lesions, macroscopically or microscopically, however it could change some serological factors and growth rate. Also, the different kinds of available vinegars in this study didn't have obvious effects on serologic or growth parameters in broiler chicks.
Key words:vinegar, broiler chicken, diet, uric acid, calcium, phosphorus

Isolates from Broiler Farm to Antibacterial Agents Susceptibility Pattern of Escherichia Coli in Semnan, Iran

Emadi-Chashmi H[1*], Ahmadi-hamedani M[1], Kafshduzan K[2], Davood A[1], Khoshgoftar J[3]
[1]*Department of Clinical Sciences, Faculty of Veterinary Medicine, Semnan University, Semnan, Iran;*
[2]*Departments of Pathobiology, Faculty of Veterinary Medicine, Semnan University, Semnan, Iran;*
[3]*MSc of Bacteriological Sciences, Faculty of Veterinary Medicine, University of Shahid-Bahonar, Kerman, Iran*
Corresponding author's email: hesamemadi@yahoo.com

Objectives: Collibacilosis is known as an important bacterial disease of poultry industry with a lot of commercial losses. Excessive use of antimicrobial drugs to prevent colibacilosis causes resistance to commonly used antibiotics in public health and veterinary sectors; in other hands it limits the therapeutic possibilities in treatment of bacterial disease. This study was conducted to evaluate susceptibility pattern of Escherichia Coli isolates from broiler farm to Antibacterial Agents in Semnan provience, the most high risk region of poultry rearing in Iran, during 2012- 2014.

Materials & Methods: 53 broiler farms (two to six week-olds) with various mortality ranges selected for necropsy examination, E. Coli Isolated from heart of carcasses with cultured on Mac Conkey agar (Merck) and Incubated at 37ºC for 24 hours and biochemical differential test. One hundred and eighty four Escherichia coli isolates and twelve antimicrobial drugs, including enrofloxacin, difloxacin, fosfomycin (fosbac®), colistin, erythromycin, flumequine, florfenicol, lincomycin+spectinomycin (linco-spectin®), sulfadiazine+trimethoprim (sultrim®), chlortetracycline, doxycyclin and tetracycline, were performed in Mueller-Hinton agar, using standard disc diffusion method.

Results & Conclusion: Antibiogram results in broiler farms revealed that Fosbac (74%) has the highest sensitivity and it seems to be most effective antibiotic, other finding were Florfenicole (30.7%), Sulfadiazine + Trimethoprim (23.4%), Enrofloxacin (17.8%), Difloxacin (17.6%), Flumequine (16.9%), Doxycycline (16.5%), Lincomycin + Spectinomycin (14.5%), Colistin (14.5%), Tetracycline (6.5%), Cholortetracycline (5.9%), Erythromycin (3.7%) respectively. Susceptibility pattern of this study reveled that resistance to tetracycline family is more than 80%. All of Qinolon group members in this study were similar in their susceptibility, about 17% more and less. This investigation showed high rate of resistance in routin antibiotic used in veterinary in semnan broiler farms. High resistance to antibiotic agents may be due to abuse administration of them in broiler farms.

Keywords: Collibacilosis, Antibiotic agents, Antibiogram, Semnan, Resistance, Broiler Farm.

Poster Abstracts

The Effect of Silver Nanoparticles Coated onClinoptilolite onCrop Microbial Population in Broiler Chickens

Smaili M[1], Hashemi SR[1], Davoodi D[2], Jafariahangari Y[1], Hassani S[1],Bolandi N[1], &Shabani A[1]

[1]*Faculty of Animal Science, Gorgan University of Agricultural Sciences and Natural Resources, Gorgan, Iran.*
[2]*Nanotechnology Department, Agricultural Biotechnology Research Institute of Iran, Karaj, Iran.*
Corresponding author email: hashemi711@yahoo.co.uk

Objective: Silver nanoparticles and other forms of silver are widely used nowadays for their antibacterial activity .Anexperiment was conducted to evaluate the effect of clinoptilolite coated with silver nanoparticles on crop microbial population.
Materials & Methods: A total of 375 one-day old broilers (Cobb 500) were randomly divided into 5 treatments and 5 replicates of 15 birds which were kept on the floor pens. Treatments were:1) controldiet, 2) controldiet supplemented with1% clinoptiloliteand 3, 4, and 5) controldiet supplemented with1% clinoptilolitecoated with %0.25, %0.5and %0.75nanosilver. On d 42, two birds per replicate were randomly selected, weighed, slaughtered and immediately intestinal content from crop was collected separately in sterile glass containers. Samples (1g of the mixed fresh mass) were taken into sterile test tubes and diluted 1:10 in sterile normal saline. Ten fold serial dilutions of each sample were prepared in 9 ml of normal saline solution. Viable counts of total aerobes bacteria were enumerated on plate count agar (PCA) after incubation at 38^{o}C for 48hrs. Lactic acid bacteria were enumerated on Man, Rogasa and Sharpe agar (MRS) at 38^{o}Cfor 48hrs.
Results & Conclusion:On d 42 results showed that theuseof silver nanoparticles coated on clinoptilolite at %0.25and%0.5increased the population of lactic acid bacteria compared to the controltreatmentandcontrolgroup supplemented with1% clinoptilolite($P<0.0009$).There were no significant differences among treatments on total aerobic bacteria population ($P<0.0523$). In conclusion, results showed that the silver nanoparticles coated on clinoptilolite can improvethe population of beneficial bacteria in broiler chickens.
Keywords: Broiler chickens, clinoptilolite, microbial population,silver nanoparticles.

Antibiotic resistance patterns of *Escherichia coli*strains isolated from broiler chicken farms in northwest of Iran

Yousef Nasiri*[1], AlirezaTalebi[2] ,Jafar Taifebagerlu[2]

1.*Graduatedstudent of veterinary medicine*, Faculty of *Veterinary* Medicine, *IslamicAzad*University,*Urmia,Iran.*
2. Department of Avian Diseases, Faculty of Veterinary Medicine, Urmia University, Urmia, Iran.
Corresponding author's email:J.tayefeh@urmia.ac.ir

Objectives: The aim of this study was to determine antibiotic resistance profile of *Escherichia coli*strains isolated from of broiler flocksin northwest of Iran.Colibacillosis caused by APEC is the most Common infectious bacterial disease of poultry and that collectively, *E.coli*infections in their various forms are responsible for significant economic losses. Antibiotic usage is possibly the most important factor that promotes the emergence and dissemination of antibiotic resistance in both veterinary and human medicine.APEC is the most important agent causing secondary bacterial infection in poultry industry and may also be a primary pathogen.
Materials & Methods:A total of 420 samples were collected from broiler flocks of northwest of Iranbetween January 2014 and December 2015. Sampling with swabs from heart, liver, lung and yolk sac were done and cultured on MacConkey's agar and eosin-methylene blue (EMB) agar and incubated at 37^{o}C.Isolated *Escherichia coli* were tested for antibiotic susceptibility via disk diffusion method (Kirby-Bauer)using the most recommended antibiotics discs and antibiotic sensitivity observed by measuring the zone of inhibition diameter on the plate according to the method recommended by NCCLS.
Results & Conclusion: The result of this study suggests multiple-antimicrobial-resistant APEC.Thehighest resistance was observed to Flumequine (34%) followed by Doxycycline (22%) and Gentamicin (21%). This study also showed that the prevalence of Quinolone-Resistant *Escherichia coli* (QREC) is very high in broilerfarms in northwest of Iran. Since the high expenses of antibiotic therapy and elevatingresistance to antibiotic, we must choose the best antibiotic.The present study highlights the prevalence of multiple drug resistantE.coli among broiler chickens in northwest of Iran.
Keywords: *Escherichia coli*, prevalence, antibiotic resistance, broiler,Iran

An evaluation of alfalfa for molt induction on intestinal morphometric parameters and performance of commercial laying hens

Ehsan Shahrami[1*], Hassan Rokni[2]

[1]Department of Animal Science, Qazvin Aricultural and Natural Resourses Research and Education Center, Qazvin, Iran, [2]Agricultural Research, Education and Extension Organization, Tehran, Iran

Corresponding author's email: e.shahrami@gmail.com

Objective: Conventional molt induction involves the complete removal of feed for several days.However, there is growing concern regarding feed removal and animal welfare issues. Also the use of feed withdrawal for molt induction can negatively affect the structure and microbial environment of intestine and lead to greater intestinal colonization by salmonella infection.so, alternative diets have been developed to produce similar molting effects as that of feed deprivation. Alfalfa, which largely consists of insoluble fiber, can be used as a molting diet.The aim of the present experiment was to determine the effects of alfalfa as a high fiber ingredient for molt induction on intestinal morphometric characteristics and performance of commercial laying hens.

Materials and methods: In this experiment 108 Hy-line (W36) laying hens aged 74 weeks in a completely randomized design with 3 treatments and 6 replicates were used. The using treatments for 12 days molt period were included: 1- control group fed with layer ration (FF), 2- feed withdrawal group (FW), 3- group fed with 90% alfalfa and 10% layer ration (A90). At the end of molt period (day 12), 2 birds in each replicate were slaughteredfor sampling from all three region of intestine.Performance of birds was monitored for 12 weeks after the end of the molting period.

Results and conclusions: Feed withdrawal hens had lowest villus height in all three regions of the intestine ($P<0.05$).The highest mean of duodenal crypt depths was observed in FW hens. In all three regions of the intestine, the lowest amounts of villus index and villus surface was observed in FW hens ($P<0.05$). In all three regions of the intestine, the highest and lowest mean of goblet cells was seen in the A90 and FW hens respectively. The highest mean of post molt egg mass was observed in FW hens ($P<0.05$). The best FCR was seen in the A90 group. The results of this experiment showed that use of alfalfa-riched feed for molt induction of laying hens lead to improvement of morphometric characteristic of intestine and post molt performance.

Keywords: Forced molting, Alfalfa, Intestinal morphology, Performance, Laying hens

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Hormonal Changes, Immonological Respose and Date of Reentry in Laying Hens Fed by Alfalfa Molt Diet

Ehsan Shahrami[1*], Hassan Rokni[2]

[1]Department of Animal Science, Qazvin Aricultural and Natural Resourses Research and Education Center, Qazvin, Iran, [2]Agricultural Research, Education and Extension Organization, Tehran, Iran

Corresponding author's email: e.shahrami@gmail.com

Objective: Feed withdrawal is the most popular and effective method of molt induction.However, molting induced by feed withdrawal cause discomfort and stress in hens. Stress causes a general deterioration of well-being of chickens, usually involving a cascade of immonological cell responses that include changes in heterophil to lymphocyte ratio as an indicator of inviromental stress.Consequently less stressful molting regims involving the feeding of low enegy diets such as alfalfa have been developed.The aim of the present study was to investigate the hormonal changes and immonological response in hens fed by alfalfa compared with feed withdrawal hensduring the molt period.

Materials and methods: In this experiment 108 Hy-line (W36) laying hens aged 74 weeks in a completely randomized design with 3 treatments and 6 replicates were used. The using treatments for 12 days molt period were included: 1- control group fed with layer ration (FF), 2- feed withdrawal group (FW), 3- group fed with 90% alfalfa and 10% layer ration (A90).Blood samplewere taken on day 0 (before any treatments began), 3, 6, 9 and 12 for hormonal analysis and enumaration of leukocytes. Approximately 6 ml of blood was takenfrom two birds in each replicate.Performance of birds was monitored for 12 weeks after the end of the molting period.

Results and conclusions: Results indicated that, total circulating leukocyte were generally lower in FW hens group compared with the other groups during the initial stage of molt ($P<0.05$). On d 3 and 6 of molt, heterophil to lymphocyte ratio were incresed in molted hens and FW hens had higher levels than other groups. On d 3 of molt, plasma corticosterone was generally incresed in molted hens and FW hen higher level than A90 hens ($P<0.05$). Plasma T_3 was significantly decreased in molted hens than nonmolted hens during the molt period ($P<0.05$). Plasma T_4 was significantly increased in molted hens than nonmolted hens during the molt period ($P<0.05$). On d 6 and 9 of molt, concentrations of T_4 were higher in FW hens than in the A90 hens ($P<0.05$). Date of reentry and days return to 50% and 80% egg production were significantly lower in A90 groups than in the FW groups ($P<0.05$). The results showed that, A90 diet can limit some of the potential physiological stress indicators that accompany feed deprivation during an induced molt and improve the economical performance.

Keywords: Alfalfa, Corticosterone, Forced molting, Laying hens, Thyroid hormons

Infestation of coot(*Fulicaatra*)to *Amidostomunfuligulae*from Anzali Seaport

Imani-Baran A*

**Department of Pathobiology, Faculty of Veterinary Medicine,University of Tabriz, Tabriz, Iran*
***Corresponding author's email:a.imani@tabrizu.ac.ir**

Objectives:In the recent years parasitic infestation survey on wild animals has been considered by parasitologists, biology and wild life scientists. These considerations can play important role in the epidemiological studies and control strategies of parasitic infestations in wild and domestic animals. The aim of this study was to report of an infestation with *Amidostomunfuligulae*in twocoots fromAnzali seaport. *Amidostomunfuligulae*belong to the *Amidostomidae*occurs in domestic and wild water birds in the mucosa of gizzard, sometimes proventriculus and oesophagus. The worms are slender and reddish in color. Male 10-17 mm, female 12-24 mm in lenght. The buccal capsule is short, wide and thick-walled three pointed teeth at the base. The male has copulatory bursa and two spicules 0.2-0.3 mm in length and each ends in two branches.
Material & Methods: The carcasses of two cootsfrom Anzaliseaport had been brought toparasitology lab of Veterinary Faculty of Tabriz University. For endoparasites exploration the carcasses of both coots were dissected. Only three male nematodes were isolated from the intestinalcontent of one of coots and after mounting,worms were examined with light microscope and identification was made on the base of morphological characteristics.
Results & Conclusion: According to the morphological characteristic and diagnostic keys, the three male nematodes were diagnosed as *Amidostomunfuligulae*. This nematode specieshas been previously reported from Iran. For instance, in faunisticsurvey on the bird helminth parasitesfrom34fish-eating birdsin Khuzestanprovince (Farahnak et al., 2004),*Amidostomunfuligulae* was one ofreportednematoda from digestive tract with the same number.
Key Words: Coot, *Fulicaatra*, *Amidostomunfuligulae*, Anzali

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Colpocephalumfregili Denny 1842 (Amblicera, Menoponidae)on Magpie: The first case report in Iran

Imani-Baran A*
**Department of Pathobiology, Faculty of Veterinary Medicine,University of Tabriz, Tabriz, Iran*
***Corresponding author's email:a.imani@tabrizu.ac.ir**

Objectives: The aim of present study is reporting *Colpocephalumfregili* on Magpie for the first time in Iran.
Materials & Methods: During summer 2010, in order to investigateectoparasites, a total of 3 magpies were caught from Miandoab region and brought to the parasitology laboratory of veterinary faculty of Urmia University. Thereafter, birds were kept in plastic sacs with cotton impregnated with chloroform, and then lice were collected from the feathers. A total of 7 lice were found and all specimens were dehydrated, cleared and mounted according to common parasitological methods.Measurement of different body parts of mounted specimens were measured by using ocular micrometer 10x after calibration the microscope at magnifications 10x-20x.
Results & Conclusion: The identification of lice indicated that they belong to *Colpocephalumfregili* (Amblicera, Menoponidae). As to the morphology, body was brown in color and well chitinized. The average dimensions of lice were total length 2 mm, head length 0.35 mm, head width 0.5 mm, cephalic index (head length / head width ration) 0.7, thorax length 0.3 mm, thorax width 0.48 mm, abdomen length 1.2 mm and abdomen width 0.68 mm. Preocular slit short and broad forming a notch, head with occipital and ocular blotches heavily chitinized. Antennae were invisible. The caudal pair of legs were relatively sturdy and longer than two other pairs. The abdomen had 8 abdominal segments with abundant spins. By searching of all avian ectoparasite studies in Iran, such a louse with above mentioned characterizations has not been reported, so far. So, on the basis of valid identification keys and also after email communication with one of turkey famous parasitologist (AhmetOnurGirisgin) it was revealed that the present louse is*Colpocephalumfregili* species.
Keywords:*Colpocephalumfregili*, Magpie, Iran

Comparative evaluation of therapeutic effect of sulfadiazine-trimethoprim, oxytetracycline, enrofloxacin and florfenicol on *Staphylococcus aureus*-induced arthritis in broilers

Marzban M[1], Mosleh N[1], Shomali T[2*], Namazi F[3]
[1]Department of Clinical Studies, [2]Department of Basic Sciences, [3]Department of Pathobiology, School of Veterinary Medicine, Shiraz University, Shiraz, Iran
Corresponding author's email: tshomali@shirazu.ac.ir

Objective: Lameness is a major cause of low bodyweight and performance in poultry industry. *Staphylococcus aureus* is the main bacterial agent of lameness. The most common feature of infection with this organism is tenosynovitis and arthritis which is mostly seen in tibiotarsal and hip joints. As far as we know, treatment of this disease is challenging and no previous study has been conducted to clarify comparative efficacy of different antibacterial agents. To this end, we evaluated the efficacy of four commonly used antibiotics on experimental arthritis due to sensitive *S. aureus* in broiler chickens.
Materials & Methods: Seventy, 8-week old broiler chickens were randomly divided into 7 groups and treated as follows: 1) negative control, 2) vehicle control, 3) sulfadiazine-trimethoprim (30 mg/kg), 4) oxytetracycline (0.1 mg/L D.W), 5) florfenicol (20 mg/kg), 6) enrofloxacin (10 mg/kg) and 7) positive control. To induce arthritis, 1 ml of 1.2×10^{10} CFU/ml of *S. aureus* in TSB culture medium was injected in right tibiotarsal joint of chickens in groups 3 to 7 on day 4 post challenge. Antibacterial treatment was initiated that lasted for 5 consecutive days. Birds of all groups were evaluated for clinical signs on a daily basis. At the end of the experiment, birds were weighted and clinical scoring was used for determination of the severity of arthritis. After slaughter, gross lesions of tibiotarsal and hip joints were evaluated and mucin clot was performed in tibiotarsal joint. Moreover, histopathological evaluation of tibiotarsal joint was performed.
Results & Conclusion: It seems that among the tested antibiotics, sulfadiazine-trimethoprim had the best outcome, although none of the antibiotics appreciably ameliorated femoral head necrosis due to experimentally induced *S.aureus* arthritis.
Key words: *S.aureus* arthritis, antibiotics, efficacy, broiler chickens.

Evaluation of toxicity due to high dose or long term administration of sulfadimethoxine-trimethoprim on liver and kidney function biochemical parameters of broilers

Mobarraei N[1], Mosleh N[2*], Ashrafi[1] M, Shomali[1] T
[1]Department of Basic Sciences, [2]Department of Clinical Studies, School of Veterinary Medicine, Shiraz University, Shiraz, Iran
Corresponding author's email: nmosleh@shirazu.ac.ir

Objective: Potentiated sulfonamides such as sulfadimethoxine-trimethoprim are largely used in the poultry industry. Considering the risk of drug poisoning in birds, the aim of this study was to evaluate the effects of higher doses and/or prolonged use of sulfadimethoxine-trimethoprim on blood biochemical factors such as: AST, LDH, CK, albumin, total protein as well as uric acid and urea as markers of liver and renal function, respectively.
Materials & Methods: In this study, 75 broiler chickens were randomly divided into seven groups. The control group (C), drug control (receiving the drug as recommended on the label; DC), T1 and T2 groups (receiving the recommended dose with 2 and 3 times the recommended time, respectively), T3, T4 and T5 groups (receiving 2.5, 5 and 10 times the recommended dose, respectively). The chickens in each group had free access to formulated diets. At the end of the treatment period, blood samples were collected from chickens and serum samples were collected to measure serum biochemical factors by special commercial kits. Data were analyzed by SPSS software.
Results & Conclusion: The results showed a significant increase in the activity of serum AST in T3, T4 and T5 groups compared drug control group without a significant difference in the level of CK activity.. LDH activity significantly decreased in T1, T2 and T5 groups compared to the drug control group. Therefore, it seems that sulfadimethoxine- trimethoprim use both at high dose or prolonged use can adversely affect liver function. On the other hand a significant increase in the level of serum uric acid in T4 and T5 groups compared to drug control indicates a renal damage. In conclusion, sulfadimethoxine-trimethoprim use at high doses or prolonged period adversely affects liver and kidney function in broilers.
Keywords: Potentiated sulfonamide, Broilers, Liver, Kidney.

Effect of Dietary Supplementation of Mint and Turmeric Powder on Serum Enzyme Activities and Proteins Alterationsin Broiler Chicks

Samoei A[1], Jahanian E[2*]

1. Department of Animal Science, Khorasgan (Isfahan) Branch, Islamic Azad University, Isfahan, Iran

2. Department of Animal Sciences, College of Agriculture, Isfahan University of Technology, Isfahan, Iran

***Corresponding author's email:elaheh.jahanian@gmail.com**

Objectives: the present study aimed to investigate the effect of dietary supplementation of mint and turmeric powder on serum enzyme activities and proteins alterations in broiler chicks.

Materials & Methods: a total of 360 Ross broiler chicks were randomly allotted to 6 dietary treatments with 4 replicates of 15 birds each. Dietary treatments were included control (no additive), 0.5% mint, 0.5% turmeric, 0.25% mint and 0.25% turmeric, 0.5% mint and 0.5% turmeric, and 200 mg/kg vitamin E. To determine serum protein concentrations and enzyme activities by electrophoresis on tapes of gelled cellulose-acetate and by auto analyzer set, two birds of each cage were randomly selected and bled at 28 and 42 d of age, respectively.

Results & Conclusion: Results showed that inclusion of 0.25% turmeric and 0.25% mint powder significantly ($P<0.05$) increased serum total protein and globulin concentrations in both at 28 and 42 d of age. However, dietary treatments had no significant effect on serum albumin concentration at 28 and 42 d of age. Additionally, serum aspartate amino transferase activity was markedly ($P<0.001$) depressed by dietary supplementation of combination of 0.5% turmeric and 0.5% mint powder in broiler chicks at 28 and 42 d of age. Similarly, dietary supplementation of 0.5% turmeric powder led to a significant ($P<0.05$) decrease in alanin amino transferase activity only at 42 d of age. Administration of combination of 0.25% turmeric and 0.25% mint powder tended ($P=0.83$) to decrease serum alkaline phosphatase activity at 28 d of age. However, serum lactate dehydrogenase activity was not affected by dietary inclusion of turmeric and mint powder either alone or in combination. Briefly, results indicated that dietary supplemental turmeric and mint especially at 0.25% level can increase serum proteins concentration and improve serum enzyme activities of hepatic health indices in broiler chicks.

Keywords: Turmeric, mint, enzyme activities, proteins alterations, broiler chicks

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Effect of Different Levels of Mint and Turmeric Powder on Some Serum Biochemical Parameters in Broiler Chicks Fed on Diets Enriched bySoybean Oil

Samoei A[1], Jahanian E[2*]

1. Department of Animal Science, Khorasgan (Isfahan) Branch, Islamic Azad University, Isfahan, Iran

2. Department of Animal Sciences, College of Agriculture, Isfahan University of Technology, Isfahan Iran

***Corresponding author's email:elaheh.jahanian@gmail.com**

Objectives: the present study was conducted to evaluate the effect of different levels of mint and turmeric powder on some serum biochemical parameters in broiler chicks fed on diets enriched bysoybean oil**.**

Materials & Methods: a total of 360 Ross broiler chicks were randomly allotted to 6 dietary treatments with 4 replicates of 15 birds each. Dietary treatments were included control (no additive), 0.5% mint, 0.5% turmeric, 0.25% mint and 0.25% turmeric, 0.5% mint and 0.5% turmeric, and 200 mg/kg vitamin E. At 28 and 42 d of age, two randomly selected birds were bled and sera samples were collected to determine cholesterol, triglyceride, HDL and malondialdehydeconcentrations and total antioxidant capacity.

Results & Conclusion: Results showed that dietary inclusion of 0.5% turmeric and 0.5% mint powder highly significantly ($P<0.05$; $P<0.01$) decreased serum cholesterol concentration either 28 or 42 d of age. Furthermore, triglyceride content was significantly ($P<0.05$) decreased by supplemental 0.25% mint and 0.25% turmeric powder in broilers only at 42 d of age. However, dietary supplementation of combination of turmeric and mint powder at 0.5% level led to a significant ($P<0.05$) increase serum HDL content only at 42 d of age. Although dietary additionalturmeric and mint powder at0.5% markedly ($P<0.001$) depressed serum malondialdehyde level in broiler chicks, the lowest malondialdehyde concentration was obtained in birds given 200 mg/kg at 28 and 42 d of age. In addition, the highest serum total antioxidant capacity ($P<0.01$; $P<0.001$) was observed in broilers given by vitamin E at 200 mg/kg as compared to control birds in both 28 and 42 d of age. Briefly, results indicated that dietary inclusion of turmeric and mint combination could improve serum antioxidant indices and biochemical parameters of broiler chicks.

Keywords: Turmeric, mint, serum biochemical parameters, broiler chicks

Effect of *Escherichia coli* Challenge on Performance and Immunological Responses in BroilerChicks

Jahanian E[1*], Mahdavi AH[1], Asgary S[2], Jahanian R[1]
1. Department of Animal Sciences, College of Agriculture, Isfahan University of Technology, Isfahan, Iran
2. Isfahan Cardiovascular Research Center, Isfahan Cardiovascular Research Institute, Physiology Research Center, Isfahan University of Medical Sciences, Isfahan, Iran
***Corresponding author's email: elaheh.jahanian@gmail.com**

Objectives: The current study was undertaken to evaluate the effect of *Escherichia coli*O78:K80 challenge on total performance and immunological responses in broiler chicks.
Materials & Methods: A total 96 Ross 308 broiler chicksof 7 d of age were randomly attributed among 2 experimental treatments with 4 replicates of 12 birds each. Experimental treatments consisted of a control group and broilers challenged with*Escherichia coli* O78: K80,which given orally at 1×10^9cfu/ml from 7 to 28 d of age. To determine immunological responses, the chicks were vaccinated with Gumboro,Newcastle, and infectious bronchitis viruses at 13, 18 and 18 d of age, respectively. Then, two randomly selected birds of each cage were bled 7 days after each vaccination and sera samples were collected.
Results & Conclusion: Results showed that challenging with *Escherichia coli* O78: K80 had no significant effect on feed intake throughout the experiment. However, weight gain was markedly (P<0.0001) decreased in broilers given *Escherichia coli*. Similarly,*Escherichia coli*contamination resulted in worsen (P<0.0001) feed conversion ratio during the trial period. Moreover, antibody titer against Newcastle disease virus was significantly (P<0.05) lower in birds contaminated with*Escherichia coli*O78: K80. Also, *Escherichia coli*challengeresulted in noticeable (P<0.001) decline in antibody titer against infectious bronchitis virus. Furthermore, exposure to *Escherichia coli* significantly (P<0.01) depressed antibody titer against Gumboro disease virus. In general, results indicated that contamination with *Escherichia coli* O78: K80 decreased growth performance and depressed immunological responses in broiler chicks.
Keywords:*Escherichia coli*, performance, immunological responses, broiler chicks

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Effect of supplemental mannan-oligosaccharides on performance and immunological responses of *Escherichia coli*-challenged laying hens

Jahanian R
Department of Animal Sciences, College of Agriculture, Isfahan University of Technology, Isfahan, Iran
Corresponding author's email: r.jahanian@gmail.com

Objectives: The study presented here was conducted to investigate the effect of dietary mannan-oligosaccharides (MOS) supplementation on performance and antibody production titers in laying hens exposed to *Escherichia coli* challenge.
Materials & Methods: A total of 180 Hy-Line W-36 laying hens, 55 wk of age, were randomly assigned into the 5 dietary treatments with 6 replicates of 6 hens each. Experimental diets consisted of 5 graded levels (0, 0.05, 0.1, 0.15, and 0.2% of diet) of MOS. Trial lasted 77 d including 7 d for adaptation and 70 d as the main experimental period. All of the diets were isocaloric and isonitrogenous, and had the similar nutrient composition. Feed and water were provided *ad libitum* throughout the trial period. Performance parameters were measured during two 35-d periods. In addition, antibody titers against Newcastle disease virus (NDV) and sheep red blood cell (SRBC) were assessed after respective inoculations.
Results & Conclusion: Results showed that dietary treatments had no marked effect on feed intake and egg weight during the first and second 35-d periods. On the other hand, hen-day egg production and egg mass were significantly ($P < 0.05$) increased as the result of supplementation of 0.1 or 0.15% MOS into the diets of *Escherichia coli*-challenged laying hens during the first 35-d period. In addition, dietary supplementation of 0.1 or 0.15% MOS improved ($P < 0.05$) feed conversion ratio during the first 35-d period. Contrast comparisons showed that compared with control hens, supplemental MOS resulted in 9.8% and 8.1% increases in egg production and egg mass, respectively, throughout the trial period. Dietary treatments had no marked impact on antibody responses against NDV at d 6 and 12 post vaccination. Of course, single-degree of freedom contrasts showed that supplemental MOS tended ($P = 0.0637$) to increase NDV antibody titer at d 12 post vaccine inoculation. In contrast to NDV, primary antibody response against SRBC was increased ($P < 0.05$) by dietary supplementation of 0.05% MOS. The present findings suggest that dietary supplementation of 0.1 and 0.15% MOS could improve reproductive performance and feed conversion efficiency in *Escherichia coli*-challenged laying hens. In addition, supplemental MOS revealed a potent impact on antibody responses.
Keywords: laying hens, mannan-oligosaccharides, prebiotics, *Escherichia coli*, humoral immunity, performance

Extruded soybean meal improves performance and carcass yield in broiler chicks

Jahanian R[1]*, Ajilchi P[2]
[1]Department of Animal Sciences, College of Agriculture, Isfahan University of Technology, Isfahan, Iran ; [2]Yasna Mehr Co., Tehran, Iran
***Corresponding author's email:r.jahanian@gmail.com**

Objectives: The present study was performed to investigate the effect of extrusion processing of soybean meal (SBM) on performance and carcass characteristics of broiler chicks.
Materials & Methods: A total of 180 one-day-old Ross 308 broiler chicks were used in a completely-randomized design with 6 replicates of 15 chicks each. Two experimental diets were prepared based on corn-SBM or corn-extruded SBM and fed to the birds during a 42 d feeding trial. Experimental diets were isocaloric and isonitrogenous. The birds had free access to feed and water throughout the duration of study. At the final day of trial (d 42 of age), 5 randomly-selected birds per replicate were slaughtered to evaluate internal organ weights and carcass characteristics.
Results & Conclusion: Results showed that dietary replacement of extruded SBM caused significant ($P < 0.01$) increases in average daily gains throughout the experimental period. Except starter period, average daily feed intake was greater ($P < 0.05$) in chicks fed diet containing extruded SBM at remaining experimental periods. Moreover, inclusion of extruded SBM into the diet improved feed conversion efficiency during starter, finisher ($P < 0.01$), and entire ($P < 0.05$) trial periods. The final weight of broilers fed on extruded SBM-containing diet was more than 9% greater than birds fed on corn-SBM-based diets. Although the relative weights of liver and heart weren't affected by dietary treatments, using extruded SBM resulted in a marked ($P < 0.05$) decrease in the relative pancreas weight. Interestingly, the birds fed on diet containing extruded SBM had a lower ($P < 0.01$) abdominal fat percentage. Moreover, utilization of extruded SBM increased breast and carcass yields. The present findings indicate that extrusion of SBM could improve its nutritive value for broiler chicks. Dietary inclusion of extruded SBM could increase weight gain and feed efficiency, and reduce abdominal fat pad in broiler chicks.
Keywords: broiler chicks, soybean meal, extrusion processing, growth performance, abdominal fat, carcass characteristics

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Application of ideal protein and amino acids concept in feed formulation for broiler chicks and its effect on performance parameters

Jahanian R[1]*, Zare GR[2]
[1]Department of Animal Sciences, College of Agriculture, Isfahan University of Technology, Isfahan 84156-83111, Iran; [2]Mazraeh Feed Manufacturer, Isfahan, Iran
***Corresponding author's email: r.jahanian@gmail.com**

Objectives: The present study was conducted to investigate the effect of feed formulation based on ideal protein and amino acids (AA) concept on performance and some blood biochemical metabolites in broiler chicks.
Materials & Methods: A total of 225 day-old Ross 308 broiler chicks were randomly distributed among 5 replicate pens of 3 dietary treatments with 15 chicks per replicate. Dietary treatments consisted of a control diet and diets in which crude protein (CP) level was decreased by 5 or 10%. Dietary CP levels were 22.5, 21.375, and 20.25% for control, moderate- and low-CP diets during the starter period (1-21 d of age). The respective values were 20, 19, and 18% during grower period (22-42 d of age). Experimental diets were isocaloric and had a similar composition for the most limiting AA. The birds had free access to feed and water throughout the duration of study. At the final day of trial (d 42 of age), 3 birds per replicate were selected on random and blood samples were collected to measure some biochemical parameters.
Results & Conclusion: Results showed that reduction of dietary CP level caused a numerical ($P = 0.08$) increase in feed intake during grower period. On the other hand, average daily weight gain wasn't different among different dietary CP groups throughout the duration of study. Reduction of dietary CP level by 10% caused an increase ($P < 0.05$) in feed conversion ratio during grower period. Although reducing dietary CP level had no effect on serum cholesterol content, a 10% decrease in dietary CP level resulted in a significant ($P < 0.05$) increase in serum triglyceride level. Dietary CP level had no marked impact on serum concentrations of low- and high-density lipoproteins. Interestingly, reduction of dietary CP level, while maintaining a constant level of the most limiting AA, caused a linear decrease in serum uric acid content. The present findings indicate that dietary CP level can be reduced by about 10% while the most limiting AA are provided in the sufficient quantities. Moreover, serum uric acid was decreased as the result of reducing dietary CP level.
Keywords: broiler chicks, ideal amino acids, dietary protein level, performance, uric acid

Effect of dietary genistein supplementation on immune functions and serological indices in broiler chickens

Safdari P, Jahanian R*
Department of Animal Sciences, College of Agriculture, Isfahan University of Technology, Isfahan Iran
***Corresponding author's email: r.jahanian@gmail.com**

Objectives: The present study was conducted to evaluate the effect of supplemental genistein on immunological responses and some blood biochemical parameters in broiler chicks.
Materials & Methods: A total of 192 day-old Ross 308 broiler chicks were randomly assigned into the different experimental diets with 4 replicates of 12 birds each. Dietary treatments consisted of different levels (0, 20, 80 and 320 mg/kg of diet) of supplemental genistein. The trial lasted 42 d and birds had free access to water and to the experimental diets throughout the trial period. Antibody titers against different viral and non-viral antigens were measured after respective inoculations. In addition, 2 birds per pen were selected on random and blood samples were collected to measure serum lipid metabolites.
Results & Conclusion: The results showed that dietary supplementation of 80 and 320 mg/kg of genistein increased ($P < 0.01$) primary antibody response to sheep red blood cell (SRBC) compared to the control birds. During the secondary response, however, the greatest ($P < 0.05$) SRBC antibody titer was observed for the birds supplemented with genistein at the level of 320 mg/kg. All supplemental genistein levels improved ($P < 0.001$) antibody production titer against infectious bronchitis virus. Although Newcastle antibody titer wasn't influenced by dietary treatments, dietary genistein supplementation at the levels of 20 and 80 mg/kg increased ($P < 0.05$) antibody titers to influenza and Gumboro disease viruses. Dietary inclusion of genistein decreased serum concentrations of triglycerides ($P < 0.05$), cholesterol and low-density lipoproteins ($P < 0.01$), while increased serum high-density lipoproteins ($P < 0.01$) level. The present findings show that dietary genistein supplementation not only promote antibody responses, but also has a beneficial impact on blood lipid profile in broiler chicks.
Keywords: broiler chicks, isoflavonoids, genistein, immunological responses, serum cholesterol, lipoproteins

Isolation and molecular characterization of Newcastle disease virus Circulating in broiler flocks of Northwest Iran

Nouri Keyvan[1*], Naorozi Bahman[2], Naorozi Hassan[2], Zamani Kamiar[2]
1. *Veterinarian of Private Part, Kamyaran City, Kamyaran, Iran*
2. *Student of Veterinary Medicine, Islamic Azad University, SanandajBranch, Sanandaj, Iran*
Corresponding author's email:keyvannouri85@gmail.com

Objectives: Newcastle disease is one of the most devastating avian viral diseases and causessubstantial economic losses in the poultry industry worldwide. Virulence of Newcastle disease virus(NDV) is mainly determined by the amino acid sequence of the fusion (F0) protein cleavage site.During the last 12 months an outbreak of Newcastle disease affected poultry flocks in most regions ofIran. This study was conducted to isolate and molecularly characterize NDV isolates obtained fromthe recent outbreak of broiler flocks in Northwest Iran.
Materials & Methods: Many broiler flocks with various mortality ranges submitted for diagnosis,were subjected to clinical and necropsy examination. The vvNDV was suspected in most cases. Atotal of seven brain samples were collected and homogenized. The homogenized samples wereinoculated in embryonated chicken eggs. The allantoic fluids were examined by hemagglutination(HA) assay followed by Hemagglutination inhibition (HI) assay using NDV positive sera. RNA frompositive allantoic samples were extracted and subjected to reverse transcription-polymerase chainreaction (RT-PCR) using specific primers amplifying the cleavage site of fusion gene. The PCRproducts were sequenced and analyzed.
Results & Conclusion: All seven virus isolates from flocks with viscerotropicvelogenic NDpresentation were positive in HA and HI assays. RT-PCR assay proved the identity of all isolates.Analysis of the deduced amino acid sequences of the F protein cleavage site showed that all recentisolates were velogenic strains. They had the amino acid sequence 111-GRRQKRF-117 in their F0cleavage site. This investigation showed the circulation of vvNDV in broiler flocks of Northwest Iran.
Keywords: Newcastle disease virus, NDV, Viscerotropicvelogenic NDV (vvNDV), Cleavage site,outbreak, Broiler flocks

Survey of the poultry carcass seizing causes in 7slaughterhouses located in Kermanshah province, Iran

Nouri Keyvan[1*], Naorozi Bahman[2], Naorozi Hassan[2], Zamani Kamiar[2]
1. Veterinarian of Private Part, Kamyaran City, Kamyaran, Iran
2. Student of Veterinary Medicine, Islamic Azad University, Sanandaj Branch, Sanandaj, Iran
Corresponding author's email:keyvannouri85@gmail.com

Objectives: Poultry has become one of the most important sources of animal protein for the human consumption. Many pathologic conditions lead to so veterinary inspection at the time of slaughter may cause total or partial seizing of carcass or viscera. Because of the importance of the different causes of carcass rejection in slaughterhouse, this survey tend to verify the main causes of carcass rejection in 5 industrial slaughterhouses located in Kermanshah province, Iran. In this survey, meat-inspection data are used as a source ofinformation and have an important role in epidemiology and preventive veterinary medicine.
Material & methods: The result of post-mortem inspection leading to total or partial rejection of carcasses were observed between July08, 2014 to July08, 2015, in 7 industrial slaughterhouses in the Kermanshah province, Iran. In this period, official post-mortem inspection records includes total number of slaughtered birds, total number of carcass seizing and causes of seizing of these industrial poultry slaughterhouses in the region wereobtainedfromtheveterinaryservicesoftheprovince.
Results & conclusion: In this survey, 27834502 birds were slaughtered. As a result of inspections, 90238 (0.33%) birds were seized. Causes of carcass seizing in industrial poultry slaughterhouses in the Kermanshah province were Cachexia 41.21% , Septicemia 22.61% , Ascites 12.56% , Bruising 7.39% , CRD/Bronchitis 6.02% , Over scalding 4.42% , Poisoning 3.82% , Arthritis/Synovitis 1.78% , Marek's disease 0.19%. Many factor such as diet, breed and management of poultry may be associated with the presence or absence of pathological lesions and could cause carcass seizing during the inspection process. In the present survey the most prevalent causes of seizing were Cachexia and Septicemia. In industrial poultry production chicken feeding is considered with careful attention, therefore cachexia is mainly secondary to disease and pathologic conditions, and it is unlikely to be a result of malnutrition. In conclusion, prevention and disease control an important role in increasing efficiency of poultry meat production.
Keywords: Carcass Seizing, Slaughterhouse, Poultry, Kermanshah Province

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Seroprevalence survey on Reovirus infection of broiler chickens in Western Provinces of Iran

JafarTaifebagerlu[*1], Alireza Talebi[1], Saeid Dehghani Asl[2]
1. Department of Clinical Sciences, Faculty of Veterinary Medicine, UrmiaUniversity, Urmia, Iran.
2.Graduatedstudent of veterinary medicine, Faculty of Veterinary Medicine, IslamicAzadUniversity,Urmia,Iran.
Corresponding author's email:J.tayefeh@urmia.ac.ir

Objectives: In this study, seroprevalence of avian reovirus (ARV) infections in broiler chicken farms in west Azerbaijan province were investigated. ARV infections cause serious economic losses in the poultry industry.Avian reoviruses associated with different poultry disease including viral arthritis/tenosynovitis, stunting syndrome, respiratory disease, immunosuppression, and malabsorption syndrome. The most significant disease directly caused by ARV in chickens and turkeys is arthritis/tenosynovitis, that can be caused by different serotypes of avian reovirus.. Swelling and inflammation of the tarsometetarsal joint and the tendon sheath nearby may result in lameness and acute paralysis The disease is egg-transmitted and is of shortduration except when lateral transmission in a flock is prolonged.
Materials & Methods: Blood samples (n = 300) were collected from 20broiler flock andSerum was obtained by centrifugation of blood samples at 1700 x g for 10 min. Serum sample were tested for REO antibodies using a commercially available REO Enzyme Linked Immunosorbent Assay kit (IDEXX REO Ab Test ELISA Kit).
Results & Conclusion: According to this study the prevalence of Reovirus infection was 97.3%. of Broiler flock.Antibody titers in the positive samples collected from broiler ranged from 850 to 16558 (average 4882).The resistance of the virus could be one of the reasons for such a high prevalence.These results show high prevalence of reovirus antibody in broiler farms and highlight the need for regular implementation of vaccination programs to combat the reo infection in northwest of Iran.
Keywords: Reovirus, ELISA, Broiler , West Azerbaijan

The effect of feeding mustard seed meal (Sinapis arvensis) on thyroid hormones and liver enzymes in Japanese quails (Coturnix coturnix japonica)

Neda Eskandarzade. Sajjad Mohebali, Mohammad Salarmoeini, zeinab Forghanifard
z.forghanifard_vet@yahoo.com

Objectives: This study was conducted to investigate the effect of wild black mustard seed meal on liver enzymes (ALT, AST), ALP and thyroid hormones (T_4 and TSH) in Japanese quail. We also studied the ability of $FeSO_4$ treated mustard meal to improve the possible adverse effects of mustard meal on liver and thyroid.
Materials and Methods: 420 7d old Japanese quails were randomly assigned to control and 6 treatment groups consisting of 60 replicates. The experimental procedure was applied on 28 quails (4 quails randomly selected in each group) for 28 days during which control group received basic diet with no mustard meal whereas the test groups (No. 2, 3, 4) respectively received mustard meal (5, 10 and 15 %) and test groups (No. 5, 6, 7) respectively received $FeSO_4$ (1%) treated mustard meal (5, 10 and 15%) additionally to basic diet.
Results and Conclution: Results showed that there is no significant difference in T_4, TSH, ALT, AST and ALP concentrations between groups fed mustard meal and treated mustard meal ($P>0.05$). The most increase in liver enzymes in this experiment was in group No.7 (15% treated mustard meal) spontaneously accumulation of iron was seen in those quail liver. It was concluded that 15% mustard meal and 10% treated mustard meal could be included in the quail diet successfully without any damage to liver and thyroid gland so support the hypothesis that quails are resistant to high level of glucosinolate in mustard seed meal compare to another poultry.
Keywords: Mustard, $FeSO_4$, T_4, TSH, Quail

The evaluation of antiviral effects of aqueous extracts of two types of onion (red and yellow) against avian influenza virus subtype H9N2

Saba Ahmadi[1], Zolfaghar Rajabi[1]*, Mehdi Vasfi Marandi[2]
[1] Avian Diseases Division, Department of Clinical Sciences, Faculty of veterinary medicine, University of Tabriz.
[2] Department of Avian Diseases, Faculty of veterinary medicine, University of Tehran.

Abstract: Avian influenza as a contagious viral disease in domestic poultry occurred during 1994-1999 in most of the countries as well as Iran. Virus's antigenic shift and drifts make it difficult to prevent its outbreak and produce effective medicines and vaccines for treatment and prevention; therefore scientists are very interested in combining complementary medicine with a modern one to provide plant base medicines. Onion is one of the plants used from the ancient times both as food and medicine. It has particular health benefits to cure diseases. This study's purpose was to evaluate the antiviral effectiveness of two types of onion aqueous extracts, Red and Yellow, against avian influenza virus subtype H9N2*in in-vitro and in-vivo*. Ninety 10 – day oldembryonated eggs were used to study their anti-viral effects. Each group included three subgroups and one control group. For in-vitro study; 0.1 ml of mixture of the virus and onion aqueous extract (red or yellow) was inoculated in the embryonated eggs in different intervals: 2, 8 and 24 hours. Forin - vivo study; 0.1 ml of onion aqueous extract (red or yellow) was inoculated in contaminated embryonated eggs in different intervals: 1, 6 and 24 hours. HA assay and mortality rate were recorded for the evaluation. Although the precise mechanism of action has not been detected, nevertheless it was proved that, both red and yellow onion aqueous extract have reasonable antiviral effects on H9N2 influenza virus, but red onion extract has greater antiviral effect than yellow extract.
Keywords: Onion, Aqueous extract, Antivirus, Avian Influenza, H9N2

*Spondylitis*in broiler breeder farm in west Azerbaijan province: A case report

Jafar Taifebagerlu[1],AlirezaTalebi[1] ,Arian Sharifi[1], Fatemeh delkhosh-kasmaie[2],Asghar morvaridi[2]

1. Department of Avian Diseases, Faculty of Veterinary Medicine, Urmia University, Urmia, Iran.

2. Department of Pathology, faculty of veterinary medicine, urmia university, urmia,Iran.

Corresponding author's email:J.tayefeh@urmia.ac.ir

History and clinical signs: outbreaks of lameness involved one broiler breeder Farm in west Azerbaijan province. 10-week-old male birds only displayed posture involving resting on the hocks and paresis to complete posterior paralysis.

Necropsy findings: Nodular masses were observed on the caudal thoracic vertebral column (T5–T7) immediately anterior to the kidneys in all birds. Advanced vertebral osteomyelitis lesions correlated well with the "hock-sitting" postureand posterior paresis / paralysis. Sagittal sections of the vertebral columns revealed vertebral osteomyelitis with necrosis and abscessation, leading to compression of the overlying spinal cord.

***Histological* examination**: Sections of the affected spinal columns were also submitted for histopathological examination. Severe osteomyelitis was seen, affecting the marrow cavity of the vertebrae. mononuclear inflammatory cell infiltration consisting of lymphocutes in piamatter of spinal cord and edema in white matter.pathological injuries was limited because we have acute spondylosis.

Keywords:*Spondylitis, Broiler breeder, Kinki back, West Azerbaijan Province*

Evaluation the effects of some anticoccidial drugs in Ross broiler chickens

Nouri Keyvan[1*], Naorozi Bahman[2], Naorozi Hassan[2], Zamani Kamiar[2]

1. Veterinarian of Private Part, Kamyaran City, Kamyaran, Iran

2. Student of Veterinary Medicine, Islamic Azad University, Sanandaj Branch, Sanandaj, Iran

Corresponding author's email:keyvannouri85@gmail.com

Objectives: To determine evaluation the effects of some anticoccidial drugs on broilers performance and the amount of oocyst output, a total number of 1200 day-old Ross308 broiler chickens were randomly divided to 6 groups of 200 birds (2 replicates). The group were: 1. which did not receive any coccidiostatic drug or oocyst (negative control), 2. which did not receive any coccidiostatic drug but was challenged with oocyst (positive control), 3. Amprolium, 4. Semduramycin, 5. Maduramycin and 6. Salinomycin.

Materials & Methods: Treatment groups received the related coccidiostates from the beginning of the rearing period up to 3 days before slaughter (42 days of age). Birds in all groups (except group 1), were challenged with 3 × 104 E.tenella at day 20. Five days post challenge, fecal samples were taken and oocyst per gram of feces determined for five consecutive days. By weighing the chicks and their consumed feed, mean of body weight (BW), weight gain (WG), feed intake (FI) and feed conversion ratio (FCR) of all groups determined weekly.

Results & Conclusion: In comparison with positive group, all treatment groups had significantly difference in BW, WG, FI, FCR and oocyst output. Comparing the performance of treatment groups showed partial improvement of BW and FCR by Amprolium and Semduramycin that wasn't significant with the others. In addition these two coccidiostats reduced the output if oocyst in comparison with maduramycin and salinomycin significantly. These findings indicate that several available compounds are effective at controlling coccidiosis and improving the performance parameters in broiler chickens and Amprolium supplemented group had the best performance.

Keywords: Ross broiler, E.tenella, Anticoccidial drug

THE EFFECT OF *THYME EXTRACT* (*THYMUS VULGARIS*) ON IMMUNE ORGANS OF BROILER CHICKENS

Forough Talazade[1*] ,Mansoor Mayahi[1] , Safiyeh Zeinali Lathari [2] ,Vahid Asgari[2]
[1]*Clinical Sciences Department, Faculty of veterinary Medicine, Shahid Chamran University, Ahvaz, Iran*
[2]*Graduated from Faculty of veterinary Medicine, Shahid Chamran University, Ahvaz, Iran*
ftalazade@gmail.com

Objectives: A research study was conducted to evaluate the effects of of *thyme* extract *(Thymus vulgaris)* on spleen, and Bursa of Fabricius weights in broiler chickens. **Materials & Methods**:A total of 135 day-old broiler chicks were purchased and divided into 3 equal groups and each group to 3 subgroup of 15 chicks. Chicks of group 1 and 2 received 0.1% and 0.2% of *thyme* extract respectively in drinking water all period of experiment. Chicks of group 3 were kept as control group and did not receive *thyme* extract.
Results & Conclusion: Data of the weights of bursa and spleen showed that different dosages of thyme extract did not result in any significant changes in the relative weights of these lymphoid organs in all groups, but thyme extract at 0.2% concentration increased weight of spleen, and Bursa of Fabricius in broiler chickens. Beneficial effects of herbal extracts in animal nutrition may include the stimulation of appetite and feed intake, the improvement of endogenous digestive enzyme secretion, activation of immune response and antibacterial, antiviral, antioxidant and antihelminthic actions. Isoprene derivatives, flavonoids, glucosinolates and other plant metabolites may affect the physiological and chemical function of the digestive tract. The stabilizing effect on intestinal microflora may be associated with intermediate nutrient metabolism (1,2, 3).
Keywords: *thyme* extract, poultry chicks, weight of Bursa of Fabricius, weight of spleen

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Virulence determination of poultry *Escherichia coli* isolates by intratracheal route

Gholami F, Peighambari SM

Department of Avian Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran

Objectives: Colibacillosis is one of the most prevalent bacterial diseases in poultry. The aim of this study was to determine virulence of three *E.coli* isolates from avian colibacillosis with the use of intratracheal model on 12 day-old chicks.
Materials & Methods: This study was carried out by using 96 mixed-sex Ross broiler chicks. Each group consisted of 24 chickens for each isolate that was divided into two groups of 12 chicks for each inoculum. Two control groups of 12 chicks in each were assigned. In the first three groups, each one consisting of 24 chicks, the inoculum was prepared in 2 dilutions of 10^7 and 10^9 CFU/ml, and equal dosage of each dilution was inoculated intratracheally to birds in each group. PBS was inoculated to the fourth group intratracheally and the fifth group did not receive anything. The chickens were monitored every 12 hours after challenge and the mortality was recorded. Six days after challenge, all chickens were euthanized and the lesions were scored. Samples were taken from heart and liver and cultured on McConkey agar. The virulence of each isolate was determined using the scoring system.
Results & Conclusion: Regarding total scores in 3×10^9 CFU/ml inoculum dose, the isolates 12 and 50 were significantly different from each other and other groups, While no significant difference was seen between isolate 71 and control groups ($P > 0.05$). In 3×10^7 CFU/ml inoculum dose total score, the isolate 50 and other groups were different significantly($P<0.05$), and no significant difference between the isolate 71 and 12 and control groups was seen ($P > 0.05$). This study increased our knowledge about the virulence of three isolates from avian colibacillosis in Iran using the intratracheal model in 12 day-old chickens.
Keywords: *Escherichia coli*, virulence, intratracheal model, poultry, Iran

Serological survey of avian Metapneumovirusin broiler chickens of West of Golestan province in Iran

Ghadimi ,F[1]* . Shateri ,s[2] . Hosseini Aliabad S A.[3]
1.Graduated Dvm, Faculty of veterinary, Islamic Azad University, Babol Branch, Babol, Iran;2.Department of Avian Diseases, Faculty of veterinary medicine, Islamic Azad University, Babol Branch, Iran;3.Veterinary Department , faculty of Agriculture, Islamic Azad University, Chalus, Iran
Corresponding author's email: farhad.ghadimi.vet@gmail.com

Objectives: The purpose of this study was to determine the prevalence of avian Metapneumovirus antibodies in broiler flocks in west of golestan province.
Materials & Methods:A total of 94 blood samples were collected from 4 broiler chicken flocks (aged between 25 and 42 days) that had symptoms including swelling infraorbital sinuses, Oculonasal discharges, trachealrales and coughing. The serum samples were tested for the presence of antibodies against avian Metapneumovirus by using a commercial enzyme linked immunosorbentassay kit(Biochek,ART,Netherland) which was able to determine antibodies against A and B subtype of avian Metapneumovirus.
Results & Conclusion: The results of this study showed that out of 94 serum samples, 30 samples were positive(31.92%) and44 samples were suspected(46.81%)and20sampleswerenegative(21.27%) ofavian Metapneumovirus antibodies. All broiler chickens hadn't been vaccinated avian Metapneumovirus and these results indicate that broiler chickens are exposed to this important poultry pathogen. Future work may and should include the use of molecular methods and isolation of the virus. Isolation of avian Metapneumovirus will allow the possibility of controlling the disease.
Keywords: Avian Metapnemovirus, Broiler, ELISA, Golestan, Iran

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Cadmium and lead Concentrations in Testicular Tissue and their Associations withTestosterone Concentrations in Male Chickens

Hamid Hassani
Departement of Animal Sciences, Faculty of Agriculture and Natural Resources, Karaj Branch, Islamic Azad University, Karaj, Iran
Email: mdfhassani@gmail.com

Objectives: From the publications reviewed, it appears that environmental toxicants, especially heavy metals and organic chemicals of synthetic and microbiological origins, disrupt hormone production and action in the mammalian testes. Endocrine disruption leads to disorders of testicular function and thereby compromises the normal phenotypic development of male sexual characteristics, initiation and maintenance of spermatogenesis. The toxicants also induce impairment of testicular cells function, testicular histology, and sperm cells function directly.The aim of this study was to investigate the relationship between the concentrations of Cd and Pb in the testicular tissue and serum testosterone.
Materials & Methods: Blood and testis were collected from 40 male chickens(Ross breed, 20-wk). The testis samples were analyzed for the presence of Pb and Cd by using a Flame Atomic Absorption Spectrophotometer (FAAS). Serum concentration of testosterone were measured by ELFA. Statistical analysis of the results was carried out using the SAS software.
Results & Conclusion:
The mean concentration of Cd and Pb in testicular tissue was 0.02 (µg/g) and 0.09 (µg/g), respectively. The mean testosterone level was 0.5 ng/ml. According to the results, positive correlation between Pb and testosterone (r=0.399) was found. It is known that Cd and Pb are due to hormonal imbalanceand these metals can affectspermatogenesis, steroidogenesis, and red-ox system. In conclusion, data from the present study showed a significant relationship betweenPband testosterone.
Keywords: Cadmium, Lead, Testosterone, Male chicken

Determination of calcium and phosphorus concentration in the seminal plasma and their relationships with semen characteristics in rooster

Abolfazl Ghaniei[1], SeyedSajjad Babaeimarzangou[1*], Mohsen Eslami[2], Hamed Mirzaei[2]
[1]Department of Poultry Diseases,[2]Department of Theriogenology, Faculty of Veterinary Medicine, Urmia University, Urmia, Iran.
[*]Corresponding Email: Sajadbabaei999@yahoo.com

Objectives: The present study was conducted to evaluate the concentrations calcium (Ca) and phosphorus (P) and their relationship with semen characteristics such as forward progressive motility (FPM) and viability in rooster.
Material and Methods:A total of 10 broiler breeder males were used in the presentexperiment. Semen was collected from roosters twice a week by abdominal massage method and FPM and viability were assessed in samples. By centrifugation, seminal plasma was separated form spermatozoa and kept in -20^0 C til minerals measurement. Concentrations of Ca and P were measured by commercial kit.
Results and conclusion: Result revealed that the mean concentrations of Ca and P were 6.52±0.40(mg/dl), 3.89±0.18 (mg/dl) in samples, respectively.Our result showed that significant and positive correlation between concentrations of Ca and FPM($r=0.57$; $P < 0.05$) and viability ($r= 0.058$; $P< 0.05$). For better judgment and according to spermatozoa motility percentages, samples were classified to 3 groups with excellent (samples with higher than 90% FPM, n=31), good (samples with FPM between 70-80%, n=9) and fairFPM (samples with FPM less than 70%, n=11). In excellent group; the correlation coefficients between FPM and Ca and P concentrations were 0.13 and 0.10 that there were not significant ($P> 0.05$).Moreover, in good group; the correlation coefficient between FPM and Ca and P concentrations were 0.51 and 0.11 that there were not significant ($P> 0.05$). In fair group; the correlation coefficient between FPM and Ca and P concentrations were-0.18 and 0.11 and the results were as the same as the excellent group.It can be concluded that higher FPM was correlated with Ca concentrations in rooster. Further research is needed in this area to evaluate the semen enrichment with calcium and other minerals on quality of semen during in vitro storage.
Keywords: calcium, phosphorus, FPM, semen, rooster

Effect of Palmitoleic acid on quality of rooster semen during chilled storage

Mohsen Eslami[1], Abolfazl Ghaniei[2],Hamed Mirzaei[1] , SeyedSajjad Babaeimarzangou[2]*
[1]Department of Theriogenology, [2]Department of Poultry Diseases, Faculty of Veterinary Medicine, Urmia University, Urmia, Iran.
[*]Corresponding Email: Sajadbabaei999@yahoo.com

Objectives: The practice of artificial insemination is now widely utilized in fowl.The present study was designated to evaluate the effect of palmitoleic acid on the quality of rooster semen stored at 4^0 C.
Material and Methods: Semen was collected from ten roosters twice a week.Good quality ejaculates were pooled and after dilution,the semen was enriched with 0 (control), 0.25 (P 0.25)and 0.5 (P 0.5) millimolar palmitoleate. Forward progressive motility and viability and concentrationsof malondialdehyde (MDA) were evaluated in seminal plasma and spermatozoa at 0, 24 and 48h.
Results and conclusion: Motility was 77.5±1.04, and 69.5±2.32% at 24h and 49.33±1.36 and 43.00±2.08% at 48h in P0.25 and control, respectively ($P<0.02$).There were no significant differences in MDA levels of the seminal plasma among groups, while the MDA concentrations of the spermatozoa were lower in P 0.25 and P 0.5 compared to the control group at 24 and 48h ($P<0.002$). In conclusion, enrichment of rooster semen with palmitoleate would exert beneficial effects on the semen quality during coldstorage.
Keywords: Palmitoleic Acid, Malondialdehyde,motility,Semen, Rooster.

Effect of rooster semen enrichment with oleic acid onthe quality of semen during the*in vitro*storage

Mohsen Eslami[1], Abolfazl Ghaniei[2], Hamed Mirzaei[1] , SeyedSajjad Babaeimarzangou[2]*

[1]Department of Theriogenology, [2]Department of Poultry Diseases, Faculty of Veterinary Medicine, Urmia University, Urmia, Iran.

***Corresponding Email: Sajadbabaei999@yahoo.com**

Objectives: It is mandatory to useefficient semen storage techniques in order to prevent the reduction of fertilizing ability of stored semen.The present study was designated to evaluate the effect of oleic acid on the rooster semen quality stored at 4^0 C for 48h.

Material & Methods: Semen was collected from ten roosters twice a week. Good quality ejaculates were pooled and after dilution, the semen was enriched with 0 (control), 0.25 (O 0.25), 0.5 (O 0.5) millimolar oleate. Forward progressive motility and viability of spermatozoa were evaluated at 0, 24 and 48h. Moreover, malondialdehyde (MDA) levels were measured in seminal plasma and spermatozoa at the mentioned time points.

Results and conclusion: Motility was 80.00±2.08, and 66.00±2.30% at 24h and 57.33±2.18 and 41.33±2.02% at 48h in O0.25 and control, respectively ($P<0.001$).MDA concentrations of seminal plasma and spermatozoa were lower in oleate treated groups in comparison with control group at 24 and 48h ($P < 0.05$).In conclusion, rooster semen enrichment with low doses of oleate would exert beneficial effects on the quality of semen during cooledstorage.

Keywords: oleic acid, lipid peroxidation,MDA, semen, rooster

The effect of two different programs of vaccination with foreign Infectious Bursal Disease vaccine on systemic antibody responses against Newcastle vaccine in chickens

Mayahi M. [1],Talazadeh F. [1*], Mousavi S.H. [2]

1-Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Iran

2- Graduated from Faculty of veterinary Medicine, Shahid Chamran University, Ahvaz, Iran

ftalazade@gmail.com

Objectives: The objective of this study was to investigate two different programs of vaccination against Infectious Bursal Disease on systemic antibody responses against Newcastle vaccine in chickens. **Materials & Methods**: In the present study, 180 day-old broiler chicks were purchased and for determination vaccination time by Deventer formula, thirty chicks randomly were bled and remaining chicks divided into 3 equal groups and each group divided into 2 equal subgroups. On the basis of ELISA results and vaccines instruction, chicks of group 1 were vaccinated once by intermediate Gumboro vaccine manufactured by Lohman Germany company at 16 days by drinking water. Chicks of group 2 were vaccinated twice by intermediate Gumboro vaccine manufactured by Lohman Germany company at 16 and 23 days by drinking water. Chicks of group 3 were kept as unvaccinated control group. At 9 days old, all 3 groups were vaccinated by B1 Newcastle vaccine via eye drop and mixed killed Newcastle and Avian Influenza vaccines inoculated at neck back subcutaneously. The blood samples from 16 birds of each group were collected at 42 days of age. Mean blood serum titer against Newcastle vaccine were measured by HI test. **Results & Conclusion:** The results showed that there is significant difference between group 1 and 2 , and mean of HI titer in group 1 was less than group 2. This study showed that two times vaccination with foreign intermediate Gumboro vaccine had no negative effect on immune response against Newcastle vaccines.

Keywords: Gumboro vaccine, Newcastle vaccine, Immune response, Immunosuppression

Molecular analysis of *Cryptosporidium* species in industrial and native broilers in Guilan province

Shahbazi P*, Aligolzadeh A
Department of Pathobiology, Faculty of Veterinary Medicine, University of Tabriz, Tabriz, Iran
Corresponding author's email: p.shahbazi56@gmail.com

Objectives:*Cryptosporidium* is an intercellular protozoan parasite which usually infects the gastrointestinal epithelial cells of a wide range of vertebrates and it is known as one of themajor factors causing diarrhea in human andlivestock which also has zoonotic importance. Documented data shows three species of *cryptosporidium*as the causeof Cryptosporidiosis in poultry hosts which includes:*Cryptosporidium Baileyi*,*Cryptosporidium Meleagridis* and*Cryptosporidium Gali*.
The current study investigatedthe molecular detection of *Cryptosporidiumspp.* in industrial and native broilers in Guilan Province according to the Nested-PCR method using 18srRNA locus gene.
Material & Methods: In this study, 100 fecal samples of the industrial and native broilers in Guilanprovince were collected inWinter, 2014and Spring, 2014. At first, all of the samples were studied microscopically after staining by modified Ziehl–Neelsenmethod,then Molecular detection of *Cryptosporidium* species processed using Nested-PCR procedure.
Results & conclusion: According to the results, from the examined 100 fecal samples, 8% were positive for *Cryptosporidiumspp.*Infection in microscopic and molecular methods. In addition, statistical analyses showed no significant relation between infection and season of sampling ($P>0.05$) but there was a significant difference between the infection rate in the two age categories of over 25 days and under 25 days ($P<0.05$).This study increased our knowledge about the relationship between age and cryptosporidiosis prevalence in broilers.

Ovarian adenocarcinoma with transcoelomicmetastasis in a native chicken

FarjanikishG[1], BeiraghiA*[2], PirzadiA[1]
[1]*Department of pathobiology, School of Veterinary Medicine, Lorestan University, Khorramabad, Iran*
[2]*Student of Veterinary Medicine, School of Veterinary Medicine, Lorestan University, Khorramabad, Iran*
***Corresponding author's email: amirhoseinbeiraghi@yahoo.com**

Objectives: Tumors in poultry are mostly caused by infection with avian herpes, leukosis and retroviruses and thus most studies on avian tumors have been focused on those with viral etiology, probably due to their economic importance and also because they serve as a model for human cancer studies. Adenocarcinomas in poultry are among the groups of tumors of unknown etiology.
Materials & Methods: An adult native chicken maintained was presented for post-mortem examination with a history of sudden death. A detailed postmortem examination was conducted and the gross findings were recorded.For microscopic investigations, appropriate samples were obtained from the tumoral mass and, fixed in 10% neutral-buffered formalin, dehydrated in graded ethanol, cleared in xylene, and embedded in paraffin wax. Sections in 5-µm thicknesses were stained by hematoxylin and eosin, and studied microscopically.
Results &Conclusions: On necropsy, the mass, which weighed 90 g was found attached to the ovary. Thepedunculated, firm, greyish-white fleshy growths were found attached to the serosal surface of the ovary. The walls of the oviduct and intestine also had nodules with variable sizes on the serosal surface.
On histopathological examination of the tissues, the ovarian growth consisted of a tubular pattern lined by a single layer of cuboidal eosinophilic epithelial cells with medium to large vesicular nuclei, single nucleolus and moderate amounts of grey, finely granular cytoplasm. Very few mitotic figures were observed. The intestinal and oviductalnodules on the serosal layer were composed of a tubulo-acinar arrangement of low columnar epithelial cells similar to those observed in the ovarian tissue. Metastatic abdominal adenocarcinomas may originate from either the ovary or the oviduct, and their differentiation from oviductal and ovarian carcinoma can be difficult. Both oviductal and ovarian tumors can implant widely throughout the abdominal cavity.
Keywords: Ovarian adenocarcinoma, metastasis, histopathology, native chicken

Significant statistical data from pericarditis complication histopathologic patterns in broilers

Navid Dehghan[1] *, BehzadMirzayi[2], Loqman Akradi[3],ArinaVeysi[1],HooravashJamishidi[1]
1dvm student in Veterinary medicine, Islamic Azad University of Sanandaj,2dvm Graduate in veterinary medicine, Islamic Azad University of Sanandaj;3Associate professor in Department of Pathology, Islamic Azad University of Sanandaj
Corresponding author's email: navid.dehghan1993@gmail.com

Objectives: pericarditis is a widespread loss in the poultry that have general bacterial infections. In commercial poultry (the inflammation) is especially common in Escherichia coli infections and stems from respiratory diseases. There are Heterophile and fibrin cells in early lesions. Then lymphoid and macrophages cells are more and the most prevailing. If the chicken remains alive, fibrous tissue and adhesion is built.
Materials & Methods: During a four-month period from March 2014 to June 2015 in Sanandaj Par slaughterhouse; 897 hearts, out of 1392 removed hearts of broilers, had pericarditis complications. After diagnosis, hearts that had lesions were recorded and then tissue samples were taken in proper proportions from positive cases with macroscopic lesions, and were fixed in 10% formalin, and, under Hystotecnic normal procedures, paraffin blocks were prepared. The 5-micron sections were prepared and were dyed with H & E method. Histopathological examination was performed by Olympus light microscope.
Results & Conclusion: Pericarditis complication has different patterns histopathologically and needed analysis have been conducted from taken images, but in statistical classification and tables, the dominance of each of the patterns were considered on each slide so that a true understanding of the diagnosis can be expressed. In the 897 Pericarditis recorded samples (64.43%) in the slaughterhouse, different histopathological patterns were observed under microscope. Among which 422 pericarditis cases (47.04%), 158 cases of vascular congestion (17.50%), 105 cases of myocardial hyperemia (11.70%), 105 cases of myocarditis (11.70%), 54 cases of endocarditis (6.02%) were observed. The pericarditis is a symptom of bacterial infections such as Pullorum, Colibacillosis, listeriosis, CRD, typhoid and the etc. and myocarditis is a symptom of viral and bacterial infections including Pullorum, CRD, typhoid (a granulomatous) and endocarditis is observed in Bacterial infections such as staph, Streptococcus and rarely Pasteurella.
Keywords: heart, pericarditis, broilers, pathology, listeriosis

Ascites syndrome and its causative agents in diagnosis of pathological lesions in broiler chickens and its relation to geographical location area in Sanandaj

Behzad Mirzayi[1]*, Loghman Akradi[2], Amjad Farzinpour[3]
[1]DVM Graduated, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.[2]Department of Pathology, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.[3]Department of poultry diseases, Faculty of Veterinary Medicine, Kurdistan University, Sanandaj, Iran.

Objective: accumulation of fluid in abdominal cavity (alot of yellow fluid is present in the abdominal cavity), Hydropericardium (accumulation of fluid in pericardium)and enlargement of heart due to dilation of right atrium and right ventricle is the sign of ascites. Broiler chickens are sensitive to ascites because of fast growth, high feed efficiency and massive pectoral muscles that all of them increase demand of oxygen. Metabolism in broilers that they have rapid growth and high feed efficiency cause ascites in broiler chickens.
Material & Method: during the 4 month from March 2015 to June 2015 in Par slaughterhouse of Sanandaj from 1392 hearts of broilers that they out, 17 hearts had ascites, After diagnosis hearts with lesions rejected and then from positive cases withmacroscopic lesions tissue sampling were done in appropriate size and they fixed in Formalin 10% and paraffin blocks prepared by histotechnique methods. At last 5µ sections prepared and they were stained with H&E method. Histopathological examination was performed by Olympus light microscope.
Result & Discussion: In ascites disorder (macroscopic) that ascites of carcass was definited, patterns like fat aggregation or glycogen aggregation was observed. 11 cases of them (64.70%) reported from South of Sanandaj and 6 cases of them (35.29%) was from North of Sanandaj. But in studied samples from East and West of Sanandaj no case reported. Height and additional amount of Furazolidone in diet of broilers, poisoning with sodium, feeding broilers with large amount of seed cabbage oil and oily turnip containing Erucic acid, fat poisoning and poisoning with DiphenylCholoride can be a causative agents of ascites.
Keyword: Heart, Ascites, Broiler chickens, Pathology, sanandaj

Prevalence of pathologic lesions in the heart of broiler chickens to observation of lymphoied tumors due to marekdiseas.

Behzad Mirzayi[1]*, Loghman Akradi[2], Amjad Farzinpour[3]
[1]DVM Graduated, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.[2]Department of Pathology, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.[3]Department of poultry diseases, Faculty of Veterinary Medicine, Kurdistan University, Sanandaj, Iran.
Corresponding author's email: mirzayi.behzad@gmail.com

Objective: Marek disease is one of the most common lymphoprolifrative disease in poultry that known by infiltration of mononuclear cells to one or more number of peripheral nerves, Gonads, Iris, Skin and various internal organs. Endothelial tumors occur individually in poultry but sometimes cause severe mortality in herd. This tumors can cause by Leucos virus/sarcoma. Lymphoied tumors due to Marek disease is the most common tumor of heart in poultry. fibrosarcomaandRhobdomyosarcoma have been reported rarely.
Material & Method: during the 4 month from March 2015 to June 2015 samples were taken from Slaughterhouse of sanandaj and randomly 140 hearts of delivered broilers to Slaughterhouse selected. The age of these broilers were 7 weeks or a little more and their average weight were about 2.5Kg. After diagnosis hearts with lesions were rejected, then among positive cases with macroscopic lesions sampling in appropriate size was done and they fixed in Formalin 10% and paraffin blocks prepared by histotechnique methods. At last 5µ sections prepared and stained with H&E method. Histopathological examination was done by Olympus light microscope.
Result & Discussion: contemporary with this study a similar survey were done on liver to examine Marek disease in Par Slaughterhouse of Sanandaj. From 70 livers that they selected 6 cases were diagnosed with Marek that among thesesampels, 4 cases (67%) had focal lesions and 2 cases were seen with diffuse lesions and 8 cases were diagnosed as suspected. According to these explanations and existence of Marek disease in the region there is no case reported of Marek.
Keywords: Heart, Marek disease, Broiler chicken, Pathology, lymphoied tumors

Prevalence of pathological lesions of round heart disease (RHD) in 7 weeks broiler chickens

Behzad Mirzayi[1]*, Loghman Akradi[2], Amjad Farzinpour[3]
[1]DVM Graduated, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
[2]Department of Pathology, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.[3]Department of poultry diseases, Faculty of Veterinary Medicine, Kurdistan University, Sanandaj, Iran.
Corresponding author's email: mirzayi.behzad@gmail.com

Objective: Round Heart Disease (RHD) affected poultry over 4 months age and Known with sudden death. The heart of affected broilers become pale and large. The apex of affected heart may be sunk, fibrils all over the myocardium are swollen and granular and have very small vacuoles. In sever lesions maybe the vacuoles be merge and make an obvious vacuity around the nucleus, that leaves an obvious cell membrane around the fibrils. Vacuoles and their vacuity indicative of fat. The nucleuses may be formed by marginal chromatin and a prominent nucleoli.
Material & Method: For this purpose during 4 months from March 2015 to June 2015 sampling from slaughterhouse was done and randomly 140 hearts from broilers that they deliveredto slaughterhouse selected. The age of these broilers were 7 weeks or a little over 7 weeks and their weights were about 2.9 Kg. After diagnosis the hearts with lesions rejected and then from positive cases with macroscopic lesions sampling was done in appropriate size and fixed in Formalin 10% and paraffin blocks prepared by histotechnique methods. At last5µ sections prepared and they were stained with H&E method. Histopathological examination was performed by Olympus light microscope.
Result & Discussion: Round Heart Disease(RHD) of poultry affected the age of over 4 months, but in this study despite of the low average age of herd, degenerative lesions were seen. Heart was pale and because of hypertrophy,left ventricle obviously become large and the apex of left ventricle is larger than its base. From 14 cases that they were studied 7cases (5%) had degenerative lesions.
Keywords: Heart, RHD, Broiler chicken, Pathology, sudden death

Histopathological analysis of *Cryptosporidium* species in industrial and native broilers in *Guilan* province

Shahbazi P*, Ghasemi M, AshrafiHelan J, Nematollahi A.
Department of Pathobiology, Faculty of Veterinary Medicine, University of Tabriz, Tabriz, Iran
Corresponding author's email: p.shahbazi56@gmail.com

Objectives:Cryptosporidiosis is one of the most prevalent parasitic infections in domesticated, caged, and wild birds and the parasite has been reported in more than 30 avian speciesworldwide. There are currently three accepted avian species of *Cryptosporidium*, *C. baileyi*, *C. meleagridis*and*C. galli*, based on biological and genetic differences. Of these, only *C. meleagridisis* known to infect humans. Recent studies have identified six novel avian genotypes: goose genotypes I and II, the duck genotype, two unnamed genotypes in Canada geese (*Brantacanadensis*), and the Eurasian woodcock (*Scolopaxrusticola*) genotype.Unlike mammalian which represent mainly enteric disorder, poultry afflicted with either enteric or respiratory forms of the cryptosporidiosis.
Material & Methods: This study was undertaken to histopathological analysis of *cryptosporidium* species from native and industrial broiler chickens of Gilan province in Iran.In this study,100 samples were collected in the winter, 2014 and spring,2014. At first, 150 tissue slides were prepared.Type of tissue samples in understudy cases was pleura, trachea, Fabricius bursa and intestine. All ofsamples were studied microscopically after staining byHematoxylin-Eosin method, then positive samples were stained by Ziehl-Neelsenstaining method.
Results & Conclusion:According to the results, *cryptosporidium spp.*infection was seen in trachea, bursa and intestine and infection rate was 27/7%.*C. meleagridis*hasinfected the gastro-intestinal tract of birds and *C. baileyi*infectionresulted in parasitisation of epithelial cells of the bursa of Fabricius, ileum, large intestine and trachea.
Microscopical lesions:enterocyte detachment, small-intestinalhyperemia and villus atrophy, crypt hypertrophy, microvillus atrophy or hypoplasia, bursal epithelial cell hypertrophy and hyperplasia, purulent inflammation, lymphofollicular atrophy, and necrosis of the bursa of Fabricius. Hyperemia in trachea andepithelial cell metaplasia andhyperplasia were seen.
Keyword: Cryptosporidiosis, Broiler chickens, Histopathology, Guilan

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Prevalence of hemorrhage in the heart of Broilers and determination the histopathological patterns associated with it

Sana Ghaffari[1*],Behzad Mirzayi[2],Loghman Akradi[3]
[1]DVM Student, Faculty of Veterinary Medicine, Tabriz University, Tabriz, Iran.
[2]DVM Graduated, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
[3]Department of Pathology, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
Corresponding author's email: sana_ghafarf@yahoo.com

Objective: In some of poultry disease petechia to extensive hemorrhage is prevalent. The pathogenesis of these hemorrhage is less studied. These hemorrhage may be due to bone marrow aplasia or the lack of coagulation factors caused by deficiency of vitamin K. fragility of capillary due to mycotocxicosis and deficiency of vitamin E/selenium has been mentioned as a cause of hemorrhage. In poultry that infected by systemic bacterial or viral infections, hemorrhage may be caused by diffuse intravascular coagulation(DIC) and microthrombosis was seen in both type of infection. The possibility of direct endothelial vascular destruction must be considered.
Material and method: during a period of 6 month from March 2015 to September 2015 at Par slaughterhouse of Sanandaj from 1392 removed hearts of broilers, 247 hearts had hyperemia. After diagnosis, the hearts with lesionswere rejected. Tissue sampling was done in appropriate size from positive cases with microscopic lesions and fixed in Formalin 10%. Then paraffin blocks were prepared with histotechnique methods. At last 5µ sections prepared and they stained with H&E method. Histopathology examination was performed by Olympus light microscope.
Result & Discussion:from 247 cases(17.74%) with hyperemia that they rejected in slaughterhouse different histopathological patterns were seen in microscopic observation that 111 case of them were vascular hyperemia(44.93%), 49 cases of endocarditis(19.83%), 25 cases of pericarditis(10.12%), 25 cases of myocarditis(10.12%), 13 cases of myocardial hemorrhage(5.26%), 12 cases of myocardial hyperemia(4.85%) and 12 case of intravascular hemolysis(4.85%). These hemorrhage can be cause by diseases such as: Colibacillosis, Cholera, Newcastle, Viral hepatitis and ….
Keywords: Hemorrhage, Heart, Pathology, Broiler chickens, Slaughterhouse

Relation between Cardiomyopathy of broiler chickens and weights according to removed hearts in Par slaughterhouse of Sanandaj

MiladMoradi[1*],Milad Bayncho[1],Mojtaba Tushmalani[1], BehzadMirzayi[2], LoghmanEkradi[3]

[1] DVM student , Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran
[2]DVM Graduated, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran
[3]Department of Pathology, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
Corresponding author's email:miladmoradi57@yahoo.com

Objective: heart is a muscle with chambers and valves that its function like a twin pumps to transmit Hemoglobin containing oxygen to a complex of channels (arteries) in small packages (Red blood cells). Like other muscles heart muscle react to the increase of activity with hypertrophy. Cells of heart muscle have no hyperplasia or division. Hypertrophical cardiomyopathy is caused by increasing of heart pumping and forms a heart with a massive muscle mass. Macroscopic changes are caused in two statues.Ifhypertrophy isdue to the increase of blood volume exchange it can cause the complete enlargement of heart. Adding sarcomers to the end of the myofibrils makes them longer and causes enlargement of heart, mass of heart increases but the thickness of heart muscle will not increase.
Material & Method: during a 3months from April 2015 to June 2015 in Par slaughterhouse of Sanandaj 21525 hearts of broiler from 10 farms around Sanandaj were studied. From 1392 hearts that they were out 226 hearts had hypertrophy and they had the signs of cardiomyopathy, that the maximum observation of this disorder was 49 cases in the weight of 3100 g and the minimum was 1 case in 2600 g.
Result & Discussion: there is a direct relation between weight of herd and the existence of cardiomyopathy in Par slaughterhouse of Sanandaj, whenever the weight of herd increases the rate of rejected cases will increase too. According to statistical data of the herd weight of the farms, whenever the herd weight decreases the cardiovascular diseases will decrease too . According to these explanations and statistics, farms should deliver the broilers to slaughterhouse in the low weight.
Keywords: Heart, Cardiomyopathy, Broiler chickens, Sanandaj

Anesthesia and analgesia in Chough following intranasal administration of diazepam, midazolamand xylazine with ketamine: Clinical evaluation

Abbas Raeisi[1] , Majid Taati[2] ,Milad Rostami[3]* , Elham Hajitabar[3] , Amir Hosein Beyraghi[3]
[1]Department of Clinical Sciences, Faculty of Veterinary Medicine, Lorestan University, Khorramabad, Iran., [2]Department of Physiology, School of Medicine, Lorestan University of Medical Sciences, Khoramabad, Iran, [3]Student of Veterinary Medicine, Faculty of Veterinary Medicine, Lorestan University, Khorramabad, Iran
***Corresponding author's email:Milad_rostami@live.com**

Inhalation anesthesia and injectable anesthesia have limitations for using in avian veterinary practice. Intranasal administration of anesthetics has been utilized as a safe and effective route for sedation and restraint in many birds and animal species. The aim of this study is comparison of sedation efficacy in intranasal administration of xylazine, diazepam and midazolam with ketamine in Chough. Seven healthy adult nondomesticated Choughs of both sexes, weighing 232.54±14.5 gram were anesthetized by xylazine (8 mg/kg) ,diazepam (8mg/kg), midazolam (8mg/kg), with Ketamine(30 mg/kg) With an interval of one week .The onset time, the duration of dorsal recumbency time, complete recovery time and quality of anaestesia were recorded and analyzed. The onset time in xylazine- ketamine, diazepam-ketamine and midazolam- ketamine was (6.6±3.6 min) , (2.2±0.84 min) and (4±2.9 min).The duration of dorsal recumbency timein xylazine- ketamine, diazepam-ketamine and midazolam- ketamine was (37.6±30.34), (27.2±12.03) and (27.4±7.1) respectively. Complete recovery time in these experimental protocols was (14.2±8.5 min) for xylazine- ketamine, (30.0±12.39 min) for diazepam-ketamine and (18.2±7.5 min) for midazolam- ketamine. Percent quality of anesthesia in all protocols was 100%. This study showed that using of xylazine,diazepam and midazolam combined with ketamine could provide reliable sedation in Chough intranasaly. However all of anesthesia protocols are not perfect for surgical procedures.
Keywords: anesthesia, intranasal, xylazine , diazepam , midazolam , Chough

The First Report of *Laemobothrion maximum* (Phthiraptera) fromCommon Buzzards(*Buteo buteo*) in Iran

ShokraniHR[1*], YavariSh[1], NorouzianH[2], RaeisiA[2], RostamiM[3]
[1]Department of Pathobiology, Faculty of Veterinary Medicine, Lorestan University,Khorramabad, Iran; [2]Department of Clinical Sciences, Faculty of Veterinary Medicine, Lorestan UniversityKhorramabad, Iran; [3]Student of Veterinary Medicine, Faculty of Veterinary Medicine, Lorestan UniversityKhorramabad, Iran
***Corresponding author's email:**shokrani.hm@lu.ac.ir

Objectives: The Common buzzard (*Buteo buteo*)has a wide geographical distribution in Iran andtypically measures between 51 and 57 cm in length with a 110 to 130 cm wingspan.There are few studies on the louse species of wild birds in Iran.This study was carried out on twoCommon buzzardsthat were referred for treatment to the veterinary faculty, University of Lorestan, Khorramabad, Iran.
Materials & Methods: The External examinationsrevealed presence of some large-sized lice,measuring about 1 cm, in the feathers of the birds. The parasites were preserved in a tube containing 70% ethanolsolution. Each Lousewas mounted in Canada balsam after being cleared in 10% KOH. Subsequently,eachslidewas carefully examined under a light microscope.
Results & Conclusion: The parasites were identified as *Laemobothrion maximum*by microscopical examinationon the basis of morphology and size of the louse.The lice infection rate was not high in these two birds. The louse species collected from wild birds in Iran are limited. To our knowledge, this study representsthe first record of *Laemobothrion maximum* on the Common buzzard *(Buteo buteo)* in Iran.
Keywords: chewing lice*, Laemobothrion maximum*, Common buzzard, Khorramabad

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Prevalence of increasing cardiovascular diseases by increasing average age of broiler chickens & its economic importance by using statistic data from removed hearts in Par slaughterhouse of Sanandaj

Mojtaba Tushmalani[1*],MiladBayancho[1],Milad Moradi [1],Loghman Ekradi[2],Behzad Mirzayi[3]
[1] DVM student , Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran
[2]Department of Pathology, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
[3]DVM Graduated, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran
Corresponding author's email: mdvm.t71@gmail.com

Objective: the shape of birds heart is conical and it is larger and thinner than mammalian heart . Left ventricle of birds heart forms by a very thick and massive wall, while this formation in mammals show ventricular hypertrophy. Regardless of substantial problems, heart diseases reduce the blood flow to the heart muscle and other muscles of the body and hypocalcemia of heart muscle may create degenerative changes in myocardium that causes insufficiency at circulation of blood in the heart and disability of heart in its activities. This may cause problems and diseases and this is one of the main reasons to remove the heart and carcass in broiler slaughterhouse.
Material & Method: during the 3 months period from April 2015 to June 2015 in Par slaughterhouse of Sanandaj. 21525 heart of broilers were studiedand broiler chickens from 46 to 60 days were evaluated. among rejected cases that they reported 1.7% of total slaughtered were 46 days and 11.6% of them were 57 days.
Results &Discussion: there is a direct relation between age of herds and the removed hearts and their carcasses in Par slaughterhouse of Sanandaj, So when the age of herds isless the rate of rejected cases also will be less. According to the statistical data when the herd is younger the cardiovascular diseases is less and removing of carcasses will also be less and this will be economical. According to these information and statistics farms should deliver the broiler to slaughterhouse at a young age.
Keywords: Heart, Age, Broiler chickens, Slaughterhouse, Sanandaj

The effects of thyme essential oil on shelf life ofvacuum-packaged chicken breast meat

Piruz S, Khani MR*
Department of Food Science and Technology, Shahr-e-Qods Branch, Islamic Azad University, Tehran,Iran
***Corresponding author's email:khanidvm@gmail.com**

Objectives: Chicken meat is a very popular food commodity worldwide, and its consumption has increased over the last decades in many countries. However, they are susceptible to bacterial growth and oxidative processes due to their nutritional composition. Therefore, an effort should be exerted to apply some agents to maintain microbial and chemical quality and extend shelf-life of meat.This study was conducted to determine antibacterial and antioxidant activity of thyme essential oil on vacuum-packed chicken breast, in order to improve the shelf-life and sensory quality of chicken meat.
Materials & Methods: Essential oil (EO) of thyme*(Zatariamultiflora)* was prepared and added at two concentrations of 0.1% and 0.3% (v/w) to fresh chicken breast. After marinating, samples werepackedunder vacuum and stored at refrigeration temperature of 4°C for 12 days. Also, two control samples were prepared by chicken breast without marinatingtreatment, from which,onewas packed under vacuum and other without vacuum, but both stored in above conditions. The influence of the combined effect of thyme EO and packaging on chicken breast stability were evaluated andcompared by bacteriological analysis (by countingtotalmesophilic aerobicbacteria, psychrotrophic bacteria, and*Escherichia coli*) and by monitoring physicochemical properties including pH, thiobarbituric acid (TBA), and colorimetric changes and their sensory characteristics in different storage periods (0, 3, 6, 9, and 12d).
Results & Conclusion: The results showed that the thymeEO reduces the total and psychrotrophic bacterial counts, and this effect were significantly ($P < 0.05$) increased at thehigher concentration of essential oil. Also theeffect of thyme EO was significant ($P < 0.05$) and remarkable, not allowing any *E.coli* to grow in the marinated samples. It was found that there were significant ($P < 0.05$) differences between physicochemical properties of treated samples with thyme EO compared to the controls andlower TBA values obtainedin samples containing 0.3% EO and control vacuum packageduring the storage time, respectively.Colorimetric and organoleptic evaluations of the samples on different days were significant($P < 0.05$) and high concentration of thyme EOhad unsatisfactory effects on some sensory characteristics such as taste and odor. According to the obtained results it can be concluded that the marinating chicken breast meat with0.3% of thyme EO could extend the shelf-life for at least 2-3 days at 4°C compared to packaging alone.
Keywords: chicken breast, thyme essentialoil, vacuum packaging, shelf life, bacteriological and physicochemical properties

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Effect of Food Intake onthe Expression of Peroxisome Proliferator-Activated Receptor□ Gene inthe F1 Follicle ofBroiler Breeder Hens

Tavangarrad N, HassanpourH, Kadivar A, Sheikhahmahi A
Department of Basic Science, Faculty of Veterinary Medicine, University of Shahrekord
Shahrekord, Iran
Corresponding author's email:nilooveterinarian@gmail.com

Objectives: The purpose of study was to investigate the involvement of peroxisome proliferator-activated receptor (PPAR)in the reduced egg production of broiler breeder hens with unfit food intake. Gene expression of this receptor was evaluated in the granulosa cells of F1 follicle by quantitative real time PCR.
Materials & Methods: Arbor acres broiler breeder hens (30 weeks old) were allocated to three different levels of feed intake: (FI): Control, FI-20% (20% less than control feed intake) and FI+40% (40% more than control feed intake) with three replicates per group (10 birds / replicate; 30 birds / group) for 30 days. The amounts of Feed intake and egg production were recorded every day. At day 30 of experiment, 12 birds from each group were killed. Ovarian follicles were dissected from the ovary and measured in order to identify the largest follicle (F1) in each ovary, according to hierarchical follicles weight. The granulosa layer was separated from F1 follicle.Total RNA from the granulosa layer of F1 follicle was extracted and its concentration was measured and qualified by spectrophotometry. Total RNA was reverse transcribedinto cDNA. The levels of PPARγ and β-actin (Housekeeping gene) transcripts were determined by real-time reverse transcriptase (RT)–PCR using SYBR Premix Ex. The used specific primer of PPARγ and β-actin were designed with Primer-Blast. The amplification of genes was done in three replicates for each sample of granulosa cells. One microliter cDNA was added to the 10 µl of SYBR Mix and 0.6 µM of each specific primer in a total volume of 20 µl. The mRNA level of PPAR gene relative to β-actin was estimated for each sample in the experimental groups by following formula: $E_{\beta\text{-actin}}^{(Ct\ sample)} / E_{target}^{(Ct\ sample)}$. Then, the comparison was statistically done between groups.
Results & Conclusion:High feed intake significantly ($p< 0.05$) increased body weight in FI+40% group, while low feed intake reduced this parameter in FI-20% group as compared to control. The egg production significantly decreased ($p< 0.05$) in two treated groups as compared to control. The gene expression of PPARγ was lower in the F1 follicles of FI+40% group than control and FI-20% groups ($p< 0.05$).It is concluded that decreased mRNA level of PPARγ in F1 follicles of broiler breeder hens is the evidence of involvement of this receptor in the disorders due to high food intake.
Key words: PPAR, Granulosa cells, Food intake, Body weight, Egg production,Broiler breeder hens, Real Time PCR

Serologic survey of hemorrhagic enteritis virus infection in some turkey flocks

Rafighi E[1,2], MadaniSA[1,2], Haddadian M[1,2], PeighambariSM[1]
[1]Department of Avian Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran[2]Central Veterinary Laboratory, Tehran, Iran.
Corresponding author's email: EhsanRafighi@ut.ac.ir

Objectives: Despite the growing population of commercial turkeys in Iran, there is scarce information about turkey diseases in the country. Haemorrhagic enteritis is an infectious viral disease of turkeys. It is a highly contagious adenovirus infection which can cause severe haemorrhagic enteritis and mortalities in the turkey industry.
Materials & Methods: In the present study, 447 turkey serum samples were collected from 25 turkey flocks located in eight different provinces including: Tehran, Qom, Isfahan, Hamedan, Markazi, Semnan, Mazandaran, and Ghazvin. The serum specimens were evaluated for the presence of antibodies against Haemorrhagic Enteritis Virus (HEV) using commercial enzyme linked immunosorbent assay (ELISA).
Results & Conclusion: Eleven (44%) flocks and 213 (47%) serum samples from seven provinces were positive. All the specimens from the only sampled flock in Semnan were within the suspected range. It can be concluded that HEV is prevalent in Iranian turkey flocks and further investigations and measurements are required to control the infection in the country.
Keywords: Turkey, Haemorrhagic Enteritis Virus, ELISA, Serology.

Study the effect of physical size of sodium zeolite A on health and growth indices of broilers fed rations contaminated with aflatoxin

Parizadian B[1]*, Shams Shargh M[2]
[1]Assistant Professor, Lorestan University, [2]Associate Professor, Faculty of Animal Science, Gorgan University of Agricultural Sciences and Natural Resources
***Corresponding author email**: parizadian.b@lu.ac.ir

Objectives: This experiment was conducted for determining of the effect of physical size of sodium zeolite A on health and growth indices of broilers fed rations contaminated and noncontaminated with aflatoxin.
Materials and Methods: A total of 512 Ross 308 seven-day old male broilers were randomly allocated to eight dietary treatments. The diet of the broilers contaminated with aflatoxin (1 mg /kg feed). The treatments were a combination of different levels (1.5 and 3%) and sizes (<0.25 mm, 0.4- 0.8 mm and 1- 2 mm) of sodium zeolite A.
Results and Conclusion: On the basis of experiment results, the highest body weight gain and the best feed conversion ratio were obtained in broilers fed by non-contaminated diets with aflatoxin and the lowest body weight gain and the worst feed conversion ratio were obtained in broilers fed by diets contaminated with aflatoxin (1 mg/kg) and using of Sodium zeolite A (3 %) with particle size of 1- 2 mm improved body weight gain compared to diet contaminated with aflatoxin ($P<0.05$). Broilers fed by non-contaminated diets with aflatoxin had the highest protein and energy efficiency ratio and the lowest protein and energy efficiency ratio were found in broilers fed by contaminated diets with aflatoxin. The highest and the lowest liver percentage were obtained in broilers fed by contaminated diet with aflatoxin and non-contaminated diets with aflatoxin respectively. The highest and the lowest amount of blood aspartate amino transferase and alkaline phosphatase were found in broilers fed by contaminated diet with aflatoxin and non-contaminated diets with aflatoxin respectively. Using of Sodium zeolite A decreased the level of blood alkaline phosphatase in broilers fed by contaminated diet with aflatoxin ($P<0.05$). The tibia bone of broilers fed by contaminated diet with aflatoxin had lower ash percentage and the highest ash percentage were found in broilers fed by non-contaminated diet with aflatoxin. Therefore, it can be concluded that the supplementation of diet contaminated with aflatoxin with Sodium zeolite A had positive effects on body weight gain and blood alkaline phosphatase in broilers.
Keywords: Broilers, Sodium zeolite A, Physical size, Aflatoxin

Survey on Sulfonamide resistance gene (*sul1*) in Escherichia coli isolates from broilers in Urmia

Mojaverrostami S[1], Mohammadi V[2], Ghaniei A[2], Sepehrnia P[1*]
[1]*Faculty of Veterinary Medicine, University of Urmia, Urmia, Iran*
[2]*Department of Clinical Science, Faculty of Veterinary Medicine, University of Urmia, Urmia, Iran*
Corresponding author's email: pdotsepehrnia@gmail.com

Objectives: Colibacilosis is one of the most important diseases in poultry industry that causes vast economic losses, and it is also dangerous in terms of public health. Antibiotic treatment is the most important tool in dealing with the disease. Antimicrobial susceptibility of isolates must be determined before choosing an antibiotic drug. This study conducted to evaluate sulfonamide resistance phenotype and genotype of *E.coli* isolates.
Material and methods: In this study 44 strains of *Escherichia coli* were isolated from total of 30 broiler chicken flocks of Urmia city and Its sensitivity to five antibiotics disk, including Enrofloxacin, Sulfadiazine, Florfenicol, Neomycin, Oxytetracycline were assessed. Polymerase chain reactions were used to identify *Sul1* genes.
Results and conclusion: Antibiogram test results showed that 20 isolates were resistant to sulfadiazine as sulfonamide antibiotics. The Resistance rate for each antibiotic was for Sulfadiazine 45.5%, Enrofloxacin 6.8%, Oxytetracycline 79.5%, Florfenicol 13.7% Neomycin 0%. In this study *Sul1* gene were detected in 25 isolates from total 44 isolates of *Escherichia coli.* The results showed that 5 isolates that have had the *Sul1* gene does not show antibiotic resistance in antibiogram test. This could indicate a difference in sensitivity of these two tests or lack of proper conditions for the gene expression in these five isolates. The results showed that the resistance rate of isolates to sulfonamides was high and antibiotic resistance in these two tests, polymerase chain reaction and antibiogram, can be varied.
Keywords: Antimicrobial resistance, *Escherichia coli*, sulfonamide.

Survey on Tetracycline resistance gene (*tetA*) *in Escherichia coli* isolates from broilers in Urmia

Sepehrnia P[1*], Ghaniei A[2], Mohammadi V[2], Mojaverrostami S[1]
[1]*Faculty of Veterinary Medicine, University of Urmia, Urmia, Iran*
[2]*Department of Clinical Science, Faculty of Veterinary Medicine, University of Urmia, Urmia, Iran*
Corresponding author's email: pdotsepehrnia@gmail.com

Objectives: Colibacilosis is one of the most important diseases in poultry from the economic point of view, and it is also dangerous in terms of public health. Antibiotic treatment is the most important matter in dealing with the treatment and control of this disease. Checking the antibiotic resistance status both in genotype and phenotype before choosing an antibiotic drug in the region is essential. This study conducted to evaluate tetracycline resistance phenotype and genotype of *E.coli* isolates.
Material and methods: In this study 44 strains of *Escherichia coli* were isolated from broiler chickens of Urmia city and their sensitivity to five antibiotics disk, including Enrofloxacin, Sulfadiazine, Florfenicol, Neomycin, Oxytetracycline were assessed. Polymerase chain reactions were used to identify *tetA* genes.**Results and conclusion:**Antibiogram test results showed that 35 isolates were resistant to Oxytetracycline as Tetracycline antibiotics. The Resistance rate for each antibiotic was for Sulfadiazine 45.5%, Enrofloxacin 6.8%, Oxytetracycline 79.5%, Florfenicol 13.7% and Neomycin 0%. In this study *tetA* gene were detected in 21 isolates from total 44 isolates of *Escherichia coli.* The results showed that 14 isolates were shown resistance in antibiogram test but didn't have *tetA*gene. This result could indicate the potential effect of other Tetracycline resistance genes that caused resistance and showed in antibiogram test.The results showed that the resistance rate of isolates to Tetracycline was high. Tetracycline resistance gene (*tetA*) is widely distributed in *E.coli* isolates of the region and is the main resistance mechanism to tetracycline.
Key words: Antimicrobial resistance, *Escherichia coli*, tetracycline.

Molecular screening of one week old broilers for *Mycoplasma gallisepticum* contamination

Soltani F[1], Ghaniei A[2], Mohammadi V[2], Sepehrnia P[1*]
[1]*Faculty of Veterinary Medicine, University of Urmia, Urmia, Iran*
[2]*Department of Clinical Science, Faculty of Veterinary Medicine, University of Urmia, Urmia, Iran*
Corresponding author's email: pdotsepehrnia@gmail.com

Objectives:*Mycoplasma gallisepticum* (MG) infection leads to great losses in poultry flocks. Respiratory manifestations of the infection are commonly observed in poultry flocks. Although, other forms of infection are also possible. Various methods are applied for detection of this infection. Culture, serologic and molecular methods are used for this purpose. Among them, molecular based tools have advantages comparing to others. Diagnostic laboratories commonly use serological assays for detection of MG infection.
Material and Methods: Twenty broiler flocks of 1-week old of West Azarbayjan province (Northwest of Iran) included in this survey. Five swab samples from the choanal cleft and trachea were suspended in 1.5 ml of PBS and pooled.After extraction step, DNA subjected to PCR using 16SrRNA primers.
Results and conclusion: All tested samples were negative. Due to high importance of MG infections in broilers, early and accurate detection of infection in flocks is necessary. In this regard, molecular methods such as PCR can be used with high efficiency in one week old broiler flocks.
Keywords:*Mycoplasma gallisepticum*, PCR, broiler, 16SrRNA.

Evaluation the cross immunity of a heated trivalent avian colibacillosis vaccine in broiler chickens

Daneshvarnia M.*, Alempour Rajabi S., Rajabi Z.
Department Of Clinical Sciences, Faculty Of Veterinary Medicine, University of Tabriz, Tabriz, Iran
Corresponding author's email: m.daneshvarniaa@gmail.com

Objectives: Massive outbreak of E. coli infections in poultry industry and treating it with antibiotics cause great economic and health losses. Due to the presence of resistant strains of bacteria in some colibacillosis cases, complete remission can not be done by commonly used antibiotics. Moreover, nowadays, because of increased antimicrobial residues in meat and eggs, other methods such as healthcare management and vaccination are better to be used to prevent infectious diseases in poultry. Currently, vaccination is not used to prevent the disease in Iran.
Materials & Methods: In this study, a mixture of three serotypes of E. coli [O78: K80, O2: K1 and O1: K1], which were inactivated by heating, and alum as an adjuvant was used for producing vaccine. In order to evaluate the efficacy, homologous and heterologous immunity of the vaccine, 96 broiler chickens were randomly divided into four groups: vaccinated and challenged with O78, vaccinated and challenged with O26, non-vaccinated and challenged with O78, non-vaccinated and challenged With O26 seropgroup. When the chickens were 14 day-old, Vaccination was done by subcutaneous injection of 0.5 ml vaccine in the dorsal neck but for non- vaccinated groups, saline solution was used instead of vaccine. Then at 35 days of age, chickens were challenged according to grouping. The impact of prepared vaccine on cross Immunization was evaluated by traits analysis like body weight gain, feed conversion ratio, feed consumption, mortality, serologic studies, necropsy and clinical signs and Bacterial isolation.
Results & Conclusion: In examining the mentioned traits after challenge, non-vaccinated groups had decreased appetite and severe drop in food intake and weight gain. Also at necropsy of the dead chicks of non-vaccinated group, characteristic symptoms of colibacillosis disease was observed. While in the treatment groups specially the vaccinated group which challenged with O78 serogroup the common symptoms of diseases were much less than control groups. Considering the results based on this study, it can be stated that studied vaccine in broiler chickens has the ability to create cross-protective immunity and can prevent the occurrence of colibacillosis clinically and serologically. But in case of survey the average weight gain, it can be said that Intensity of cross-protective immunity generated by the vaccine is less than Homologus immunity.
Keywords: Escherichia Coli , Vaccine, Cross Immunity, broiler chickens

Study of the (iutA, sitA, traT, tsh) genes in Escherichia coli isolated from human urine and poultry Colibacillosis sample

Dadashzadeh S[1], Ahmadi M[2], Sepehrnia P[1*]
[1]*Faculty of Veterinary Medicine, University of Urmia, Urmia, Iran*
[2]*Department of microbiology, Faculty of Veterinary Medicine, University of Urmia, Urmia, Iran*
Corresponding author's email: pdotsepehrnia@gmail.com

Objectives: Avian pathogenic Escherichia coli, is a causative agent of economical losses in poultry industry world wide. Several trials were based on distribution patterns of putative-virulence-associated genes in avian pathogenic *Escherichia coli* and other ExPEC strains, like UPECs. The presence of similar virulence related genes in APEC and UPEC isolates, is one of the statements about whether poultry implements as a reservoir for UPEC strains, or plays a significant role in contribution of these putative virulence genes to them.
Material and methods: In the present study, 63 samples of avian colibacillosis cases and 93 UTI samples were tested for APEC and UPEC isolates, respectively. The total 25 UPEC isolates and 26 APEC isolates, were obtained. After extraction of DNA with boiling method, amplification of these virulence-related genes was performed, based on known PCR protocols for each of them.MultiplexPCR methods was performed for identification of traT and iutA genes and for the two remaining genes,sitA and tshsingle PCR methods were implemented.
Results and conclusion: The frequencies for presence of these selected genes in APEC isolates, and UPEC isolates,were 96.2% and 64% for traT,88.5% and 76% for sitA, 84.6% and 68% for iutA and 61.5% and 16% for tsh, respectively. All genes were observed in both avian and UPEC strains. In conclusion the relation of the presence of only tsh and traT genes were demonstrated. Also they might be used as candidates of further vaccination projects.
Keywords: UPEC,APEC, PCR, Multiplex PCR, Boiling method

The bacterial agents of low hatchability in a canary aviary in Ahvaz, Iran

Ramezan Ali Jafari[1*], Daryosh Gharibi[2], Hessamoddin Zahabi[3],
[1]*Department of Clinical Sciences,*[2]*Department of Pathobiology,* [3]*Postgraduate student,Faculty of Veterinary Medicine, ShahidChamran University, Ahvaz, Iran*
[*]Corresponding author's email: jafari.ramezanali@scu.ac.ir

Objectives:A large number of agents could affect the fertility and hatchability of avian eggs. Bacterial contamination is a common cause of this problem. This work was carried out to specify the bacterial agents involved in low hatchability in a canary aviary in Ahvaz, Iran.
Materials & Methods:A farmer referred with complaints of a rise in infertility and dead-in-shell embryos,and decrease in hatchability of his canary's eggs to Clinic of Faculty of Veterinary Medicine of ShahidChamran University of Ahvaz. After inspection of the aviary, any nutritional problem was ruled out. To make a decisive diagnosis, a dozen non-hatched eggs were examined for bacterial contamination. Samples were taken from the shells andcontents of the eggs,cultured into peptone water as a pre-enrichment medium, and then subcultured into selenite F. Afterwards;the samples were streaked onto both MacConkey and XLD agar plates. At least three colonies from each plate were picked up and identified using a panel of biochemical tests. Finally, the antibiotic susceptibilities of all isolates were performed on Muller-Hinton agar by disc diffusion method. The antibiotics were prepared from Padtan-Teb Co., Tehran-Iran, and were gentamycin (10 µg), fosfomycin(200 µg), ciprofloxacin (5 µg), doxycyclin(30 µg), cefotaxime(30 µg) and ceftriaxone (30 µg).
Results&Conclusion: Out of 24 samples obtained from the interior and exterior of the eggs, four bacterial species were isolated with a predominance of *Klebsiella pneumonia* (33.3%), followed by *Serratiamarcesens* (16.7%), *Enterobacter cloacae* (16.7%), and *Enterobacteraerogenes* (8.3%).Four isolates were unidentified, and two samples were negative.*Serratiamarcesens*and *Enterobacter*spp were recovered only from the content and shell of the eggs, respectively. The highest susceptibility was observed to gentamycin(100%), followed by fosfomycin (81%), ceftriaxone (77%), cefotaxime (68%), ciprofloxacin (63%), and doxycyclin (18%).These results show the role of intestinal flora of canary in embryo mortality, and consequently the importance of hygiene in aviaries for a proper production.
Keywords:*Klebsiella*, *Serratia*, *Enterobacter*, Hatchability, Canary, Egg, Iran

A survey on influenza HI antibody titers (H9N2) of broiler chickens in mazandaran province.

Fereydoni S[1*], HosseiniAliabad SA[2], Shateri S[3]
1-Graduated DVM, Faculty of veterinary, Islamic Azad University, Babol, Iran
2- Department of Veterimary, Faculty of agriculture, Islamic Azad University,Challous branch,Challous, Iran
3- Department of avian disease, Faculty of veterinary, Islamic Azad University,Babol branch,Babol, Iran
Corresponding author's email:sina.f@outlook.com

Objectives: Avian influenza (AI) is an important zoonotic infection which causes mortality in human and fowls.Influenza type A viruses can be classified into high pathogenic and low pathogenic viruses. The H9N2 subtype is a low pathogenic strain and isolated from domestic fowls, ducks, geese, quails and pigeons. This subtype can produce respiratory signs, losses in egg production, and mortality.Vaccination increases bird resistance to field challenge, and decreases shed of virus in the poultry environment.The aim of this study was to evaluate antibody responses against H9N2 killed vaccine in serum of broiler chickens in Mazandran Province by HI test.
Materials & Methods: Blood samples for HI antibody test were takenfrom broiler chicken flocks 42 days of age. The samples were classified in the three groups based on AI vaccine administration. Group A that didn't used any AI vaccines. Group B that used killed AI vaccine at 1 day old. Group C used killed AI vaccine at 7 day old chicks.The results were analyzed with Duncan multiple range test and SAS software.
Results & conclusion: The results showed that mean titer of HIantibodies were significantly different in 3 groups ($P\leq 0.05$).The group A hadthe lowestantibody titer. The HI titerin broiler flocks of group Cthat had used killed vaccine on 7 day of age compared with group B that had used killed vaccine on 1 day old was significantly higher($P\leq 0.05$)**.**
Keywords: Avian Influenza, HI test, Broiler Chickens, Mazandran province

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Molecular Characterization and Phylogenetic Study of the fusion genes of Newcastle disease Viruses Isolated in Ahvaz, Iran, 2012–2013

Zahra Boroomand[1], Ramezan Ali Jafari[2] and Mansour Mayahi[3]
1- Assistant Professor, Department of Avian Medicine, Faculty of Veterinary Medicine ShahidChamran University of Ahvaz, Ahvaz, Iran, 2- Associated Professor, Department of Avian Medicine, Faculty of Veterinary Medicine ShahidChamran University of Ahvaz, Ahvaz, Iran, 3- Professor, Department of Avian Medicine, Faculty of Veterinary Medicine ShahidChamran University of Ahvaz, Ahvaz, Iran
z.boroomand@scu.ac.ir

objectives: Newcastle disease (ND) is a contagious birddisease affecting many domestic and wild avian species. Its effects are most notable in domestic poultry due to their high susceptibility and the potential for severe impacts of an epizootic on the poultry industries. It is endemic to many countries.
Materials and methods: In this study, partial sequences of three ND viruses fusion genome collected from different vaccinated commercial broiler chicken farms with high mortality around Ahvaz city, Iran, were characterized and compared with other NDV sequences.
Result and conclusion: All three viruses showed the amino acid sequence 112 RRQKRF117 at the C-terminus of the F2 protein and phenylalanine at the N-terminus of the F1 protein, residue 117. These amino acid sequences were identical to a known virulent motif. The phylogenetic analysis showed that the Iranian ND isolates in this study are closely related to the genotype VIId of class II NDV strains. Our results specified that there are velogenic NDVs circulating in Ahvaz commercial flocks and causing outbreaks in poultry industry.
Key words: Newcastle disease virus, phylogenetic analysis, fusion protein, Iran, Ahvaz

Immunogenicity of live and killed infectious bursal disease vaccines alone or in combination in broiler chickens

Boroomand, Z[1].,Jafari, R[2]., Makki, F.[3]
1- Assistant Porofessor, Department Of Avian Medicine, Faculty of Veterinary Medicine ShahidChamran University Of Ahvaz, Ahvaz, Iran
2-AssociatedPorofessor, Department Of Avian Medicine, Faculty of Veterinary Medicine ShahidChamran University Of Ahvaz, Ahvaz, Iran
3- Graduated from Faculty of Veterinary MedicneShahidChamran University of Ahvaz, Ahvaz, Iran

Objectives: Infectious Bursal Disease (IBD) is a fatal disease, which is caused by a *Birnavirus*. Vaccination is one of the most effective ways for prevention of the disease. Two types of vaccines (live and killed) are normally used to induce immunity.
Materials and methods: In the present experiment, comparative sero evaluation of live and killed Gumboro vaccine in broilers was carried out. Two hundred and seventy day- old broiler chicks were divided in to 6 match-weighted groups (A-F): group A was vaccinated orally with D78 on day 19; group B received killed and live vaccines on days 3 and 19, respectively; group C was vaccinated with killed and live vaccines on day 9 and 19, respectively; groups D and E were given killed vaccine on days 3 and 9, respectively; group F was kept as unvaccinated one. From each group, three chicks were bled on day 3, and also 15 chicks on days 19, 26, 33 and 42. The collected sera were assessed for anti-IBD antibody by ELISA test. Moreover, six birds from each group were randomly selected and individually weighed at day 42. After killing, bursa fabrecius and spleen were weighed to calculate their relative weights to live body weight. The serum antibody titers of chicks on day 3 and 19, in all groups, had no significant difference ($P>0.05$).
Result and conclusion: The serum antibody titers of group B and D on day 26 were higher than control group ($P<0.05$), but the difference between other groups was not significant ($P>0.05$) on this day. The serum antibody titers of chicks on day 33 and 42, in all groups, had significant difference ($P<0.05$), except groups D and E on day 42. Bursa and spleen to body weight ratio were measured and no significant difference was showed in all groups ($P>0.05$). The efficacy of combined killed and live vaccine was higher than that of live and killed vaccine alone. Higher antibody titers were obtained from live vaccine after killed vaccine administration.
Keywords: Antibody titer, Humoral immunity, Infectious Bursal Disease, Live and Killed vaccine

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Phylogenetic characterization of the partial hemagglutinin protein genes of three avian influenza viruses (H9N2) isolated in Ahvaz broiler flocks during 2011-2013

Zahra Boroomand[1], Ramezan Ali Jafari[2] and Mansour Mayahi[3]
1- Assistant Professor, Department of Avian Medicine, Faculty of Veterinary Medicine ShahidChamran University of Ahvaz, Ahvaz, Iran
2- Associated Professor, Department of Avian Medicine, Faculty of Veterinary Medicine ShahidChamran University of Ahvaz, Ahvaz, Iran
3- Professor, Department of Avian Medicine, Faculty of Veterinary Medicine ShahidChamran University of Ahvaz, Ahvaz, Iran
z.boroomand@scu.ac.ir

objectives: Since 1998, Iranian poultry industry has been affected by avian influenza (AI) virus,subtype H9N2. The association of high mortality with these outbreaks in the field raised the specter of a possible new genetic modified AI virus.
Materials& methods: In this study, three AI viruses (H9N2) isolated from the broiler flocks with high mortality rates were characterized. The 488bp PCR products containing the middle site of hemagglutinin (HA) protein were generated and sequenced to determine molecular characterization of the isolates.
Result &conclusion: Sequence analysis of main region of HAl gene of three isolates showed that isolates were identical at the nucleotide as well as amino acid levels. Phylogenetic analysis of 488 bp nucleotide region of the PCR products revealed that Iranian AI viruses had very close relationship to each other indicating these came from the common source. Moreover, the maximum genetic similarity of these
viruses was observed with AI viruses from India, Tunisia, Israel, Iraq and United Arab Emirates, respectively. Overall, the results indicate that with the exception of some Chinese isolates the current status of Iranian AI viruses resembles to other Eurasian H9N2 viruses and in spite of different nucleotide sequences among the viruses there is no evidence for existence of new AI pathotype.
Key words: Avian influenza virus, Hemagglutinin protein, H9N2, Phylogenetic analysis

A Survey of Ectoparasites of Domestic Pigeons (*Columba liviadomestica*) in Tabriz, Iran

Shahbazi P, Ebrahimi E, Zeinoddin M*.
Department of Pathobiology, Faculty of Veterinary Medicine, University of Tabriz, Tabriz, Iran
Corresponding author's email: mitrazeinoddin_vet@yahoo.com

Back grounds: Pigeons are seen in more region of the world except for the poles. Pigeons live side by side with humans and other animal species in the nature and they are bred as a source of food as a hobby, symbol and for experimental aims. It's interaction with man and other domestic and wild birds, portends it as a potential carrier of zoonotic parasites. They have a role in spreading some zoonoses to people as well as being a reservoir of many parasitic diseases for poultry. Several health problems can affect pigeon but parasitic infections play a major role. Various parasites significantly impede pigeon growth, development and productivity, it at times result to death, especially, the squabs.
Material and Methods: The aim of this study was to determine the prevalence, intensity and species of external parasites in pigeons in Tabriz, Iran, from April 2015 to August 2015. The samples were taken from 20male and female, different-aged pigeons.The ectoparasites were collected as described by Soulsby (1982), briefly after killing the pigeons by anesthesia, they were immediately placed in a polythene bag and the parasites collected after leaving the pigeons. The ectoparasites were preserved for identification purposes in 70% alcohol.
Results and Discussion: In this study, the total prevalence rate of ectoparasites in pigeons was 80%. Total 6 species of ectoparasites were collected from feathers as follows: *Columbicolacolumbae* (70%), *Goniocotesbidentatus* (*Campanulatescompar*) (30%), *Pseudolynchiacanariensis* (20%),*Hohorstiellalata*(10%), *Menopengalline* (5%) andArgasreflexus*(5%)*. The fly *Pseudolynchiacanariensis*that founded beneath the feathers of 20% pigeons, asa transmitter of blood parasites like*Haemoproteus*sp.has serious role, too. From the parasitic fauna seen in this study, it is imperative to institute an integrated parasitic control through constant changing of litter and dusting of birds with pesticides.
Key words: Ectoparasites, *Columba livia*, Tabriz

A survey of gastrointestinal helminthes infection in commercial layers

Tavassoli M*[1] Allymehr M[2], Ghasemi S[1], and Samiei Kh[1]
1- Department of Pathobiology, Faculty of Veterinary Medicine, Urmia University, Urmia, Iran
2- Department of Disease of Poultry , Faculty of Veterinary Medicine, Urmia University, Urmia, Iran
***Corresponding author's email:mtavassoli2000@yahoo.com**

Objectives: Chicken egg is a precious food for many people all around the world and consumers are aware of its nutritional properties. The prevalence of most parasitic diseases in poultry seems to have been reduced significantly in commercial indoor poultry production systems due to improved housing, hygiene and management. However, parasitic diseases may be seen in some commercial systems. The aim of this study was to investigate the prevalence and intensity of gastrointestinal helminthes infections of commercial layers at poultry farms of North West of Iran.
Materials &Methods: A total of 81 commercial layers from 12 poultry farms of Ghazvin, Zanjan, West and East Azerbaijan were collected between May to September 2015. The dead hens were introduced by owners was carried to parasitology laboratory of Faculty of Veterinary Medicine, Urmia University Iran. In the laboratory all contents of gastrointestinal tract from esophagus to the anus were examined for the presence and intensity of helminthes infections. Eventually, visible worms to the naked eye were picked up using thumb forceps and identified by identification keys.
Results & Conclusion: The results indicated that only sample belonging to laying farm from Khoy city, West Azerbaijan of Iran were infected to *Choanotenia infundidulum*. A large number of cestode species have been reported from domestic poultry. Where intensive management is practiced the prevalence of tape worms has decreased. However under intensive management, cestodes, particularly *C. infundidulum,* for which flies are the intermediated hosts, may occur in poultry raised in open houses. In infected farms treatment must be associated with control measures directed against the intermediate hosts.
Keywords: commercial layers, *Choanotenia infundidulum*, helminth, infection, gastrointestinal tract, Iran

Gastrointestinal parasites of domestic ducks in Amol north of Iran

Tavassoli M * [1], Rezaei M[1] and Samiei Kh[1]
1- Department of Pathobiology, Faculty of Veterinary Medicine, Urmia University, Urmia, Iran
***Corresponding author's email:mtavassoli2000@yahoo.com**

Objectives: Ducks are hardy animals and good scavengers. They are easier and cheaper to keep than chickens and play a major role in rural economy in the form of meat and egg. Ducks are susceptible to parasitic infection. They act as the final and intermediate hosts for parasites. The parasites have serious effects on the health of the ducks and result in economic losses due to losses in body weight and reduction in egg production. The present study was designed to find out the prevalence and intensity of endoparasites of domestic duck in Amol, North of Iran.
Materials & Methods: A total of 36 ducks from different parts of Amol city (Mazandaran province) were collected between May to September 2015 and the gastrointestinal tract of each individual duck were examined in the laboratory. For collection of endo-parasites, the gastrointestinal tract was separated and each part was opened in a Petri dish, scraped and washed with saline. Eventually, visible worms to the naked eye were picked up using thumb forceps and kept in 70% alcohol for identification.
Results & Conclusion: This study revealed 6 species of parasites from the intestines of the domestic ducks. Prevalence and intensity of the parasite infestation varied from species to species of the recorded parasites. The result showed that 12 out of 36 samples were infected at least to one parasite. The results also showed infected ducks were infected to Ascaridia galli, Hetrakis galinarum, Diorkis stefa, Hymnolepis sp, Capillaria sp and Eimeria sp. Due to high infection and diversity of collected parasites, more attention required for improve husbandry and treatment programs.
Keywords: domestic duck, gastrointestinal, parasite, endoparasites, Amol.

Serological investigation of CIAV Infectionamongbroiler chicken flocks in Tabriz city

Masood Khakzadihe[*], Hossein Nikpiran
Department of Clinical Sciences, Tabriz Branch, Islamic Azad University, Tabriz, Iran.
Corresponding author's Email: masood_khakzadihe@ymail.com

Objective: The purpose of this study was to investigatechicken infectious anemia virus titers among broiler chicken flocks in Tabriz between 26 September 2014 and 11 October 2014, using serological determination method.
Materials & Methods: nineteen broiler flocks were used for blood collecting and 5 blood samples randomly collected from each flock, totally 95 blood samples. All 95 serum sampleswere tested by a commercial ELISA test kit, according to the instructions by the manufacturer (CIAV, IDEXX). Optical density values were read at 650 nm. According to the producer orders, an optical density of equal or greater than 0.60 was defined as a negative sample and a density of lesser or equal than 0.5 was interpreted as a positive sample.
Results & Conclusion: 38% of tested samples were positive that, it seems that CIAV has a widespread distribution among the Tabriz broiler flocks.
Keywords: Chicken infectious anemia virus (CIAV), ELISA, Tabriz, Broiler

The prevalence of antibodies against chicken anemia virus in broilers

Majid Ezatkhah, Maryam Amini

Introduction: Chicken infectious anemia virus (CIAV) was first isolated in 1979 in Japan. In fact, it was not a new disease but a newly recognized one. (Hegazy et al., 2010)
This virus is the only member ofcircoviridaefamily, it is a small and non-enveloped Virus. Chickenanemiamostly affects chicks of 2 to 4 weeks that is characterized with severe anemia, pale bone marrow,generalized lymphoid atrophy and severe immunosuppression.(Hadimli et al., 2008)
virus spreads vertically from parents to progeny andhorizontally by contact exposure to infected chickens.
Infection of older birds with Chicken infectiousanemia appears mostly in subclinical form and is complicatedby viral, bacterial, fungal and parasitic diseases .The most problem with this disease is economic losses because of reduced weight gain and the increased mortality of chicks by 10 to 20%, or even up to 60% in some outbreaks.
First occurrence of CIA infection in broiler chicken flocks of Iran has been reported by Toroghiet alin2003. Then, several clinical cases and numerous subclinical cases of *CIA*were also reported.
There are a lot of methods for diagnosis the virus in affected chickens like virus isolation, immunohistochemistry, serology and molecular methods. Because virus isolation is time-consuming and requires an equipped laboratory,serology usingimmunofluorescent antibody (IFA), ELISA, andneutralisation tests can detect antibodies to *CIA* virus.
ELISA is a highly specific and sensitive method for establishment the prevalence of anti-*CIV* antibodies. This serological study describes the prevalence of antibodies against *CIA*in broilers of Kerman province.
Keywords: *Chicken infectious anemia,Broiler, ELISA* Materials and methods

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Comparison between Haemagglutination Inhibition Test and Enzyme-linked Immunosorbent assay in Evaluation of Newcastle disease antibodies

Ezatkhah M[1], Amini M[1*]
[1]Razi Vaccine and Serum Research Institute, Kerman branch, Kerman, Iran
***Corresponding author Mailing address: Ma.amini61@gmail.com**

Objectives: Newcastle disease virus (NDV), the cause of Newcastle disease (ND) in poultry is one member of family Paramyxoviridae. It is a fatal and highly contagious disease of poultry.Thedisease causes high economic losses due to high mortality and morbidity.There are several serological methods for measurement of antibodies (Abs) against Newcastle diseasevirus (NDV).In this study the antibody titersof Newcastle disease virus (NDV) in broiler chicks using haemagglutination inhibition (HI) test and an indirect enzyme-linked immunosorbent assay (ELISA) were compared.
Materials & Methods:A total of 15 poultry flocks wereselectedrandomly in Kerman province.441 blood samples was collectedin test tubes.Collected blood was left over-night at roomtemperature to clot and then centrifuged at 1000 rpm for 10 minutes. For HI test at first a 0.25% suspension of Chicken red blood cells (RBC) was prepared, then two-fold serial dilutions of serum samples were made with normal saline in micro titer plates. 0.05 ml of the NDV antigen were added in each well of the plate.The plate was shaken and left for 30 minutes at room temperature after that 0.05 ml of chickenRBCs was added to each well.The plate was then rotated and lefttill a pattern of HA appeared.Haemagglutination inhibition titers were expressed as the reciprocal of the highest dilution that cause 50% inhibition ofagglutination.
Serum samples were examined for detection of anti ARV antibodies by using of commercially available ELISA kit (Newcastle diseaseAntibody Test Kit, BioChek, Gouda, Netherlands). The ELISA test and analysis of results was performed according to the manufacture′s recommendations.
Results & Conclusion: The results obtainedrevealed that82/76% (365) of samples were positive in HI test for ND antibodies but positive samples in ELISA test were 99/05% (439).
Our study concluded that ELISA technique is more accurate, sensitive and rapid to perform in detecting Absagainst NDV compared to HI test although the HI test is more economic.
Keywords: Newcastle, serological,HI, ELISA

Investigation ofanHerbal Mixed Product forManagement Broilers Rearing

AbdolrezaNabinejad *(DVM, Ph.D)
Isfahan research and education center of agriculture ,Vet. Dept.
Nabinejad@Yahoo.com

Herbal plants has natural source and are grown in different parts of IRAN, they have shown different characteristics as antibacterial, antiviral, antiparasites and antifungal, meanwhile their good taste and odor is acceptable as a good organoleptic and withthe use of chemical compounds havingmany side effects like residues in animal production and bacterial resistance, finding an appropriate alternative has become very important.
Here totally 1500 broilers were reared for 45 days , a complimentary mixture of Mint (15%), Thymus voulgaris (15%) ,Eucalyptous (15%), Pulegiumvulgaremill 30% in a citric acid (40%) were prepared and used 1% in drinking water of test groups which were repeated 3 time . A control group and a comparison group also were executed, each groups had 300 birds and in control group herbal mixture was not used also in comparison group , virginamycin (0.3 /1000) were used as growth promoter.
For judgment the mean gain weight and mortality rate of the groups were analyzed at the day of slaughtering.
Based on thestatistical results the mean gain weight and mortality rate in ($p<0.01$) in the test groups showed significant difference..
Key words: herbal drug ,Broiler, Management

Immigrant Birds Sero monitoring For AI And ND In Gavkhouni Area

AbdolrezaNabinejad*(DVM, Ph.D)
Isfahan research and education center of agriculture ,Vet. Dept.
Nabinejad@Yahoo.com

The Zayandeh Rood River originates in theZagros mountains and travels around 300 km, twoard*Batlaq-e-Gavkhuni*, which is located in central Iran, east of city of Esfahan, Gavkhouni is a salt marsh with a salinity of 315‰ and an average depth of about 1 m ,It was alive after 10 years in 2015 –spring and a lots of bird were housed there during their immigrations.
Because of its location in the central part of Iran and environmental habitat some of the aquatic birds such as Anseranser, TadornaferrugineaTadornatadorna, Anasplatyrhynchos, Anascrecca, Anasacuta, Aythya farina, Duck sp., Fulicaatro, Ardeacinoea, Egretta alba, Phoenicopterusruber and swans rest for a period of time and selected for current work..
Here in spring and summer about 30 birds were trapped and some blood samples were prepared via wingvein, also some cloacal samples were prepared and transported near the ice to lab.
Sera were isolated and screened or ND and AI(H5 N1 and H9N2) by HI test. Fortunately non of the sera were positive for H5 but all of them were positive for H9(Mean titer =3.9, C.V.=120%) ,In ND most of the sera(#78%) were positive (Mean titer=4.2,C.V.=88%).
Regarding to the results its oriented that AI virus were circulating in the examined birds and should be alert for HP serotypes, meanwhile a mixed ND and AI infection would be important for poultry industry.
Key words: Seromonitoring, Immigrant, Bird, Gavkhouni, ND, AI

Pathogenesis Investigation Of An Isolated Mycoplasma Galisepticum by Embryo ChorioallantoicMembrane Inoculation

AbdolrezaNabinejad*(DVM, Ph.D)
Isfahan research and education center of agriculture ,Vet. Dept.
Nabinejad@Yahoo.com

Background: Mycoplasmas are one of the most important bacterial infection of Animals, Human , plants and cell lines, In birds they cause mycolpalsmosis with different respiratory and common signs, the mortality rate is increasing with colibacilosis ,here pathogenesis an isolated mycoplasma galisepticum isolated from rural hen were examined by chorioallantoic inoculation in 9 days old embryonated eggs.
Material and Methods: Some rural hens with respiratory infection were examined for mycoplasma isolation , the isolated nipple like mycoplasma were confirmed by PCR . 10 Fertile eggs were incubated for 9 days and candled for vitality and their air sacs moved for preparation false air sac. For pathogenesis investigation the samples of .3 ml of pplo broth with 10^8 CFU were inoculated in chorioallantoic membrane (also for Controls). The eggs were sealed and incubated for more 7 days also were daily candled for vitality..
Results: The inoculated eggs were refrigerated an overnight and embryos examined for autopsy and M.G. identificationfrom Lungs, Tracheas , Spleens and Livers by PCR and examined for pathological changes. The infected tissues showed different types of necroinflamation and cell death also partial nanism. .
Conclusion: Regarding to results it is oriented that isolated M.G. make pathological change in the pulmonary and gastrointestinal organs for about 4 to 7 days post inoculation .
Key words: Pathogegesis ,M.G., Chorioallantoic ,Embryo

Motile salmonellosis in some Black Swans

AbdolrezaNabinejad (DVM, Ph.D)
Isfahan research and education center of agriculture ,Vet. Dept.
Nabinejad@Yahoo.com

The **black swan** (*Cygnus atratus*) is a large waterbird, a species of swan, which breeds mainly in the southeast and southwest regions of Australia., Black swans are mostly black-feathered birds, with white flight feathers. The bill is bright red, with a pale bar and tip; and legs and feet are greyish-black. Cobs (males) are slightly larger than pens (females), with a longer and straighter bill. Black swans have been introduced to various countries as an ornamental bird and most of the bird gardens exhibit these birds.
Here a bird garden with 6 black swans is reported with signs of diarrhea ,emaciation, dehydration and vomiting. The disease were acute and due to sever upper gastric sign and weakness they were suspected for AI. So first of all in a collaboration with vet Office the area were isolated and quarantined also some blood , pharyngeal and fecal samples were prepared for AI identification.
The sera examination were not showed HI titer for H5N1 but the mean titer for H9N2 and ND were positive.(Respectively 4 and 5).
In fecal samples a lots of mucosa were visible and in bacterial examination the motile salmonella isolated that was resistant to sulfamethoxazole, tetracycline , trimethoprim, streptomycin ,kanamycin and gentamicin but were sensitive to the fosbac and cephalosporins.

The effect of service room temperature in a layer breeder farm on primary embryo mortality in hatchery in winter

KhodadadFakhrabadi A[*1], CharkhkarS[1], HosseiniShahidi R[2], Khansaari AH[3], Rahbar N[3]

[1] Islamic Azad University, Science & Research Branch, Tehran, Iran,[2] Student of biotechnology, Department of Pathobiology, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran,[3] Breeder Farm Clinician, Seamorgh Company, Iran

Corresponding author's email:alikhodadadfakhrabadi@yahoo.com

Objective: Tis study aimed to compare the effect of two different temperatures to decrease mortality of cold thermal shock on fertile eggs before incubation.
Materials and Methods: This study was done in two hall Bovans of a layer breeder farm in SeamorghCompany with the same condition of raising, production, age and etc. At service room of hall A, the fertile eggs were gathered and stored in 20°C and at the service room of hall B in 25°C. After gathering, the eggs were carried with a secure trolley to gas room for disinfection in environmental temperature, the eggs were traced in hatchery and the primary embryo mortality was assessed by candling at day 7 of incubation in 10 different parties.
Results and Conclusion: The results of assessment showed the mean of primary embryonic mortality in 10 parties of eggs stored at 20°C was about 4% and at 25°C was about 6%.
Keywords:primary embryo, layer breeder, service room temperature, Seamorgh Company Khorasan

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Histochemical study of the Infundibulum of the oviduct in laying chukar partridge

Hashemnia Sh[*], Hasanzade S
Department of Basic science, Faculty of Veterinary Medicine, University ofShahidbahonar,Kerman,Iran
Corresponding author's email: shadihashemnia@yahoo.com

Objectives: The present work was carried out to study the histological features of the infundibulum in the laying chukar partridge as the histomorphological investigation on this bird is very scarce.
Materials & Methods: For this purpose 5 healthy, actively layingchukar partridges were used. After euthanasia with an overdose of ketamine, the thoraco-abdominal cavity was cut open. The oviduct was removed and the samples were collected from the infundibulum. They were immersion-fixed in bouin's solution. After routine tissue processing, they were embedded in paraffin wax. 5µm thick sections were obtained transversely. The slides were stained with Hematoxylin-Eosin (H&E), Periodic Acid Schiff (PAS) and Trichrome Masson (TM) and studied by light microscope.
Results & Conclusion: The histology of four layers of the infundibulum was studied. The tunica mucosa and tunica submucosa were well identified in the trichromemasson stain. The secretory cells and the type of their secretion were recognized through the PAS technique. Longitudinal ridges and primary and secondary folds were seen in the mucosa and submucosa of its thin wall. The epithelium of the infundibulum was consisted of secretory cellsand non-secreting ciliated cells but the distribution of these types of cells varied in different part of the infundibulum. The lamina propria and tunica submucosa werecomprised of loose connective tissue with collagen fibers and vessels. The tunica muscularis and tunica serosa were as typical.The results of the present study showed similar histological findings between the chukar partridge infundibulum and domestic birds.
Keywords: Oviduct, Infundibulum, Histology, Chukar partridge

Comparison effect of *Saccharomyces cerevisiae* and AGP on Morphology of Intestine in Broilers

Hedayati M. [*], Manafi M.
Department of Animal Science, Faculty of Agricultural Science, Malayer University, Malayer, Iran.
Corresponding author's email: mahvet77@gmail.com

Objectives: One of the procedures to replace antibiotic growth promoter in broiler feed,is to add probiotic in feed. The probiotics have made it possible to increase immune parameters, gut health and livability of birds.
Materials & Methods: In current experiment, a total of 180 day-old unsexed Ross 308 broiler chicks were randomly allocated into three treatments and four replications of fifteen chicks each, in a completely randomized experimental design manner. Diets prepared without additive as Control (group1); 0.1% probiotic (group2) and 0.1% AGP (group 3). In final day of study in each replicate, 2 birds were killed and intestinal samples from ileum tissue were taken.
Results & Conclusion: Results showed that addition of AGP and probiotic could significantly decrease the population of coliforms, salmonella and *E.coli* in broilers intestine and villus height (µm) and Villus height to crypt depth ratio was increased in treatment having probiotic containing *Saccharomyces cerevisiae*, whereas, the number of goblet cells in each 100 µm of villus height and also crypt depth ratio was significantly decreased in probiotic and AGP fed groups. It can be concluded that dietary probiotic could be positive replacement for antibiotic growth promoters, when added to the basal diet of the current experiment.
Keywords: Probiotic, Antibiotic Growth Promoter, Intestinal Morphology, Broilers.

The Effect of Papper Mint Ethanolic Exteract Immunity Titer in Broilers received SRBC

Hedayati M. [1*], Samayi S. [2], M. Manafi [1]
1- Department of Animal Science, Faculty of Agricultural Science, Malayer University, Malayer, Iran.
2- M. SC. Scholar, Depatment of Animal Science, Malayer University, Malayer, Iran.
Corresponding author's email: mahvet77@gmail.com

Objectives: This experiment was conducted to investigate the effects of peppermint extraction on chicks receiving SRBC on immune responses.
Materials & Methods: in a afactorial design with 4 treatments and 4 replicates of 10 chicks per replicate.Treatment 1 was the control group fed with basal diet, treatment 2 received basal diet with 450 ppm AGP, treatment 3 the basal diet with 0.1 % of the peppermint extract and treatment 4 basal diet with 0.2 % of peppermint. In this study, in 28 and 35 days of age, 0.5 ml SRBC per each bird was injected in the right chest muscle and on days 35 and 42 of each replication, two blood samples were taken to investigate Immune responses.
Results & Conclusion: The results showed that improvement immune response against Newcastle disease was obtained in treatment 4 receiving 0.2 percent peppermint extract-dose at 42 days of age. Immune response of influenza in birds of different treatments showed no significant improvement ($P>0.05$).
Key words: Broilers, Peppermint Extract, Immune Response.

Comparison Effects of *Satureja Hortensis* and *Thymus Vulgaris* Extract with Antibiotic Growth Promoters on Immune Organ and Immune Cells of Broilers Challenge by SRBC

Hedayati M.[*1], Akbari S.[2], Manafi M.[1]
1- Department of Animal Science, Faculty of Agricultural Science, Malayer University, Malayer, Iran.
2- M. SC. Scholar, Depatment of Animal Science, Malayer University, Malayer, Iran
Corresponding author's email: mahvet77@gmail.com

Objectives: This research was done for comparing the effect of satureja hortensis extract and thymus vulgaris extract with antibiotic growth prompter (AGP) on some immune parameters of broilers.
Materials & Methods: In this study 200 Ross broiler chicks in a completely randomized design with 5 treatments and 4 replicates of 10 chicks were tested. Treatments involved control group the basal diet، basal diet plus 0.45 percent of the antibiotic growth promoter AGP, basal diet with 0.05 percent satureja hortensis extract, basal diet with0.05 percent thymus vulgaris extract ،the basal diet plus 0.025and 0.025 percent of the satureja hortensis extract and thymus vulgaris extract In 28 and 35 days of age 0.5ml of sheep red blood cells (SRBC) was injected in breast muscle of 2 birds from each replicated. On the final day (42 day) of the study, 2 birds from each replicate randomly was selected and blood samples were taken for analyzing blood cells and killed for determination of proportional weight of bursa of fabricius, thymus and spleen.
Results & Conclusion: The results of this study showed that There were no significant difference between the treatments for proportional weight of thymus and spleen (p >0.5). The bursa of fabricius weight had significantly difference between treatments (p<%5). The SRBC injection had no significant effect on the weight of the thymus, spleen and bursa of fabricius (% 5 <P). The percentage of blood cells in 35 days of treatment, the combination of *Zataria multiflora* and *Satureja khuzistanica* extracts significantly increased and significantly decreased the frequency of the lymphocytes (P<0.05). *Zataria multiflora* extract (0/05%) alone could significantly increase the percentage of blood lymphocytes (P<0/05).The *Satureja khuzistanica* extract could significantly (P<0.05) increase the percentage of blood eosinophil. It could be concluded that the effect of herbs of *Satureja khuzistanica*. *Zataria multiflora* and the combination of these two herbs had positive effects on immune parameters.
Keywords: *Satureja Hortensis*, Extract, *Thymus Vulgaris*, Immune Parameters , Broilers.

Observation and identification E. coliinfection in Malelayer breeder of bovansbreeds with Eye symptoms in Iran

Khansaari AH[*3], Charkhkar S[1], HosseiniShahidiR[2, 3],KhodadadFakhrabadi A[1 ، 3], Rahbar N[3]
[1] Islamic Azad University, Science & Research Branch, Tehran, Iran
, [2] Student of biotechnology, Department of Pathobiology, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran, [3] Farm Clinician, Seamorgh Company, Iran, Mashhad
Corresponding author's email:amirhosein.khansary@yahoo.com

Objectives: Escherichia coli(E. coli) is a Gram negative bacterium anditsalways found in the digestive tract of poultry and most strains are non-pathogenic. However, a small number of virulent serotypes of *E. coli* can cause poultry diseasesuch asyolk sacinfection**,** Inflammation ofthe peritoneum,peritonitis,salpingitis,synovitis, respiratory infections,omphalitis – navel infection andbumblefoot. In this study, Find and observationwhitespotonthe corneaof the eyeinthemale layer breederfrom the 39weeks ofage InJuly2013 and Casessampledandtested. According to the history andsymptoms, Diseases such asammonia gas (NH_3)poisoning,Marek's disease, AE(Avian encephalomyelitis virus), Cornealulcers was considered for differential diagnosis. First this injurybegan to growtothewhitespotand then was releasedallthecornea.so that rooster lost the ability to sight from that side. At the end the eye socket be out and eyedischarge. DespiteIsolation E.Coli from eye samples inthe laboratory, also occurinjury and one side blindness in rooster, the breeder hensinthe samesalon never seen similarsymptomsuntil the end of production flock.Outbreak this complication seenonly inone eye and rooster only.
Materials and methods: The type of sample was bird head case that were sent directly to laboratory. Severalperiodically sampling and sending to alaboratory.performmicrobial culturesfrom theeyes and earsfinally, determined this injuryisbacterial andThe most common organism grown from conjunctival was Escherichia coli.
All other laboratory test results had been normal.
Results and Conclusion: Diagnosis of E.coli infections According to History, signs & lesions and laboratory diagnosis. In allsamplessent to thelaboratory, escherichia coliwas obtainedbymicrobial cultures from theeyes and ears**.**
The investigation in this case showedthedifferential diagnosis Thepossibility ammonia gaspoisoning ,due to thedrylitter and manure pH , temperature and adequate ventilationsalonalsonotseen the samelesion In the eyes ofbreeder hens, In addition,Outbreak This disease Onone side in rooster,This factor isnot correct.
Avian encephalomyelitis virus normally causes disease in chickens 1-6 weeks of age. The virus primarily affects the nervous system ,this flockhas used at the 13 weeks ofage onedoseofAE vaccinedrinkingmethod.
AboutMarek's diseaserisk,againBased onLack ofinvolvement ofthediseaseInbreeder hens alsochickens were vaccinated at the hatchery.,this hypothesisisrejected.
it should also be noted that the disease unreportedinflockthatsamebreeds,even whit Similarorigina similar case. Othersymptomssuch asrespiratory infections (Fungal and viral), lameness and etcwas not observedin roosters.
To our knowledge, there is no report about observation of eye symptomsE. coliinfection in malelayer breeder of bovansbreeds from Iran
Keywords: Ocularlesions**,** E. coliinfection**,** male layer breeder**,** bovansbreeds

Effects of Royal Jelly, Honey and Ethanolic Extracted Propolis on Immune System of Japanese Quails *(Coturnix coturnix japonica)*

S. Babaei[1], S. Rahimi*[1], M. A. Karimi Torshizi[1], S. N. Khaleghi Miran[1], G. H. Tahmasebi[2] , A. Rahimi[3]
[1]Department of Poultry Science, Faculty of Agriculture, Tarbiat Modares University,
[2] Department of Honeybee & Silkworm Research, Animal Science Research Institute, Karaj- Iran.
[3]College of Veterinary Medicine, Islamic Azad University, Tehran, Iran

This study was conducted to determine the effects of royal jelly, honey and ethanolic extracted propolis on immune system of Japanese quails. A total of 128 mixed-sex quail chicks were distributed in a completely randomized design into 4 treatments and 4 replications with 8 birds/cage. Experimental groups included control diet (not supplemented), ethanolic extract of propolis 1000 ppm (EEP), royal jelly 125 ppm (RJ) and 2.2% aqueous honey (H). Vaccination against Newcastle disease (ND) were performed on d 7 (Live B1 strain) and Avian influenza H9N2 subcutaneous injection on d 21 (Newcastle and Avian influenza killed vaccines) to all chicks. As a booster, the second live Newcastle disease vaccine (La Sota strain) was performed via eye drop at day 21. The HI titers against both vaccines were determined on serum samples of the same birds at day 42. Chicks were injected into breast muscle with SRBC followed by a booster injection at 28 and 35 days, respectively. Blood samples were drawn at day 42. The antibody levels against SRBC were measured by hemagglutination test. The cell-mediated immune response was determined via phytohemagglutinin (PHA) and dinitrochlorobenzene (DNCB), on day 41 of age. The data were analyzed by GLM procedure of SAS. The results showed that bee products increased the ND titer ($p < 0.01$). However, EEP group was the highest in the (NDV) antibodies titer when compared with control groups at the end of experiment. There was significant difference for total anti-SRBC and AI antibody (on 42 day). The highest concentration was related to H treatments for AI ($p < 0.01$). There was significant increase in skin thickness of honey drank quails compared to the rest of the experimental groups for DNCB ($p < 0.01$). Significant differences were observed in heterophils to lymphocytes ratio between EEP, RJ and H with control groups ($P<0.01$). The present findings suggest that use of bee products as a natural feed additive could promote humoral and cell-mediated immune responses in Japanese quail.
Keywords: honey bee products, cell mediated immunity, humoral immunity, Japanese quail

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Comparative study of *Cryptosporidiumspp*. prevalence in broilers and native chickens in Tabriz suburb

HosainHashemzadefarhang[1],ParisaShahbazi[2], Sana Gaffari[*3]
[1]Department of Pathobiology, Faculty of Veterinary Medicine, TabrizBranch, Islamic Azad University, Tabriz, Iran.
[2]Department of Pathobiology, Faculty of Veterinary Medicine, Tabriz, Iran.
.[3] DVM Student, Faculty of Veterinary Medicine, University of Tabriz, Tabriz, Iran*
Corresponding author's email:sana_ghafari@yahoo.com

Objective: cryptosporidiosis is one of the important diseases in Livestock, poultry and human that it has both of health and economic importance.Cryptosporidium is a parasitic protozoan that it causes gastrointestinal disorders and diarrhea or involvement of Respiratory Tract and Fabricius Bursa. In the case of co-infection, especially immunosuppressive diseases such as IBD, cryptosporidium has more pathogenicity and cause the gastrointestinal or respiratory disorders.

Material & Method: This study was conducted to elucidate the prevalence of *Cryptosporidium*oocysts in broilers and native chickens in Tabriz, Iran. A total of 800 fecal samples comprising400 samples from 20 farms of broilers and 400 samples of native chickens were examined using the modified Ziel-Neelsen stain of fecal smears and using light microscopy.

Results & Discussion: This study confirms the presence of avian *Cryptosporidium*in Tabriz suburb.The total prevalence rate was 7.12%.The prevalence rate in native chickens (9%) was higher than broilers (5.25%) but the difference was not statistically significant ($P>0.05$).The type of maintenance and outdoor feeding can be the cause of this difference of percentage. Since in stress situations and outbreak of other diseases in herds of broiler chickens of farms the severity of symptoms and complications of this protozoan may be increased.

Keywords: Cryptosporidium, Tabriz, Broiler chickens, Native chickens.

Effect of artichoke concentrate on layer performance in commercial scale

Rahbar N[*3], CharkhkarS[1], HosseiniShahidi R[2], Khansaari AH[3], KhodadadFakhrabadi A[1]

1 Islamic Azad University, Science & Research Branch, Tehran, Iran,2 Student of biotechnology, Department of Pathobiology, Faculty of Veterinary Medicine, Ferdowsi,University of Mashhad, Mashhad, Iran,3 Farm Clinician, Seamorgh Company, Iran

Corresponding author's email: n.rahbar@yahoo.com

Objectives: Uses of intensive diet in commercial birds to increasing outcomes, negatively affected metabolic state and internal organs like liver and subsequently bird performance. Plant extracts as feed additive are one of the solutions to this problem. This study was designed in order to investigate the effects of artichoke concentrate on performance of caged layer in industrial scale.

Materials & Methods: In this experiment, two groups were bred under same conditions: 55000 laying-hens (Bovans line) into the same building and housing conditions (light, temperature) and same commercial feed in post-peak stage (53 week old) with slight symptoms of hepatic injuries were chosen, one group undergoes treatment with 200g/ton artichoke concentrate for 45 days and another group as control used diet without any additive. Egg production rate, mortality and feed intake and mean egg weight were recorded daily. Body weight was monitored twice a week. Daily data analyzed and Results of two group compared after day 45.

Results & Conclusion: The laying rate in treatment group did not fall down as much as control group at the end of the test (-5.69% in control group vs. 4.55% in treatment group.). Cumulative mortality rate in treatment group showed better result (1.79 vs. 1.86). No significant increase of egg weight observed in treatment group (63.42 vs. 63.52g) and no change in feed consumption (118 vs. 118 g/d). Body weight increased significantly in treatment group (1620g to 1631 g in control group vs. 1600 g to 1638 g in treatment group)

Keywords: Artichoke concentrate, bovans, Laying-hen, Laying performances, metabolic state

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Effect of Thermal Manipulation During Pre and Post Hatch on Intestinal Bacterial Populations in Male Broilers Challenged by Chronic Heat Stress

G.R.,Zaboli[1], S. Rahimi[1]*, F. Shariatmadar[1], M.A. Karimi Torshizi[1], A. Baghbanzadeh[2]

[1] Department of Poultry Science, Faculty of Agriculture, TarbiatModares University, Tehran

[2] Department of Physiology and Pharmacology, Faculty of Veterinary Medicine, University of Tehran

Researchers have recently focused on early thermal manipulation in order to mitigate heat stress in the long term. These studies have demonstrated that thermal manipulation during the pre and post hatch can induce reduction in body temperature and mortality. Therefore, the aim of the present study was to determine the effects of thermal manipulation during pre and post hatch on intestinal bacterial populations. Six hundred fertile eggs were gathered from a local broiler breeder flock. The eggs were weighed and divided into 5 groups and 5 replication with similar mean weight and then randomly assigned to treatments as follow: 1- pre-hatch group that was incubated at 39.5°C and 65% RH for 12 h/d from d 8 till 18 of embryogenesis, after that raised under normal conditions from 1 to 28 d and then exposed to chronic heat stress from 28 to 42 d(PR) in poultry house. 2-Post hatch group was incubated under normal conditions and exposure to thermal manipulation (36-38 °C for 24 h at 3rd day of age), then exposure to chronic heat stress from 28 to 42 d (PO3). 3-Post hatch group was incubated under normal conditions and exposure to thermal manipulation (36-38 °C for 24 h at 5th day of age), then exposure to chronic heat stress from 28 to 42 d (PO5). 4- Naive Control group was incubated and raised under normal conditions without exposure to any heat stress (NC) either in incubation or poultry house. 5- Challenged control group was incubated and raised under normal conditions to 28 d then exposure to chronic heat stress from 28 to 42 d (CC). At d 42, five birds in each group were sampled for microbial counts (ileum and ceca) for enumeration of Lactobacillus spp, total aerobes, Coliforms count. Results shown that thermal manipulation in pre or post hatch and chronic heat stressdid not have any significant *effects on Lactobacillus*spp and total aerobes counts in ileal and ceca digesta ($p > 0.05$). Thermal manipulation and chronic heat stress caused an increase in coliforms counts both in ileum and ceca compare to NC. The present study showed that thermal manipulation and chronic heat stress increased coliforms count in ileum and ceca without any effects on *Lactobacillus*spp and total aerobes bacteria population.

Molecular characterizationsof *closteridium perfringens* isolated from healthy broilers and broilers with mild necrotic enteritis in east north of Iran

1-Mohammad Yousefi 2-Jamshid Razmyar

1-Department of poultry Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran

2- Department of Clinical Sciences, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran

1-Corresponding Author: Email:Dvm_yoosefi@yahoo.com

Clostridium perfringens is a Gram-positive, anaerobic rod and spore forming pathogene,causing necrotic enteritis. (NE) disease in poultry.NE in poultry is associated with subpopulation of *C.perfringens* type A and rarely type C with numerous toxins and bacteriocins like netB,Tpel and perfrin.In this study we characterized toxin profile of Twenty strains isolated from six broiler flocks(10 isolates from suspected NE outbreak and 10 isolates from healthy flocks) using Multiplex and single PCR assays. The results showed that all isolates from healthy(n=10) and NE(n=10) chickens were positive only for cpα,representing type A and were negative for netB, Tpel and perfrin.Our results suggest that typeA is the most prevalent type in east north of Iran.It seems that further investigations are required to determine the role of toxins and risk factors in development of NE.

Necrotic enteritis, *Clostridium perfringens,*netB,Tpel,perfrin.

The effect of service room temperature in a layer breeder farm on primary embryo mortality in hatchery in winter

KhodadadFakhrabadi A[*1,3], CharkhkarS[1], HosseiniShahidi R[2,3], Khansaari AH[3], Rahbar N[3]

[1] Islamic Azad University, Science & Research Branch, Tehran, Iran

,[2] Student of biotechnology, Department of Pathobiology, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran

,[3] Farm Clinician, Seamorgh Company, Iran, Mashhad

Corresponding author's email:alikhodadadfakhrabadi@yahoo.com

Objective: Primary emberyonic mortality in hatchery is one of the most important factor for production of one day old chickens and hatchability. The differences of the temperature in service room and environment in a short time beforetransferring todisinfection room at winter and resulted cold thermal shock can increase the primary mortality in hatchery. In this case in winter the temperature of service room was 25°C,and the eggs impaired by cold thermal shock after carrying to disinfection room. This study aimed to compare the effect of normal temperature of service room, 25°C with decreased temperature, 20 °C, on primary mortality in hatchery.

Materials and Methods: This study was done in two hall of a 46 weeks Bovans strain of a layer breeder farm in SeamorghCompany, khorasanbranch with the same condition of raising, production, age and etc. At service room of hall A, the fertile eggs were gathered and stored in 20°C and at the service room of hall B in 25°C. After gathering, the eggs were carried with a secure trolley to gas room for disinfection in environmental temperature, the eggs were traced in hatchery and the primary embryo mortality was assessed by candling at day 7 of incubation in 10 different parties.

Results and Conclusion: The results of assessment showed the mean of primary embryonic mortality in 10 parties of eggs stored at 20°C was lesser . The mortality at 20 and 25°C were about 4% and 6% respectively. So decreasing the service room temperature in winter decreased thecold thermal shock and mortality rate ($P<0.005$)

Keywords:primary embryonic mortality, layer breeder, service room temperature,hatchery,Seamorgh Company Khorasan

Evaluation of the effect of a herbal drug, immunofin on Newcastle disease vaccine respons in broiler breeder poultry

RHoseiniShahidi*[2,3] ,Charkhkar S[1], Khansari A[3], Khodadad. Fakhrabadi A[1,3], Rahbar N[3]
[1] *Islamic Azad University, Science & Research branch, Tehran,Iran*
[2]*Student of biotechnology, Department of Pathobiology, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran*
[3] *Farm Clinician, Seamorgh Company, Iran, Mashhad*
Corresponding author's email: reza_hoseini_shahidi@yahoo.com

Objective: The purpose of this study was to determine the effects of a herbal drug, immunofin, a compounds ofAchillea and Echinacea angustifolia on protective immune titre of Newcastle disease (ND) vaccine response after vaccination in broiler breeder poultry from 40 weeks old Ross 308-strain.
The study was done in two groups of 15 chickens of mentioned strain with the same condition of feeding, ventilation, vaccination, production and etc.
Materials & Methods: Group 1& 2 of chickens take the oral clone 30 (ND) vaccine at week 40 and Group 2 of chickens take the oralimmunofin for three days. A day before and two days vaccination.The serum sampling was done in each group at two days before and day 14 and 28 days after vaccination for heamagglotination inhibition (HI) test. Also sampling and HI test was done for chickens yielded from the fertile eggs of each group.
Results & Conclusions: The results showed that antibody levels after 14 and 28 days of vaccination, in group with vaccination and herbal drug feeding were higher compared with those take just the vaccine ($P<0.05$) and the difference of titre was significant in yielded chickens. So this compound can use for increasing the ND vaccination and protective titre of antibody in chickens.
Keywords: Immunofin, broiler breeder, ND immune response, HI test, Achillea, Echinacea angustifolia

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Pathologic and Molecular Study of an Unusual Avian Hepatitis E Infection in Commercial Layers in Iran.

Seyed Ahmad Madani[1, 2], Amir Ghorbani[1, *], Morteza Haddadian[1, 2], ArashGhlyanchi Langeroodi[3]
[1]*Department of Avian Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran*
[2] *Central Veterinary Laboratory, Towhid St., Tehran, Iran*
[3]*Department of Microbiology and Immunology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran*
Corresponding author's email: amirghorbani@ut.ac.ir

Objectives: Avian hepatitis E virus (aHEV) is associated with hepatitis-splenomegaly syndrome or big liver and spleen disease in chickens. At least three genotypes of aHEVs have been identified from chickens worldwide. However, there has been no reported identification of aHEV from Iranian poultry flocks.
Material & Methods:A commercial layer chicken flock located in Golestan province in the Northeast of Iran experienced an unusual increased mortality and decreased egg production when the birds reached 38 weeks in June 2014. The referred carcasses were necropsied andthorough gross and microscopic pathology examination and routine microbial investigation were performed.Reverse transcriptase polymerase chain reaction (RT-PCR) assay were carried out for the detection of avian hepatitis E, Newcastle disease, avian influenza, and infectious bronchitis viruses using primers specified for their helicase, fusion, matrix, and S1 genes, respectively.The purified DNA fragments of 141 bp region of aHEV helicase gene from the RT-PCR were sequenced at Bioneer Co., Korea. BioEdit, MegAlign and MEGA6 softwares were used for genetic analysis of the sequences.
Results & Conclusion: The average weekly mortality and decrease egg production were 0.18% and 20%, respectively, over an 11-week period. Gross lesions on necropsy were the enlargement of liver and spleen with mottled appearance and presence of subcapsular hematomas and attached blood clots on the surface of the friable livers. Histopathology evaluation of necropsied carcasses, with lesions ranging from acute periportallymphoplasmacytic hepatitis to chronic severe cholangiohepatitis with haemorrhage, vasculitis and amyloidosis, showed changes consistent with hepatitis splenomegaly syndrome. No significant bacteria except for *Escherichia coli* were recovered from the liver and spleen samples.Four pooled liver, bile and spleen samples were tested for aHEV by RT-PCR, and all samples were positive. Attempt to detect any Newcastle disease, avian influenza, and infectious bronchitis viruses, following RT-PCR, were unsuccessful. The sequence analysis of the partial helicase gene revealed that the Iranian isolate was closely related to the putative genotype 4 aHEV from Hungary. Comparative sequence analysis found identities of 79 to 90% between the helicase genes of the virus detected in this survey and those of other aHEV isolates which are available in the NCBI GenBank, suggesting extensive genetic heterogeneity in aHEVs worldwide. This is the first report of the presence of aHEVs in Iranian poultry flocks. Hence, poultry practitioners should be aware of the pathologic lesions of aHEVsin commercial layers.
Keywords: Avian hepatitis E virus, Hepatitis splenomegaly syndrome,Helicase gene, Sequence analysis, Iran

Influence of exposure time to neutral electrolyzed water on the reduction of contamination to *Salmonella typhimurium* and *E.coli* on skin and fresh poultry fillets

Fazlara A[1], Pourmahdi M[1], MalekzadehJ[2]
1- Department of Food Hygiene, Faculty of Veterinary Medicine, ShahidChamran University of Ahvaz, Ahvaz, Iran
2- MSc in Food Hygiene, Graduated from Faculty of Veterinary Medicine, ShahidChamran University of Ahvaz, Ahvaz, Iran
Corresponding author's e.mail:a.fazlara@scu.ac.ir

Objectives: In recent years, the electrolyzed water is considered as a useful disinfectant. From desirable characteristics of this disinfectant could be noted to inexpensive, safe, and no adverse impact on the environment and the lack of chemistry inserted. The aim of this study was to evaluate the Influence of exposure time to neutral electrolyzed water on the reduction of contamination to *Salmonella typhimurium* and *E.coli* on skin and fresh poultry fillets.
Materials & Methods: In present study, the neutralized electrolyzed water with 100 ppm free available chlorine was used for the exposure times of 1, 5, 10, 15 and 30 minutes on the inoculated skin (10^6 log/cm^2) and fresh chicken fillets (10^6 log/g) with mentioned bacteria. Also distilled water was used as control solution in similar circumstances.
Results & Conclusion: The results showed that the reduction of studied bacteria in skin and fresh poultry fillets were statistically significant ($P<0.01$) in all conditions and treatments with neutral electrolyzed water in comparing to distilled water. The results showed that the treated fillets with neutral electrolyzed water for 15 minutes lead to the complete disappearance of *E. coli*. The most reduction of *E. coli* in treated skin with neutral electrolyzed water was 2.63 log/cm^2 after 30 minutes of exposure. Also the most reduction of *salmonella typhimurium* in treated fillets and skin with neutral electrolyzed water after 30 minutes of exposure were 2.51 log/g and 2.54 log/cm^2 respective. In brief, the obtained results showed that the usage of neutral electrolyzed water was an effective method in reducing *Salmonella typhimurium* and *Escherichia coli* bacteria in fresh poultry fillets and skin. So consumption of neutral electrolyzed water for washing of slaughtered poultry carcasses in the lines and chillers of slaughterhouses could be in consideration as a suitable method of disinfection.
Keywords: Neutral Electrolyzed Water, *Escherichia coli*, *Salmonella typhimurium*

Seroprevalence of Newcastle disease virus and Avian influenza virus antibodies in breeder flocks of West Azarbayjan

Reza Rezapour*,Abolfazl Ghaniei[1],Peyman Montazami,ArmanFeizi
1Department of clinical sciences, Faculty of veterinary medicine, Urmia University, Urmia, Iran
***Corresponding author:Rezapour.vetpou@gmail.com**

Objectives: Respiratory complexes are serious threats to poultry industry causing a heavy financialburden on the owners of the industry and governments. Avian influenza virus (AIV) and Newcastledisease virus (NDV) are the two most important respiratory agents in poultry production. Decreasedefficacy of production and increased mortality rate are observed in affected flocks. Serologicalassays are useful tools to evaluate immune status of birds. Hemagglutination inhibition (HI) test is aserologic test which is commonly used in diagnostic laboratories.
Material and Methods: In order to determine NDV and AIV (H9N2 subtype) antibody titers inbroiler flocks of West Azarbayjan, blood samples were collected from 64 flocks of WestAzarbayjanavicultures and subjected to HI. The results were recorded and analyzed using version18 of SPSS statistical software.
Results: Mean antibody titers for NDV was 9.4, at least of antibody titers was 7 and peak of antibody titers was 12,85% (425birds)had antibody titers range of 7-10 which may be due to previous vaccination and15%(75 birds)were in range of 11-12(possibility of field challenge).Mean antibodytiters for AI was 8.7,at leastantibody titers was 7 and peak of antibody titers was12 ,94%(470 birds)had antibody titers range of7-10which may be due to previous vaccination and 6%(30birds)were in range of 11-12 which possible showed field challenge.There were some differences in antibody titers status of birds between different season of year.
Conclusion: High HI antibodies of AIV and NDV in serumof birds highlights important role ofthese infections in respiratory complexes of broilers in this area. Biosecurity measures, vaccinationand monitoring are effective tools to prevent introduction of such infections and decrease financiallosses due to these infections.
Keywords: Newcastle disease,Avian influenza, HI, breeder, West Azarbayjan.

A Survey on effects of several ND Live vaccines on HI antibody titers in broiler chickens

Shabani*M , Shateri S ,Hosseini Aliabad SA , Mousavizadeh MS.**
1)Graduated D.V.M , Islamic Azad University , Babol branch , Babol , Iran
2)Department of Avian disease , Faculty of Veterinary Medicine , Islamic Azad university , Babol branch , Babol , Iran.
3)Veterinary department , Faculty of agriculture , Islamic Azad university , Chalous branch , Chalous , Iran
4)Islamic azaduniversity ,Babol branch , Babol , Iran.
Corresponding author`s email: morteza.shabanidvm@yahoo.com

Objectives: The aim of this study was to investigate the serological differences of Newcastle vaccination programs in broiler chickens.
Materials &Methods:in this study 150 day-old Ross broiler chicks divided into 5 groups (1,2,3,4,5) that each of them contain 30 chicks and each group consist 3 repetitions. All rearing conditions was same in all 5 groups. Group 1 was control group and any vaccine wasnot used. In group 2 only killed ND vaccine was used. In group 3 ,Hitchner B1 and ND killed vaccine was used. In group 4 , killed ND vaccine , Hitchner B1 and Avinew vaccines was used. In group 5 , killed ND vaccine , Hitchner B1 and Lasota was used. On day 1,14,21,28,35 and 42 blood samples were collected and examined with HI serological test.
Results and conclusion: results showed that groups (2,3,4,5) had higher antibody titers comparison with control group after 28th days. In group 2 , antibody titers were low after 28th day. It revealed that only killed vaccine couldnot produce protection against Newcastle disease. Also , antibody titers due to Avinew and Lasotavaccines (group 4 and 5) did not show no significant difference (p<0/05) , but in group 5 was higher. It means that Lasota vaccine gives highest antibody titers.However, the birds show more reactions to Lasota vaccine specially, in inappropriate management conditions such as poor ventilation , high density and presence of other respiratory pathogens . It seams that in this conditions Aviniew is better.
Keywords : Newcastle disease , broiler chickens , Live vaccine , HI test.

Prevalence and Antibiotic susceptibility of *Salmonella*strains isolated from Poultry farms in Urmia, Iran

JafarTaifebagherlu[*1], Alireza Talebi[1]
1. Department of clinical sciences, Faculty of Veterinary Medicine, Urmia University, Urmia, Iran.
Corresponding author's email:J.tayefeh@urmia.ac.ir

Objectives: This study was conducted to determine Prevalence and Antibiotic susceptibility of *Salmonella*strains isolated from poultry farms in Urmia. *Salmonella* infection is one of the most important diseases of poultry, and genus *Salmonella* includes more than 2500 antigenically distinguishable variants (serovars). Among salmonella diseases in poultry, pullorum, fowl typhoid and paratyphoid diseases cause economically significant losses in poultry industry.Poultry and poultry products are considered to be one of the major sources of salmonella organisms for humans and consider major public health concern.
Materials & Methods:A total of 380 samples were collected from poultry farms (broiler, layer and breeder) of Urmia city. Samples were taken from January to September 2015. Swabs samples from heart, liver, gall bladder, intestine and yolk sac were obtained, transferred to enrichment media (Selenite F and Tetrathionate broth) in screw-caped bottles and incubated at 37oC for 48 hours as recommended for isolation, identification and characterization of avian pathogens.19 The samples also transferred to differential plating media such as MacConkey, SS-Agar and TSI and incubated at 37°C for 24 hours for presumptive identification. Antibiotic sensitivity test was conducted in Hinton agar using nine antibiotic disc according to disc-diffusion (Kirby-Bauer) methods with isolated salmonella strains.
Results & Conclusion: Salmonella strains were isolated in 30 of 380 samples with prevalence rate of 7.9 %. Isolated *salmonella* were tested for antibiotic susceptibility via disk diffusion method using the most recommended antibiotics discs and results were interpreted using the NCCLS criteria. The highest antibiotic susceptibility were recorded for Fosbac (72.2%), Florfenicol (63.8%) and Lincospectin (50%) while, the highest antibiotic resistance were recorded for Flumequine and Gentamycine. In conclusion, Fosbac (*Fosfomycin)* and florfenicol antibiotics are recommended for treatments of *salmonella* infections in broiler and even though for paratyphoid infections in breeder farms.
Keywords:*Salmonella*, prevalence, antibioticsusceptibility, poultry,urmia

Phylogenetic group determination of *Escherichia coli* isolated from broilers and layers with colibacillosis

Peyman Nakhaee, Jamshid Razmyar, Seyed Mostafa Peighambari
pmnakhaei@gmail.com

Colibacillosis is one of the most common infectious bacterial disease of poultry. A total of 170 *Escherichia coli* isolates obtained from broiler and layer flocks implicated with colibacillosis between 2011-2014 were subjected to phylogenetic analysis. Of 150 *E. coli* isolated from typical lesions of local and systemic colibacillosis, 54 (31.8%), 37 (21.7%), 36 (21.2%) and 43 (25.3%) isolates belonged to groups A, B1, B2 and D, respectively. The distribution of phylogenetic types for 20 isolates, obtained from apparently healthy birds as controls, were 9 (45%), 5 (25%), 1 (5%) and 5 (25%) for A, B1, B2 and D, respectively. Overall, the phylogenetic groups B2 and A, were predominant in isolates form diseased and apparently healthy birds, respectively. Results of this study represent genotypic diversity among different manifestations of avian colibacillosis.
Key words: Colibacillosis, *Escherichia coli*, phylogenetic types and broiler and layer flocks

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Study the effect of physical size of clinoptilolite and sodium zeolite A on meat quality of broilers fed rations contaminated and noncontaminated with aflatoxin

Parizadian Kavan B[1]*, Shams Shargh M[2]

[1]Department of Animal Science, Lorestan University, [2]Faculty of Animal Science, Gorgan University of Agricultural Sciences and Natural Resources
Corresponding author's email: Parizadian.b@lu.ac.ir

Objectives: This experiment was conducted for determining of the effect of physical sizes and levels of clinoptilolite and sodium zeolite A on meat quality of broilers fed rations contaminated with aflatoxin.
Materials & Methods: To investigate the effect of different sizes and levels of clinoptilolite and sodium zeolite on meat quality of broilers, an experiment was carried out using 896 broilers on completely randomized design with two levels of clinoptilolite and sodium zeolite A (1.5 and 3%) and three sizes (<0.25 mm, 0.4- 0.8 mm and 1- 2 mm). In day 42, two broilers from each pen, with body weight similar to pen average body weight, was selected and slaughtered to determine meat quality. These samples were analyzed for 2-thiobarbituric acid reactive substances. Lipid oxidation was measured by the 2-thiobarbituric acid distillation method and results were expressed as TBARS in mg malonaldehyde (MDA) kg^{-1} meat. The data obtained from the experiment were analyzed by using SAS statistical programs with the ANOVA.
Results & Conclusion: Thigh meat samples of broilers fed by non-contaminated diet with aflatoxin had the lowest amount of malonaldehyde and the highest amount of malonaldehyde were observed in thigh meat samples of broilers fed by contaminated diet with aflatoxin. Using of 3% clinoptilolite with particle size of 1- 2 mm decreased amount of malonaldehyde compared to diet contaminated with aflatoxin ($P<0.05$). Therefore, it can be concluded that the supplementation of diet contaminated with aflatoxin with clinoptilolite has positive effects on meat quality in broilers.
Keywords: Broilers, Clinoptilolite, Sodium zeolite A, meat quality, Aflatoxin

Study on the potential immunization of thermo-stable ND.TR.IR vaccine using different methods of vaccination in village chickens

Reza Zare[1]، Mohammad Hassanzadeh[2]، Mohammad Abdosha[3]
[1]DVSc candidate of Poultry disease, University of ShahidChamran, Ahvaz, Iran
[2]Professor of Poultry Diseases, Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran
[3]Assistant Professor, Razi Vaccine & Serum Research Institute
Corresponding Authors' Email:Reza.zare90@yahoo.com

Introduction: Poultry rearing in villages of Iran is very common and considered as a source of income for the family. Evidences indicate that about 70 to 80 percent of mortality in chicks reared using traditional methods in villages is due to different causes and mostly of Newcastle disease. Because of constant presence of the virus in the area, the only way to prevent the disease is vaccination. But as we knowvaccination has huge failures due to hot climate of Iran and management difficulty same as cold chain.
Materials & Methods: In this study200day-old ofruralchicks were divided into 5 different groups with different vaccination programs.TheimmunogenicityofthermostableNewcastle diseasevaccinewas evaluated and compared with common vaccines. Group1:control group, no received ND vaccine. Group2:Vaccination with B_1 and LaSotavaccinesbyeye dropon days10 and 20
Group 3:VaccinationwiththermostableNewcastlediseasevaccine(ND.TR.IR ,Razi Vaccine & Serum Research Institute) byeye dropat days10and20 Group4:VaccinationwithND.TR.IR vaccineon days10 and20bydrinking water.Group5:VaccinationwithND.TR.IR vaccinebymixingthefeedon days10 and20.
All groups except control group were challenged intramuscularly at day 28 (20 birds from each group were selected randomly for challenge).Blood sampleswere collected at five different days including day 1, 10, 20,challenge day (day 28) andday 40.HI test was performed for collected blood samples.
Results & Conclusion: Based on HI titers,ND.TR.IR vaccine was able to induce acceptable protection against Newcastle disease and reduced the mortality rate. Although there have been differences in protection between different methods used for vaccine application (eye drop, drinking water and feed mixed). Eye drop method was able to induce better protection compared with the other two methods.
The main point of ND.TR.IR vaccine is the thermostability and easy transport without need to use cold chain. Secondly, applying of eye drop vaccination in rural chickens may be difficult,but is preferred.If notsuch vaccine also could beapplied by drinking water or feed mixed, respectively.
Keywords: Newcastle Disease, Thermostable Newcastle disease vaccine.

An investigation into Gram negative bacterial agents responsible for early mortality in Japanese quail chicks

Boroomand, Z[1].,Jafari, R[2]., Gharibi,D.[3],Kazemi,K.[4]
1.2.3Assistant Porofessor, Department Of Avian Medicine, Faculty of Veterinary Medicine ShahidChamran University Of Ahvaz, Ahvaz, Iran
4- Graduated from Faculty of Veterinary MedicneShahidChamran University of Ahvaz, Ahvaz, Iran

Objectives: In order to study Enterobacteriaceae contamination of dead quail chicks and the antibacterial resistance of isolated bacteria, 100 diseased quail chicks which did were transferred to the microbiology laboratory of poultry science department.
Materials and methods: Swab samples were collected from the liver and yolksac contents of individual quail chicks, and the swabs were streaked on MacConkey, Salmonella–Shigella and Brilliant Green agars, all cultured media were incubated at 37 °C. After 24-48 h, the plates were observed for colony formation. Suspected colonies were subcultured on MacConkey agar. Identification of the isolated bacteria was performed using standard bacteriological and biochemical procedures. Final confirmation of Salmonella serotypes were done byRaziinstitute. Disc diffusion test on Muller– Hinton agar was used to determine the sensitivity of bacterial isolates to antibacterial agents.
Result and conclusion: Bacterial cultures of diseased quail chicks eggs showed 88 % contamination with Enterobacteriaceae. The isolation rate of Ecoli, Salmonella spp., klebsiella, proteus and entrobacter was 53.4, 12.5, 14.77, 10.22 and 9.9% respectively.
With respect to resistance of antimicrobial agents to Salmonella spp.,Ecoli, Klebsiella, Proteus and Entrobacter, all of the 12 antibiotics used (Cephalexin, Ciprofloxacin, Florphenicol, Gentamycin, Lincospectin, Soltrim, Phosphomycin, Cefotaxime, Ceftriaxone, Enrofloxacin, Doxycycline and Oxytetracycline). There were no observed drug resistance among the Ecoli, salmonella, klebsiella and proteus isolates.
Salmonella showed 100 % susceptibility to gentamycin, Soltrim, Oxytetracycline, Phosphomycin, Florphenicol and Cephalexin, 90.9% susceptibility to Doxycycline and Ceftriaxone , 36.3% susceptibility to Cefotaxime, Lincospectin and Ciprofloxacin, 27.2 % susceptibility to Enrofloxacin. 100% isolates of *E. coli* isolates showed susceptibility to Ceftriaxone, Drug susceptibility to Cephalexin, Ciprofloxacin, Florphenicol, Gentamycin, Lincospectin, Soltrim, Phosphomycin, Cefotaxime, Enrofloxacin, Doxycycline and Oxytetracycline were 63.8, 65.9,40.4, 78.7, 48.9, 85, 95.7,31.9, 23.4 and 25.5 respectively.
100% klebsiella isolates showed susceptibility to Ceftriaxone, Drug susceptibility to Cephalexin, Ciprofloxacin, Florphenicol, Gentamycin, Lincospectin, Soltrim, Phosphomycin, Cefotaxime, Enrofloxacin, Doxycycline and Oxytetracycline were 61.5, 69.2, 38.4, 61.5, 46.1, 92.4, 92.4, 61.5, 46.1, 30.7 and 69.2 respectively.
100% proteus isolates were susceptible to Phosphomycin, Drug susceptibility to Cephalexin, Ciprofloxacin, Florphenicol, Gentamycin, Lincospectin, Soltrim, , Cefotaxime, Enrofloxacin, Doxycycline, Oxytetracycline andCeftriaxone were 44.4, 66.6, 55.5, 88.8, 44.4, 44.4, 77.7, 66.6, 66.6, 55.5 and 77.7 respectively.
100% Entrobacter isolates were susceptible toSoltrim and Ceftriaxone. Drug resistance to Lincospectin and Oxytetracycline were 100%.
Keywords: Japanese quail, Enterobacteriaceae, Antibacterial resistance. Liver, Yolk sac.

Serogrouping and Drug Resistance Analysis of Salmonella spp. Isolates from Broiler flocks

Ghorbani Ranjbary Ali[1*], Akrami Rosa [2] ,Tayyebi Seyyed Emad aidin[3]

1. *PhD Candidate, Department of Biotechnology, School of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran.*
2. *Young Researcher and Elit Club ,Sanandaj Branch , Islamic Azad University , sanandaj ,Iran*
3. *PhD Candidate, Department of Physiology, School of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran.*

Dr_alighorbani87@yahoo.com

Objectives: Characterization of salmonella spp. isolated from broiler chickens in Kerman in iran, via serogrouping and drug resistance analysis to 7 commonly used antibacterial agents in Iranian poultry industry.
Materials & Methods: 226 pooled samples were collected from 26 broiler flocks at different ages in Kerman. Standard culture method was employed for Salmonella isolation. The slide agglutination test was done using polyvalent antisera and different A-I serogroup-specific somatic antisera. Susceptibilities to 7 commonly used antibacterial agents in Iranian poultry industry (danofloxacin, enrofloxacin, flumequin, neomycin, florfenicole, linco-spectin, tetracycline,) were tested by determining the MICs using agar dilution method.
Results & Conclusion: Sixty two Salmonella were isolated from 26 broiler flocks and 226 pooled samples. Twenty five Salmonella from day old chicks, 15 Salmonella from broiler flocks at 1-3 weeks and 22 salmonella from broiler flocks up 5 weeks were isolated. Fifty Salmonella isolates from broiler belonged to group D and 11 isolates belonged to group C. One Salmonella was found as an unknown serogroup. The resistance patterns of 62 isolates to 7 common commercial antibacterials in poultry industry of Iran were included 17 different patterns. 5 isolates were resistant to all 7 antibacterial agents. The highest resistance was associated with tetracycline and linco-spectin. This study could suggest a high incidence of Salmonella in broiler flocks in Kerman with high rates of drug resistance that could be a seen as potential of resistant Salmonella transfer to human.
Keywords: Drug resistance, Antibacterials, Salmonella, Serogrouping, Broiler, Kerman**.**

Swollen head syndrome in an ostrich farm

Arabha H[1*] ,Karimi M[2], ZamaniMoghaddam A[3]

[1]Resident of Poultry Diseases, Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Shahrekord, Shahrekord, Iran;[2]Department of Pathobiology,[3]Department of poultry science, Faculty of Veterinary Medicine, University of Shahrekord, Shahrekord, Iran

Corresponding author's email:hajar.arabha@gmail.com

Objectives: Swollen head syndrome (SHS) is an acute to subacute cellulitis. SHS is characterized by swelling of the periorbital and infraorbital sinuses. The disease was observed in chicken, turkey and guinea fowl.
Materials & Methods: In August 2014 a flock of 1-month-old ostrich in south west Iran showed clinical signs of swelling of the head, eyes and face and mild depression. Half of the birds were affected. They showedapathy and torticollis. Tic-like movements of the head were seen in some birds. In coordination, opisthotonus and recumbency were also seen. Total mortality reached about 10%. Post mortem examinations revealed conjunctivitis and edema of the head.
A guarded cotton-tipped swab was used to collect samples from the periorbital and infraorbital sinuses. Samples were cultured on EMB and MacConkey agar plates. Plates were incubated in aerobic conditions at 37°C for 24-48 hours. The head were fixed in 10% buffered formalin and transmitted to the histopathology lab of the Shahrekord University for routine histological examination.
Antibiogram test was performed with the bacteria isolated from samples. Antibiotic susceptibilities of isolates were determined by disk diffusion method on Mueller Hinton agar (Oxoid) plate. Plates were incubated at 37°C for 24 hours. Finally, growth inhibition zone diameter of each antibiotic disk was measured.
Results & Conclusion: In bacteriological examination, E. coli was isolated from the periorbital and infraorbital sinusesswab samples.
In histopathology examination, accumulation of inflammatory cells, particularly heterophils were observed in the periorbital and infraorbital sinuses.

1-1-1- In according to antibiogram results, microbial agents that isolated periorbital and infraorbital sinuses were the most susceptible to Linco-Spectin combination. The remaining birds were treated with Linco-Spectin combination (0.1cc/5kg, I.M., for 3 days).

In ostriches respiratory disease most frequently causes rhinitis, sinusitis, conjuctivitis, laryngitis, tracheitis and airsacculitis. E. coli was isolated from the conjunctiva and the sinus from an emu.
E. coli were isolated from ostriches with respiratory disease. In this study E. coli were isolated from the periorbital and infraorbital sinuses. These results are similar to the other above mentioned investigations.
Key words:ostrich, Swollen head syndrome, E. coli.

Detection and Identification of Avian Hepatitis E Virus in Broiler Breeder Flock in Iran

Morshed R[1], Hosseini, H[2*]

[1]Agriculture and Veterinary group, Iranian Institute for Encyclopedia Research, Ministry of science, research and technology, Tehran, Iran,[2]Department of Clinical Sciences, Faculty of Veterinary Medicine, Islamic Azad University, Karaj Branch, Karaj, Iran

Corresponding author's email:hosseini.ho@gmail.com

Objectives:Avian hepatitis E virus (aHEV) is member of the genus *Hepevirus* within family *Hepeviridae* and have been identified from chickens with big liver syndrome and hepatitis–splenomegaly syndrome. Each syndrome mainly causes increased deaths, reduced egg production, and enlarged liver and spleen. Avian HEV could be separated into four different genotypes: genotype 1 in Australia and Korea, genotype 2 in USA, genotype 3 in Europe and China and novel genotype 4 in Hungary and Taiwan.The purpose of this studywas to identify aHEV in poultry in Iran.

Materials and Methods: In Jan 2015, one 34-week-old breeder broiler flocks experienced 5% decrease in daily egg production and slight increase in mortality rates. Post-mortem examination revealed changes consistent with hepatitis-splenomegaly syndrome, including hepatomegaly with serosanguineous fluid in the coelomic cavity. A total of five liver samples from dead birds were tested for avian hepatitis E virus by Polymerase chain reaction.

Results and Conclusion:No significant bacteria were recovered from liver samples, but all liver samples from affected chickens contained detectable amounts of avian hepatitis E virus (aHEV) RNA as determined by polymerase chain reaction. Sequencing and phylogenetic analysis of a 186-base-pair fragment of the helicase gene demonstrated less than 92% nucleotide identity between the Iranian aHEV genomes and other aHEV reported from around world.To the best of our knowledge, this is the first report of detection of aHEV in Iran.

Keywords: Avian hepatitis E virus, Broiler breeder, PCR, Iran

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Simultaneous infection with avian influenza subtype H9N2 Metavirus Broiler in Fars Province

Ghorbani Ranjbary Ali[1*], Akrami Rosa[2], Bossaghzadeh Farhad[3]

1. *PhD Candidate, Department of Biotechnology, School of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran.*
2. *Young Researcher and Elit Club ,Sanandaj Branch , Islamic Azad University , sanandaj ,Iran*
3. *DVM ,Young Researcher and Elit Club ,Kazerun Branch , Islamic Azad University ,Kazerun ,Iran*

Dr_alighorbani87@yahoo.com

Avian pneumovirus (Metapeumovirus) is characterised with respiratory signs and rhinotracheitis in turkey (TRT) and Swollen Head syndrome (SHS) in chickens and may cause drop in egg production in layer and breeders. In Iran, the disease has not been investigated in broiler chickens , until now. In this study , 400 serum samples were taken from 35 broiler chicken flocks, slaughtered in Shiraz, by history recording. All flocks divided into 2 groups: vaccinated and nonvaccinated against avian influenza(AI). Serum samples were tested with avian pneumovirus enzyme-linked immunosorbent assay (ELISA) kit. Also, AI haemagglutination inhibition (HI) titer were determined in all aforementioned flocks. The results shows, from 400 broiler chickens,302 (75.5%) were positive for avian pneumovirus antibody. The seroprevalence of pneumovirus in vaccinated flocks against AI was lower than nonvaccinated flocks and 79.5% of broiler chickens in nonvaccinated flocks were positive for AP and AI antibody, simultaneously. Therefore, it seems that Controling of usual respiratory diseases (eg.AI) has main role in controling of avian pneumovirus. In considering to high prevalence of avian pneumovirus in broiler chicken flocks, it is important to investigate pathogenesis of avian pneumovirus to design a suitable sterategy for controlling of this infection.

Key words: Broiler chicken, Avian pneumovirus, Metapneumovirus, ELISA.

Newcastle Virus Antibodies In*Gallus Gallus*

⁎Ebrahim Babaahmady

Faculty of Veterinary Medicine University of Ilam Iran

ebrahim_12@yahoo.com

It is a highly contagious disease, fatal course, high economic impact, as it represents a limiting factor export of poultry products.
The present research work evaluated the results of 100 serum samples collected to birds reared in commercial farms (broilers, egg-laying hens, and breeders) and 100 serum samples collected to birds reared in non-technical farms (backyard and fighting birds) that were analyzed by the hemoagglutination inhibition (HI) test for the Newcastle disease (ND).
Samples were collected by standard norm. An interpretation table for the results of the hemoagglutination inhibition test was designed by experts taking into consideration the number and type of vaccines against ND used. The prevalence rate ofbirds with antibody titers compatible to a Newcastle virus challenge was 1.8 ± 1.4% in birds from commercial farms and 9.9 ± 3.4% in birds from non-technical farms. The logistic regression analysis showed that birds from non-technical farms represent a risk factor ($p<0.0001$) in obtaining antibody titers compatible to a Newcastle virus challenge (Odds Ratio was 6.04 with confidence interval of 2.5-13.8) as compared to birds from commercial farms. The results showed that the ND virus is endemic in the area of ILam, especially in birds of non-technical farms.
Key words: Newcastle disease, hemoagglutination inhibition, prevalence, antibody,serum

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Mites And Insects Diagnosed In Turkeys And Quails

⁎Ebrahim Babaahmady

Faculty of Veterinary Medicine University of Ilam Iran

ebrahim_12@yahoo.*com*

Within thePhylumArthropoda there isaconsiderable group ofparasitescanaffectingdomestic birds, the samecan be foundbothin the feathers,asconnective tissue, skin andtractRespiratory.
The investigated samples in these groups of bird were grouped in the corresponding periods to the years 2013 and 2014. In the first of this it has been worked one duck and 3 quails. The species diagnosed here for each of the mentioned groups were: Megniniaspp in ducks (Cairinamoschata) and Megniniaginglymura in quails (Coturnixcoturnix). In the 2014 period were diagnosed 22 ducks, 9 geese and 7 turkeys and this poultry groups it were identified in ducks: Megniniaginglymura, Megniniaspp and Menopongallinae; in geese: (Anseranser): Bresphoscelesdiscidicus and lice classified as Neocolpocephalumturbinatum (Amblycera: Colpocephalidae) and in turkeys: (Meleagrisgallopavo), Megniniaginglymura.
Key word: Ducks, Turkeys, Quails, Mites, Lice

Plaque formation by Newcastle virus strain V4 on cell culture and characterization with RT-PCR

Mehrabanpour*,M.J. Sobhani,S

**Razi Vaccine and Serum Research Institute, Shiraz-Iran, Islamic Azad University, Jahroum*

Cloned vaccines are used in many countries nowadays.One of the ways for cloning a virus is propagation of the virus on cell culture to obtain discrete different plaques in order to study their morphology and genetics. In this study monolayer Madin-Darby Canine Kidney (MDCK) cell cultures were prepared by standard method. Various dilutions of the viruses were inoculated into monolayer MDCK cell cultures that were supplemented with magnesium sulfate and trypsin, and over laid with agar medium. The viruses could reproduce on these cells and caused cytopatic effect and plaques. At 10^{-6} virus dilution, 6 various shape and size discrete plaques were obtained and inoculated into allantoic fluid9-11 day embryonated eggs. After 48 hrs, the allantoic fluids contain plaques were harvested and their RNA extracted. Cleavage site of fusion protein, with RT-PCR test was performedand the PCR products were purified and sequenced. The sequences of nucleotides and amino acids for each plaque were compared with those of the registered strain at gene bank as well as with each other. Molecular studies showed that all plaques are lentogenic strain of Newcastle disease virus and has about 97% to 99% homology with the strain V_4 in the gene bank. The aim of this study is to produce clear plaque by V4 strain of NDV on MDCK cell line and studies the molecular variations among them.

RT-PCR, Newcastle disease virus (V_4),Cell culture

Investigation on Prevalence of Pigeons Contamination with Protozoa *Trichomonas Gallinae* in Qazvin City During 2014

Jaber Davoudi, Afshin Bahman shabeatari

This study was performed to examine the contamination of 200 pigeons from various districts of Qazvin City with *Trichomonas* via taking swaps from birds' mouth and larynx and testing them by wet mounting on microscope slides. Out of 200 studied pigeons, 143 ones (71.5 %) were contaminated with *Trichomonas gallinae* from which the highest and lowest level of infection were observed in southern (77 %) and northern (56 %) regions, respectively. Moreover, contamination level in warm season (82 %) was more than that in cold season (60 %). Pigeons older than 3 years old showed the lowest amount of infection, and there wasn't much difference in infection level between two genders. Generally, this study indicated pigeons' contamination with *Trichomonas* is very prevalent in Qazvin and decreases as birds getting older.

Keywords: *Trichomonas*, home pigeon

Molecular Identification of *Ornithobacterium* Isolates from Poultry in Markazi Province

Seyed Davood Hosseini1*,ParisaEizadkhah2, Ahmad Ali Purbabai 2,

1) Razi vaccine and serum research institute, Markazi branch, Arak, Iran.

2) Department of Microbiology, Islamic Azad University, Qom branch, Qom, Iran.

Corresponding Author:hosseinida@yahoo.com

Objectives: Ornithobacteriosis is an infectious disease of avian species that has been reported in almost all countries around the world. The first recorded isolation ofORTwas made from turkeys in Germany in 1981. ORThas been isolated from chickens, ducks, geese, guinea fowls, gulls, ostriches, partridges, pheasants, pigeons, quails, rooks and turkeys so far. In Iran, ORT infection was reported by Banani et al for the first time.The aim of the study was to identify the *Ornithobacterium* isolated in Markazi province using molecular analyses.
Materials and Methods: Sampling and biochemical isolation has been performed inRazi vaccine and serum research institute.Randomsampleof20 unitsand231birds has been collectedfromthe Arak poultry farms during August 2011 to March 2013. All of the fifteen isolated sampleswere cultured in blood agar media with 5µg/ml Gentamicin and incubated at 48 hours in 37˚C. Then all samples were subjected to PCR and sequencing for 16S rRNA .
Results & Conclusion:PCR results and observations 784 bpband on the agarose gel confirmed the existence of genera Ornithobacterium. Also compare sequences obtained from isolated with sequences available in GeneBank showed that 98-100% was similar to Ornithobacterium *rhinotracheale*strain that Expression of existence these bacterial species in the farms of Markazi province. In conclusion,Ornithobacterium *rhinotracheale*can be dominant species from Ornithobacterium in the farms ofMarkazi province.
Key words:ORT, PCR, poultry, 16SrRNA, respiratory disease

Genotypic studies of Chlamydia in turkey flocks

TatariZ*,PeighambariSM, MadaniSA

Department of Avian Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran

Corresponding authors's email: zolikha.tatari@gmail.com

Background: Avian chlamydiosis is a zoonotic disease of birds caused by the intracellular bacterium *Chlamydia psittaci*. Avian chlamydiosis leads to severe respiratory disease in young turkeys and egg production losses in layers.
Objectives: Due to paucity of information about the prevalence of chlamydial infection in the turkey population in Iran, this study was conducted to detect chlamydial infection in some Iranian turkey flocks in different provinces.
Materials&Methods: A total of 207 samples were taken from turkeys and verified as *Chlamydiaceae*by*Chlamydiaceae*-specific real-time polymerase chain reaction (real-time PCR) by detection of the 23S RNA gene of *Chlamydiaceae*. Positive samples, then, were investigated for the presence of *C. psittaci*by a nested PCR.
Results&Conclusions: Seventeen of 177 samples, corresponding to 13 farms of 48 examined farms (27%) were positive for *Chlamydiaceae*by real-time PCR(Ct values ranging from 34 to 38). None of positive samples were found to be *C. psittaci*in the nested PCR.This study showed no *C. psittaci* infection in the turkey population in Iran. We recommend investigation on other farm animals and wildpopulations for possible chlamydial infection and for better understanding of the source and epidemiology of this agent. Duetothe challenges that exist for sampling and the relevant impacts on reducing positive samples, investigation by parallelandcomplementarytechniques may be useful in showing the true prevalence of infection in the target populations.
Keywords:*Chlamydia psittaci*, turkey, real-time PCR, nested PCR, Iran

Anatomical study of alimentary canal in Red-billed chough (*Pyrrhocorax pyrrhocorax*)

Abbasi M[1] , Rostami M[2*],Pirhadi F[2],Pirzadi A[1]
[1]*Department of basic sciences, Faculty of Veterinary Medicine, Lorestan University, Khorramabad,Lorestan, Iran.*
[2]*Student of Veterinary Medicine, Faculty of Veterinary Medicine, Lorestan University, Khorramabad,Lorestan, Iran.*
Corresponding author's email: Dr.miladrostami@yahoo.com

Objective: Animal digestive system is adapted to their dietand in birds there are differences in the alimentarytract.Red-billedchough belongs to Family crows and sparrows order.
Material and methods: In the present study, the anatomical characteristics of the Red-billed chough'salimentary canal areevaluated. Two healthy crows were prepared and euthanasia with ether.Then the samples were kept in fixative solution. Biometry of different parts of the digestive system is done and images that needed to be carefully prepared.
Results and conclusion: Red-billed chough has very short and straight cecum.Length of cecum is less than one centimeter.While the chicken cecum length is more than twenty centimeters. This bird does not have crop.
The total length of the small and large intestine in this kind of crows, in comparison with chicken is short.
Key words: Alimentary canal, anatomy, Red-billed chough, Pyrrhocorax

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Effects of Peripheral Metabotropic Glutamate Receptor Antagonist and Nociceptin/orphanin FQ Receptor Antagonist on Feeding in Japanese quail

Vaezi E *Hajian SH[1], Hajinezhad MR[2] Mokhtar pour[3] A
[1] *doctor of veterinary medicine. Veterinary Clinic, Zabol, Iran*
[2] *Department of Basic Sciences, Faculty of Veterinary Medicine, University of Zabol, Zabol, Iran*
[3]*Research Centre of Special Domestic Animal, University of Zabol, Zabol, Iran*
Corresponding author's email:Elham.Vaezi24@yahoo.com

Objectives: [Nphe[1]]NC (1–13) NH2, a potent and selective antagonist for the Nociceptin/orphanin FQ (N/OFQ) receptor, exhibits appetite-suppressing properties in normal conditions. The effect of peripheral type 1 metabotropic glutamate receptor (mGluR I) Blockade on Nociceptin/orphanin FQ induced food consumption in food-restricted quails was investigated.
Materials & Methods: 40 birds were used in each experiment. All solutions were injected on the same day during 09:00–12:00 in replicates of 10 birds. Fresh food was supplied at the time of injection, and cumulative feed intake (grams) was recorded at 180, 360 and 540 min. Cumulative feed intake is presented as mean ± SD and analyzed using a one-way analysis of variance (ANOVA) at each time period.
Results & Conclusion: The obtained data indicated that administration of (mGluR I) receptor antagonist (YM-202074) at 100 mg/kg, induced hypophagic effect in food-restricted quails. The intraperitoneal (ip) injection of selective Nociceptin/orphanin FQ (N/OFQ) receptor agonist increased food intake in food-deprived quails; the effect was statistically significant at the three doses tested (4, 8 and 16 mg/kg). The most efficacious dose appeared to be (16 mg/kg). Food consumption and latency time to feeding decreased following ip injection of (YM-202074). To examine whether this anorectic effect involves Nociceptin/orphanin FQ (N/OFQ) receptor blockade, birds received intraperitoneal co-injection of nociceptin receptor antagonist and YM-202074. Submaximal dose of nociceptin antagonist [Nphe1]NC (1–13) NH2 (3 mg/kg) significantly increased (mGluR I) antagonist -induced anorexia. The results of the present study indicated that nociceptin antagonist significantly increased the anorectic effect of type 1 metabotropic glutamate receptor antagonist, and provide evidence that the anorexia induced by YM-202074 might be mediated by interaction with N/OFQ receptors.
Key Words: nociceptin, Japanese quails, mGlurI, food intake

Experimental concurrent infection of Avian Influenza (H9N2) and Infectious bronchitis virus serotype 793/B in SPF chickens

Bijanzad P[1*], Momayez R[2], Bozorgmehrifard MH[3], Hablolvarid, MH[2], Pourbakhsh SA[2], Azizpour A[4],Mahmoodzadeh M[2]

1. Departement of Clinical Science, Tabriz Branch, Islamic Azad University, Tabriz, Iran
2.Razi Vaccine & Serum Research Institute, Karaj, Iran
3. Departement of poultry disease, Science and Research Branch, Islamic Azad University, Tehran, Iran
4.Meshginshahr Faculty of Agriculture, University of MohagheghArdabili, Ardabil, Iran
Corresponding author's email: drbijanzad@gmail.com

Objective: Avian influenza (AI) and Infectious bronchitis virus (IBV) serotype-793/B are important viral diseases in commercial poultry of Iran. It seems mixed infections of IB and AI viruses naturally occur.
Materials & Methods: Tissue dissemination of A/chicken/Iran/m.1/2010 (H9N2) virus and IR/773/2001(IBV) were investigated in different organs of SPF chicks. Eighty four one-day-old SPF chicks were divided randomly into four groups (21 chicks per group) in separate positive pressure isolators. At the age of 12days-old the chicks in group-1 were inoculated with 10^6EID_{50} AIV, group-2 were inoculated with 10^3EID_{50} IBV, group-3 were inoculated simultaneously with 10^6EID_{50} AIV and 10^3EID_{50} IBV serotype-793/B by eye drop and group-4 was kept as the control group. The samples from various tissues were collected at 2-12 days post-inoculation (PI). The RT-PCR assay was used for detection the viruse dissemination.
Results & Conclusion: In group-2, IBV was detected from all examined tissues except spleen, in group-3 it was detected from all tissues except spleen but virus replication in trachea and bursa was extended in this group. In group-3 AIV was detected in all tissues except cecal tonsils, whereas in group-1 it was only detected in the trachea, lungs, spleen and cloaca. Histopathological lesions were severe in co-infected group and include partial follicle atrophy in bursa, thymus cortical layer thinning, prolongation of recovery in lung and trachea. In kidney hyperemia, hemorrhage, and necrosis of tubules was seen in all treatment groups.The results indicated that the co-infection with these viruses cause severe pathological changes and extend dissemination of the viruses in various organs.
Keywords: Avian Influenza (H9N2), Infectious Bronchitis (793/B serotype), Co-Infection, SPF chicks, Molecular, Histopathology

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Evaluation the Effect of *Enterococcus Facium*Isolates from *CoraciasGarrulus* and Commercial Probiotic on Immune System and Intestinal Flora of Broiler Chickens

Jahanbani[1], H., Hosseini-Vashan[2]*. S.J., Ghiasi[3], S.E. Mohammadi[2], A.

1- Student of poultry production management and husbandry, Animal Science Department, University of Birjand,. Iran
2- Animal Science Department, University of Birjand, Birjand, I.R. Iran.
Email: Iran jhosseiniv@birjand.ac.ir

Objectives: The purpose of this study was to investigate the effect of *Enterococcus facium* isolates from intestine of *CoraciasGarrulus*and commercial probiotic on performance and carcass characteristics parameters of broiler chickens.
Material & Methods: A total of 385 chicks were arranged into 35 experimental units with 7 treatments with 4 replicates (10 birds each) in a completely randomized design. The treatments were included control, spraying, drinking and spraying+ drinking of the *Enterococcus facium* isolates, and spraying, drinking and spraying+ drinking of commercial probiotic. At the end of the experiment, two birds from each replicate were sacrificed and bleeding, then blood was gathered and plasma was extracted. The jujenum content was gathered for microflora count at 42 d. The data were analyzed by SAS software.
Results & Conclusions: The results were revealed that addition of *Enterococcus facium* isolates and commercial probiotic were decreased the serum cholesterol and triglyceride concentration of broilers. The antibody response against SRBC was increased in birds received *Enterococcus facium* isolates or commercial probiotic as compared to control groups. The IgG and IgM were not affected by treatments. The jejunum populations of gram positive and acidophilic bacteria were increased as compared to control. The gram negative bacteria in jejunum were decreased in experimental treatments as compared to control. It is concluded that supplementation of acidophilus bacterial isolates or commercial probiotic to water of chicks or spraying may improve the immune system and positive bacteria in jejunum microflora of broiler chickens.
Key Words: Broiler, *Enterococcus facium*, Immune system, Intestine microflora

The effects of different levels of the amino acid methionine on performance and carcass characteristics inBroiler

Saeidi E[1*], Danyali I[2]
[1]ph.D. Student Islamic Azad University of Arak, [2]M.sc.University of Tehran
Corresponding Author sEmail: Edi.saeidi@yahoo.com

An experiment was carried out to evaluate the effects of different levels of amino acid methionine on performance and carcass characteristics of broilers in the initial starter (0-10 days), grower (11-28days), finisher (29-42days) and final (0-42days) experiment using 480 day old broiler chicks (Ross 308) in a completely randomized design of 4 treatments and 4 replicates were used in each 30iteration. Treatments were designedin three levels of methionine, 5%, 10%, 15% in excess of the recommended NRC (1994). Chicks were fed from the first day on the bed and with a balanced diet based on the needs of Ross freely. The long of period was 42 days and during this time the performance of chicks was recorded in the end of eachperiod for each of the treatments and weight, measuring feed intake, feed conversion ratio was calculated. Data analyzed with software SAS and averages were compared by Duncan test. The results showed that the addition of 10% of the amino acid methionine, significantly improved daily gain and feed conversion ratio until the age of 28 days (P<0/05).This level of methionine,significantly decreased percentage ofbreast and increased the ratio of thigh to carcass(P<0/05). The methionine levels were significantly reduced abdominal fat (P<0/01). The level of 10% methionine createdhighest ultimate weight gain.Although, the levelof 15%methionine in comparison to the control group showed no significant weight gain but it showeddecrease in comparison to 10% methionine. The results suggest that the 10% excess amino acid methionine improves the performance and carcass traits in broilers.
Keywords: amino acids methionine, broiler, carcass yield, performance

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Effectsof *Enterococcus Facium*Isolates from *CoraciasGarrulus* and Commercial Probiotic on Immune System and Intestinal morphometry and microbial Flora of *JapaneseQuail*

Heydari- Sadegh[1], B., Hosseini-Vashan[2]*. S.J., Afzali[2], N., Mojtahdi[2], M.
1-Student of poultry production management and husbandry, Animal Science Department, University of Birjand, Iran
2- Animal Science Department, University of Birjand, Birjand, I.R. Iran
Email: jhosseiniv@birjand.ac.ir

Objectives: The purpose of this study was to investigate the effect of *Enterococcus Facium*isolates from intestine of *CoraciasGarrulus* on immune system and morphometry and microflora of jejunum in*Japanesequail.*
Material & Methods: A total of 385 chicks were arranged into 35 experimental units with 7 treatments. Each treatment has 5 replicate with 11 birds. The experiment was done in a completely randomized design. The treatments were included control, spraying, drinking and spraying+ drinking of the acidophilus bacterial isolates, and spraying, drinking and spraying+ drinking of commercial probiotic. Two birds from each replicate were sacrificed and bleeding, then blood was gathered and plasma was extracted. The jejunum samples (1 cm of mid in jejunum were taken) were used to determine the height of villi, crypt depth, and the ratio of height of villi to crypt depth. The jejuna content was assembled to study the microflora population. The data were analyzed by SAS software with GLM model.
Results & Conclusions: The protein concentration was increased in chicks received the *Enterococcus Facium*isolates and commercial probiotic. The antibody response against SRBC and IgM were increased in birds received *Enterococcus Facium*isolates or commercial probiotic as compared to control. The jejunahistomorphmetry were showed that height of villi, crypt depth, and the ratio of height of villi to crypt depth were significantly changed. The birds were received the *Enterococcus Facium*had showed higher villi height. The lactobacillus microflora counts were increased in experimental treatments as compared to control groups. It is concluded that supplementation of acidophilus bacterial isolates or commercial probiotic to water of chicks or spraying may be improved the immune system, jejunum morphology and lactobacillus microflora counts of Japanese Quail.
Keywords:*Enterococcus facium*, Immune system, Intestine microflora, Japanese Quail

Sperm-host glands in the Chukar Partridge (Alectorischukar)

HashemniaSh*
Department of Basic science, Faculty of Veterinary Medicine, University ofShahidbahonar,Kerman,Iran
Corresponding author's email: shadihashemnia@uk.ac.ir

Objectives: This work was conducted to study the histological and histochemical features of the utero-vaginal junction and the glands of this area which are called "Sperm-host glands" in the laying chukar partridge (Alectorischukar).
Materials & Methods: Five healthy, layingchukar partridges were used for this purpose. After euthanasia with an overdose of ketamine, the thoraco-abdominal cavity was cut open. The oviduct was removed and the samples were collected from the utero-vaginal junction. They were immersion-fixed in bouin's solution. They were embedded in paraffin wax after routine tissue processing. 5µm thick sections were obtained transversely. The slides were stained with Hematoxylin-Eosin (H&E), Periodic Acid Schiff (PAS) and Alcian Blue-Van Gieson (AB-VG)stains and studied by light microscope.
Results & Conclusion: The histological and histochemical characteristic ofthe four layers of the utero-vaginal junctionwas studied. The Lamina propria and tunica submucosa were well distinguishable in the Van gieson stain. There was no gland in the lamina propria. The epithelium of this junction was ciliated pseudostratified columnar and was consisted of secretory cells and non-secreting ciliated cells but the distribution of these types of cells varied in different parts of the epithelial tissue. The lamina propria and tunica submucosa were composed of loose connective tissue with collagen fibers and vessels. The secretory cells of the epithelium and Sperm-host glands and the type of their secretions were identified through the PAS and AB techniques. Both neutral and acid mucopolysaccharides were secreted in the sperm-host glands. The tunica muscularis and tunica serosa were as typical.The results of the present study showed that the basic histological features of the utero-vaginal junction of the chukar partridge were similar to the once of other domestic birds but some small differences were also seen.
Keywords: Utero-vaginal junction, Sperm-host gland, Histology, Chukar partridge

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Effects of Biomin® on performance parameters and intestinal morphology of Japanese quail (Coturnixcoturnix japonica)reared under normal and cold stress conditions.

Arabha H[1], ZamaniMoghaddam A.K.[2],Mehraei M.H[1],Tohidifar S.S[1],Heidari A[3].
[1]Poultry Diseases resident,Shahrekord university, Shahrekord, Iran;[2]Department of clinicalsciences, Faculty of Veterinary Medicine, Shahrekord university, Shahrekord, Iran;[3]Student of veterinary medicine, Shahrekord university, Shahrekord, Iran
Corresponding author's email:hajar.arabha@gmail.com

Objectives: Synbioticsaredefined as a mixture of probiotics and prebiotics that beneficially affects the host by activating the metabolism of one or a limited number of health promoting bacteria and/or by selectively stimulating their growth that could improvethe host's welfare. Many researches have focused on Biomin® as a symbiotic for improving the performance parameters of broilers and layers, but there is paucity of information about the effects of biomin on performance parameters in Japanese quail and also there is lack of information about the beneficial effects of this symbiotic in cold stress conditions. Therefore, the present study was conducted to investigate the effects of Biomin IMBO® as a synbioticon growth characteristics and intestinal morphology in Japanese quails.
Materials & Methods: Two hundred and forty1d old Japanese Quails were randomly divided into 4experimental groups with 3 replicates in each group(20 birds /replicate). The groups were normal temperature control, cold stress control, normal temperature Biomin IMBO and cold stress Biomin IMBO. Firstly environmental temperature was 30ċ and decreased to 24ċ atthe end of the second week. Experimental cold stress was induced by placing the cold stress groups in an environment with 14ċ till the end of the experiment The control groups were fed corn-based diet andthe synbioticgroups were fed the basal diet plus the Synbiotic product (1g of Biomin IMBO/kg) till the end of the experiment.All the birds were weighed weekly and live weight, live weight gain and feed conversion ratio were calculated on a per bird basis. At the end of the experiment, 8 birds were selected from each group and slaughtered to measure carcass yield, selected internal organs. Then, 2-cm segments of the duodenum, jejunum and ileum were dissected and intestinal villus morphology was measured.
Results & Conclusion: Except FCR ($P<0.05$) other performance parameters were not affected by supplementing Biomin IMBO innormal temperature in comparison with control group ($P > 0.05$).Onthe other hand, under cold stress situation, Japanese quail's body weight, FCR andduodenum and ileum surface areawere improved in Biomin IMBO group compared with controlgroup in cold stress condition($P<0.05$). It could be concluded that supplementation of Biomin IMBO would be a beneficial choice of additives for improving FCR in both normal and cold stress situations and might improve most growth parameters when cold stress occurs in Japanese quails.
Key words: Biomin IMBO, Performance parameters, Cold stress,Intestinal morphology, Japanese Quail.

Antimicrobial susceptibility of coagulase positive Staphylococcusaureusisolated from Broiler breeder arthritis in northwest of Iran

Farhad Arabbaghi1, Jafar Taifebagherlu[1*], AlirezaTalebi[1]
1. Department of Avian Diseases, Faculty of Veterinary Medicine, Urmia University, Urmia, Iran.
Corresponding author's email:j.tayefeh@urmia.ac.ir

Objectives: The aim of this study was to determine antibiotic susceptibilityof Staphylococcus aureusstrains isolated from broiler breeder flocksin northwest of Iran.Staphylococcal infections are a worldwide problem in chickens and cause economic losses due to decreased weight gain, decreased egg production, lameness and bird losses from osteomyelitis and septicemia. Condemnation of carcasses at slaughter-housescaused by Staphylococcus aureusisthe most commonlesion of infection involves tenosynovitis (inflammation of tendon sheaths) and arthritisof the hock and stifle joints, periarthritis and bumblefoot.Drug-resistant Staphylococcus aureus (MRSA), is now a serious public health problem that is resistant to betalactam antibiotics including the semisynthetic penicillins, also may be a concern in poultryindustry.
Materials & Methods: In this study, 12 broiler breeder flocks with laminitis and arthritis were studied for existence of Staphylococcus infections. Synovial Swab samples of affected birdswere cultured in the 5% blood agar medium and then incubated at 37°C for 24-48 h. Staphylococcus aureuscolonies are circular, smooth, β-hemolytic 1–3 mm in diameter, which are often pigmented white to orange.Coagulase and mannitol fermentation tests also used in the identification of S.aureus.For antimicrobial resistance mueller hinton agar medium were used and antibiotic discs dipped located in the plates. Antibiotic sensitivity were calculated by measuring the zone of inhibition on the plate according NCCLS.
Results & Conclusion: Staphylococcus aureuswere isolated from broiler breeder arthritis in 49 of 60 samples with prevalence rate of 81.66 %. The highest antibiotic susceptibility were recorded for *Amoxicillin* (95.7%), Fosbac (89%),Difloxacin (87.6) andDoxycycline(78.5%), while the highest antibiotic resistance were recorded for Erythromycin (96.1%) and Gentamycine(90%). In conclusion,high prevalence of S. aureus may exist in breeder farms and antibiotic susceptibility tests could be useful intreatments of Staphylococalarthrithis.
Keywords: Staphylococcus aureus, Broiler breeder, Antibiotic susceptibility, Arthritis, Iran

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Serological survey on chicken infectious Anemia virus in broiler flocks in Urmia, Iran

DanaAnousheh[*1],Sima ghoreishi[1]

1. *Undergraduatedstudent of veterinary medicine*, Faculty of *Veterinary* Medicine, *Urmia university*,*Urmia,Iran.*

Corresponding author's email:dr.dana.anousheh@gmail.com

Objectives: This study was conducted to indicate the prevalence and serology status of chicken anemia virus (CAV) infection in commercial broiler chickensin Urmia.Chicken Infectious Anemia Virus (CIAV) is a resistant and ubiquitous virus that play a major role in the etiology of some multifactorial diseases associated with hemorrhagic syndromes and aplastic anemia. The most characteristic changes in infected chickens are *anemia*, *aplasia* of the bone marrow and atrophy of the thymus, *spleen* and bursa of Fabricius. However infection in older chickens caused immunosuppression. CIAV can spreads both horizontally and vertically. Egg transmission play a major role in commercial poultry production integration and occurs when antibody-negative hens become infected by horizontal infection or by semen from infected cocks.
Materials & Methods:A total of 150 blood samples were collected from 14 broiler flocksof urmia between May 2015 and October 2015and Serum was obtained by centrifugation of blood samples at 1750x g for 10 min. Serum samplewere tested for Chicken Anemia Antibodyusing a commercially available CIAVindirect Enzyme Linked Immunosorbent Assay kit (*ProFLOK® CAV*ELISA kit). Optical density value was read at 405 nm wave length on ELISA reader (BIO-TEK Instruments,ELx800. USA).
Results & Conclusion: chicken infectious anemia was widespread in commercial broilerchicken flocks in Urmia.The prevalence of seropositivity CAV in commercial broiler flocks was 91.3%. The ELISA mean antibody titers of CIAV titres were 3928, with the minimumand maximum of titers, 0 and 13702 respectively.Subclinical forms of CIAV infectionhave destructive effect on lymphoid organs leading to immunosuppression and subsequently vaccination failure and complications with other pathogens, was confirmed using ELISA in this survey.The present serological finding showed that CIAV was widely distributed in west Azerbaijan province and great need for breeders' immunization for the presence of CIAV antibodies during rearing period to avoid vertical transmission of the virus and achieve protection of the chickens by maternal anti-CIAV antibodies.
Keywords:CIAV, Broiler, Prevalence,ELISA, Urmia

Sensitization of isolated coliform bacterial strains from infected commercial broiler flocks against synthetic antibiotic

Elahi R[1], Bahadoran Sh[2], DehghaniSamani A[2]*
[1]Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran; [2]Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran.
Corresponding Author's Email:amirds2008@gmail.com

Objectives: Development in pharmaceutical scienceshas made the production and formation ofsynthetic drugs possible and they are widelyused in the treatment of diseases in humansand animals, among which antimicrobial agents are included.Development of resistance against antibiotics is a global concern in medicine and veterinary medicine. The use of synthetic antibiotics in poultry industry increased in past years and humans receive the antibiotic's metabolites via eating of eggs and meat of broilers. Coliform infections are routine in broilers flocks that treated by antibiotics but because of indulgencein antibiotic administration in flocks, the antibiotic resistance occurred and increased specially in last years. By consider of antibiotic resistance, it is necessary to be informed about thesensitization of every routine bacterial strain against synthetic antibiotics in our location. The aim of this study is showing the sensitization of isolated coliform bacterial strains from infected commercial poultry flocks against synthetic antibiotic.
Materials & Methods: In average 15 carcasses of 79 commercial broiler flocks that were suspected to coliform's infection referred to department of avian disease of Shahrekord University. Autopsy were done for every carcass then suspected carcasses to coliform infection referred to laboratory of microbiology for isolation of bacterial strains. After the isolation and identification of coliform strains, the antibiogram tests were done via agar disc diffusion assay for 10 different synthetic antibiotics. Then the sensitization of isolated coliform bacterial strains reported.
Results & Conclusion: Results of this study show that sensitization of examined coliform bacterial strains against Ciprofloxacin, Difloxacin andDoxycycline were 14%, 5% and 9%, sensitization against Florfenicol, Flumequine, Enrofloxacin andSultrim were 34%, 10%, 5% and 24% and sensitizationagaints Oxy tetracycline, Danofloxacin and Lincospectin were 6%, 11% and 27%.Results obtained from this study and same studies showed antibiotic sensitization in every location, so it is necessary for every practitioner to know the state of antibiotic sensitization in their locations.
Keywords: Antibiotic,Broiler flocks,Coliform Strains, Sensitization.

The prevalence of different diseases incommercialbroilers flocks referredto veterinary clinic of Shahrekord University

HamediDehkordi H[1], ZamaniMoghaddam AK[2], DehghaniSamani A[2]*
[1]Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran; [2]Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran.
Corresponding Author's Email:amirds2008@gmail.com

Objectives: Chickens (*Gallus gallusdomesticus*) are considered as one of the most important and widely distributed avian speciesamong poultry birds. Meat of chicken is a very good source of animal protein for human consumption.The domestic chicken is descended primarily from the red junglefowl (*Gallus gallus*) and is scientifically classified as the same species.Chickens farmed for meat are called broiler chickens. Chickens will naturally live for 6 or more years, but broiler chickens typically take less than 6 weeks to reach slaughter size. Broilers are a hybrid of the egg-laying chicken, both being a subspecies of the red junglefowl. Typical broilers have white feathers and yellowish skin. Most commercial broilers reach slaughterweight at between five to seven weeks of age, although slower growing breeds reach slaughter-weight at approximately 14 weeks of age. Because the meat broilers are this young at slaughter, their behavior and physiology are that of an immature bird. Due to artificial selection for rapid early growth and the husbandry used to sustain this, broilers are susceptible to several diseases, particularly skeletal malformation and dysfunction, skin and eye lesions, and congestive heart conditions.In this study prevalence of different diseases in thecommercial broilers flocksthat referred to veterinary clinic ofShahrekord University reported.
Materials & Methods: Carcasses of52commercial broilers flocksthat referred from October 2014 till September 2015 to veterinary clinic of Shahrekord University studied. The carcasses examined via Autopsies as well as Para clinical examinations.
Results & Conclusion: Different diseases diagnosed by clinical and Para clinical examinations in referredcommercial broiler flocks. The prevalence ofNewcastle Disease, Infectious Bronchitis and Avian Influenza were 44.17%, 27.35% and 11.87%respectively and prevalence ofchronic respiratory diseases complexes-colibacillosis and congestive heart conditions and asciteswere 68.44%and 57.31%.This study showed that chronic respiratory diseases complexes-colibacillosis is an important disease in commercial broilers flocks referred to veterinary clinic of Shahrekord University.
Keywords:commercial broilers flocks, Diseases, Prevalence.

Prevalence of*Trichomonas gallinae*indomesticpigeons (*Columba liviadomestica*) referred to veterinaryclinic of Shahrekord University

Niknezhad M[1], ZamaniMoghaddam AK[2], DehghaniSamani A[2]*
[1]Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran; [2]Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran.
Corresponding Author's Email:amirds2008@gmail.com

Objectives: Trichomonosis occur due to infection by Trichomonas species and it is historically known to affect pigeons and doves in the world. It can also affect birds of prey that feed on other birds that are infected with the parasite. The common name for the disease in pigeons and doves is "canker" and in birds of prey the disease is also known as "frounce".In doves and pigeons trichomonosis occur due to infection by *Trichomonas gallinae*. *Trichomonas gallinae* is a pathogenic protozoan often affecting the mouth and crop of domestic pigeons, wild columbids and raptors.The present investigation was concentrated on prevalence of *Trichomonas gallinae* in domestic pigeons (*Columba liviadomestica*) referred to veterinary clinic of Shahrekord University.
Materials & Methods: Diagnosis of infection in 100 pigeons that referred to veterinary clinic of Shahrekord University accomplished by direct microscopic examinationof material scraped from theoral cavity of pigeons. For this goal wet mountsthat taken by sterile soaps from oral cavity and crops of pigeons that prepared by smeared on clear microscopic slides were observed microscopically (via lens 10, 40 & 100) carefully for infection by *Trichomonas gallinae*.
Results & Conclusion: Results of this study show that 35.86% of examined pigeons infected by *Trichomonas gallinae*. In the same study on prevalence of *Trichomonas gallinae* in Iran the rate of infection in pigeonsreported 33% by PiraliKheirabadi, Kh. et al and 37.32% by Borji, H. et al. In our study, only some of infected pigeons show the signs of vomiting, dilating crop and yellow or gray plaques in mouth examination so it is necessary for all the practitioners to be care about this infection in pigeons.
Keywords: Parasite, Prevalence, Pigeons,*Trichomonas gallinae*.

The prevalence of different diseases in domestic pigeons referred to veterinary clinic of Shahrekord University

Mostafavi M[1], ZamaniMoghaddam AK[2], DehghaniSamani A[2]*
[1]Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran; [2]Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran.
Corresponding Author's Email:amirds2008@gmail.com

Objectives: Thedomestic pigeon(*Columba liviadomestica*) is apigeonthat was derived from therock pigeon. The rock pigeon is the world's oldest domesticated bird. Many people find pleasure in viewing pigeons. Because they are one of the few animals that tolerate the environmental conditions of an inner city, pigeons (and house sparrows) may be the only wildlife observed by many people living there. Domestic pigeons don't migrate, but if removed from a nesting area, they have a good homing ability and can return from long distances. All of above make the pigeons as very interested pet birds that can live near the humans. Although pigeons can live easy near humans but there are many important diseases that affect health of pigeons and on the other hand they have the potential for transmission of over 30 diseases to humans plus another ten to domestic animals, so it is necessary for all of practitioners to know prevalence of different diseases in pigeon's populations. In this study prevalence of different diseases in the pigeons that referred to veterinary clinic of Shahrekord University reported.
Materials & Methods: 75 pigeons that referred from October 2014 till September 2015 to veterinary clinic ofShahrekord University were studied.The birds examined clinically as well as Para clinical examinations.
Results & Conclusion: Different diseases diagnosed by clinical and Para clinical examinations in referred pigeons. The prevalence of infectious disease such as Newcastle disease,Avian Influenza,Pox disease,Trichomoniasis and Chronic respiratory diseases complex were 45.07%, 22.38%, 8.98%, 34.26% and 7.67% respectively and fracture of bones, reproductive diseases prevalence were 0.08%, 13.12%. This study showed that Newcastle disease is an important disease in domestic pigeons referred to clinic of vererinary of Shahrekord University.
Keywords: Diseases, Pigeons, Prevalence, Shahrekord.

The prevalence of different diseases in domestic canaries (*Serinuscanariadomestica*) referred to veterinary clinic of Shahrekord University

Jafari Dehkordi F[1], Zamani Moghaddam AK[2], Dehghani Samani A[2]*
[1]Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran; [2]Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran.
Corresponding Author's Email:amirds2008@gmail.com

Objectives: The canary (*Serinuscanarius*) can be considered adomesticated species. Spanish monks in monasteries asfar back as 1402 achieved first breeding. Following aFrench expedition to the Canary Islands, this bird wasintroduced to France and Italy and later into the rest ofEurope.Nowadays, canaries are mostly bred indoors, oftenwithin a building in the garden or close to the house, sometimes inside the house in a cellar or anattic. The birds are kept in pairs in breeding cages and require artificial lighting. All of these factors made the canaries as the best pet birds that can keep in small metal cages in all over the world. Also canaries are very interested pet birds in all over but they are very sensitive birds to challenge by different disease and any abnormal condition that influence their health. Viral and bacterial diseases are important diseases that occur in canaries. The present investigation was focused on the prevalence of different diseases in the domestic canaries (*Serinuscanariadomestica*) to veterinary clinic of Shahrekord University.
Materials & Methods: Totally 83domestic canaries that referred from October 2014 till September 2015 to veterinary clinic of Shahrekord University were studied.The birds examined clinically as well as Para clinical examinations.
Results & Conclusion: Different diseases diagnosed by clinical and Para clinical examinations in referred canaries. The prevalence ofNew castle disease, canaries pox disease, canaries bacterial enteritis and canaries infectious sinusitiswere32.51%, 24.78%, 61.02% and17.47% respectively andprevalence of canaries reproductive diseases and canaries chronic respiratory disease complexes were 15.92% and 28.31%.This study showed that canaries bacterial enteritis is an important disease in domestic canaries referred to clinic of vererinary of Shahrekord University.
Keywords: Canary, Disease, Infection,*Serinuscanariadomestica*,Shahrekord.

A comparative survey on different hematological parameters (hemogram) of three species of prey birds in Shahrekord area

Madreseh Ghahfarokhi S[1], Zamani Moghaddam AK[2], Dehghani Samani A[2]*
[1]Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran; [2]Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran.
Corresponding Author's Email: amirds2008@gmail.com

Objectives: The hemogram or complete blood count (CBC) is used as a broad screening test to check for such disorders as anemia, infection, and many other diseases. *Aquila chrysaetos* (The Golden Eagle) is one of the great birds of prey in the Northern Hemisphere. Golden eagles have a Holarctic distribution. They occur throughout Eurasia, in northern Africa, and in North America. It is the most widely distributed species of eagle. Buteo buteo (Common Buzzard) is a best known bird of prey, whose range covers most of Europe and extends into Asia. It is usually resident year round, except in the coldest parts of its range, and in the case of one subspecies. *Aquila nipalensis* (The Steppe Eagle) is a bird of prey. Like all eagles, it belongs to the family Accipitridae. It was once considered to be closely related to the non-migratory tawny eagle. This research aimed to establish reference values for hemogram of different species of prey birds located in Iran.
Materials & Methods: Blood sampling was through wing vane puncture, using 23 gauge sterile hypodermic needles and syringes. About two milliliters of blood were collected on each pigeon. Bloods were collected into labeled Bijou bottles, containing ethylene diamine tetra acetic acid (EDTA) at 2 mg for each ml blood as anticoagulant. The Packed Cell Volume (PCV) values were determined by the microhaematocrit method of Benjamin. Blood smears that prepared from blood samples stained and observed. The total number of White Blood Cell per each µl blood determinate via crossing the total number of counted WBC in 10 microscopic fields (by lens 40) of every stained blood smears to 200. For determination of differential percentages of each groups of WBC, the number of each groups of WBC differed in 100 counted WBC in many different microscopic fields (by lens 100) of every blood smears with emersion oil.
Results & Conclusion: For Golden Eagle PCV was 43±0.215%, Total WBC was 13000±0.451/µl, 65±0.812% heterophils, 23±0.245% lymphocytes, 3±0.012% monocytes, 8±0.215% eosinophils and 1±0.104% basophils reported. For Common Buzzard PCV was 40±0.541%, Total WBC was 12200±0.241/µl, 61±0.523% heterophils, 26±0.112% lymphocytes, 4±0.119% monocytes, 7±0.354% eosinophils and 2±0.174% basophils reported and finally for Steppe Eagle PCV was 47±0.147%, Total WBC was 14000±0.365/µl, 68±0.378% heterophils, 21±0.717% lymphocytes, 3±0.137% monocytes, 7±0.741% eosinophils and 1±0.167% basophils reported. There is so similarity between our results with results of study of Michael J. R. Miller et al.
Keywords: Hematological parameters, Prey birds, Shahrekord.

The first recording of *Pectinopygusforficulatus*(chewing lice) in Great White Pelican (*Pelecanusonocrotalus*) in Shahrekord, Iran

MadresehGhahfarokhi S[1], ZamaniMoghaddam AK[2], DehghaniSamani A[2]*

[1]Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran; [2]Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran.

Corresponding Author's Email:amirds2008@gmail.com

Objectives: The great white pelican species (*Pelecanusonocrotalus*) also known as the eastern white pelican, rosy pelican or white pelican is a bird in the pelican family thatfeeds fromhunting fish and lives usually by the sea and fresh water.The great white pelican is listed in the IUCN Red List as "LeastConcern" (LC) (IUCN 2014) and has a very largedistributionextending from Southeast Europe throughAsia and Africa so it is necessary for all the practitioners to concern more about the disease of these species such as parasitic diseases. Chewing lice is one of the important ectoparasites that affect the bird's health. This investigation was demonstrated on identification of chewing lice that removed from great white pelican species.

Materials & Methods:A great white pelican with the signs of severe cachexia and inability to fly referred to department of avian disease of veterinary clinic of Shahrekord University. In first examination of pelican a lot of chewing louses observed on the surface of feathers. Immediately some of louses removed from the feathers via sterile forceps and transferred to department of parasitology. In laboratory removed louses observed microscopically (Via lens 10 & 40).

Results & Conclusion:

Removed louses identified as *Pectinopygusforficulatus*.*Pectinopygusforficulatus*infestation reported by OnurGirisgin, A. et al in pelicans in Turkey, also infestation by *Pectinopygusforficulatus* in pelicans in Turkey reported by Dik, B. et al. The aim of this study is introducing*Pectinopygusforficulatus* as an important routine ectoparasite in pelicans that can affect their health specially the great white pelican that listed in the IUCN Red List as "Least Concern" (LC) (IUCN 2014).

Keywords: Chewing lice,Identification, *Pelecanusonocrotalus*, Pelican, Shahrekord.

Effect of *Haemoproteus columbae* infection on the hemogram of the Pigeons (*Columba livia domestica*)

Dehghani Samani A[1*], Pirali Kheirabadi Kh[2]

[1]Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran;
[2]Department of Pathobiology, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran.

Corresponding Author's Email: amir@stu.sku.ac.ir & amirds2008@gmail.com

Objectives: Parasites affect the health and productivity of birds, initiate excessive preening which interrupts feeding, as the birds spend much time preening rather than being involved in other essential life activities. *Haemoproteus columbae* occurs in pigeons widely in tropical and subtropical regions. The present investigation was concentrated on the effect of *Haemoproteus columbae* infection on the hemogram and changes in the number of white blood cells in infected pigeons.

Materials & Methods: Blood samples taked from 100 pigeons in Shahrekord. Blood smears stained and observed for *Haemoproteus columbae* infection. Packed cell volume (PCV) and total White Blood Cells (WBC) count and differential WBC count determinate for every smears.

Results & Conclusion: This study show that PCV increased in infected pigeons by *Haemoproteus columbae* than non infected pigeons. There were increasing in the number of total WBC in the infected pigeons by *Haemoproteus columbae* than non infected pigeons. Also there were significant differences between the number of lymphocytes and eosinophils in the infected pigeons by *Haemoproteus columbae* than non infected pigeons. Although this study and same studies show the part of the effects of blood parasites on the hemogram, but there were many questions about the effects of blood parasites such as *Haemoproteus columbae* on the other parameters of host's blood, so we should focus on the other hematological parameters in the next studies.

Keywords: *Haemoproteus columbae*, Hemogram, Pigeons, White Blood Cell.

Effect of *Haemoproteus columbae* infection on the biomarkers of antioxidant system of the Pigeons (*Columba livia domestica*)

Dehghani Samani A[1*], Pirali Kheirabadi Kh[2]
[1]*Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran;*
[2]*Department of Pathobiology, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran.*
Corresponding Author's Email: amir@stu.sku.ac.ir & amirds2008@gmail.com

Objectives: It has been reported that parasites affect the health and productivity of birds, initiate excessive preening which interrupts feeding, as the birds spend much time preening rather than being involved in other essential life activities. *Haemoproteus columbae* occurs in pigeons widely in tropical and subtropical regions. The present investigation was concentrated on the effect of *Haemoproteus columbae* infection on the biomarkers of antioxidant system of the infected pigeons.
Materials & Methods: Blood samples taked from 100 pigeons in Shahrekord. Blood smears stained and observed for *Haemoproteus columbae* infection. Biomarkers of antioxidant system of pigeons including: blood lipid peroxidation products, the ferric reducing ability of plasma, uric acids concentration in plasma and the activities of superoxide dismutase and catalase measured.
Results & Conclusion: Blood lipid peroxidation, ferric reducing ability of plasma, uric acids concentration and catalases activity increased in infected pigeons but superoxide dismutases activity reducing in infected pigeons. Although this study and same studies show the part of the effects of blood parasites on the biomarkers of antioxidant system, but there were many questions about the effects of blood parasites such as *Haemoproteus columbae* on the other parameters of hosts blood, so we should focus on the other parameters in the next studies.
Keywords: Blood parasite, *Haemoproteus columbae*, Pigeons, Stress oxidative.

A rare report of gizzard impaction by sands in lesser spotted eagle (*Aquila pomarina*) in Iran

Hosseini F*[1], DehghaniSamani A[1]
1.Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran.
Corresponding Author's Email:hosseinifm@gmail.com

Objectives: The gizzard or crop may become impacted with litter, grass, string etc. The normal function of the gizzard is to aid in the physical grinding of food materials, to reduce their particle size to aid digestion. Gizzard activity also acts as a pacemaker of intestinal activity and controls the speed at which food is passed to the small intestine. Most young commercial poultry consume feeds that have a small particle size. Older birds ingest grit to facilitate the grinding activity in the gizzard. This condition usually affects only a small number of birds, however if young chicks to do not begin to eat feed properly they often consume litter instead.However sometimes free-range poultry consume large stones, and birds of any age can consume nails, staples etc. This usually happens after maintenance activities in the housing.The lesser spotted eagle is a medium-sized bird of prey with dark brown plumage, broad wings and a small bill. While there can be significant variation between the brown plumage tones exhibited by different individuals, the head, neck and upperwingcoverts are generally paler than the body, and the flight feathers are usually particularly dark. We report a rare case of gizzard impaction with sands in lesser spotted eagle for first time in Iran.
Materials & Methods:A lesser spotted eagle that can not to flying refer to clinic of veterinary medicine of Shahrekord University with the signs ofcachexia, tremor, instability in motions and vomiting. After the examination we take a radiograph from her abdominal cavity and thorax.
Results & Conclusion: After the taking of radiographs we find an abnormal impaction in gizzard, so we start to treat it by gavage of 25cc of edible paraffin, then after the 30, 60, 120 and 240 minutes take graphs again. Fortunately after 240 minutes from gavage the impaction healed completely and there is no sign from impactions and after the shitting there are so many sands in eagle's feces. These rare report show that gizzard impaction can occur in every birds, maybe due to housing, so we should care about this subject.
Keywords:*Aquilapomarina*, Gizzard, Impaction,Iran, Lesser Spotted Eagle.

The first report of patellar luxation in golden eagle (*Aquila chrysaetosdaphanea*) in Iran

Hosseini F[1]*, DehghaniSamani A [1]

1.Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran.

Corresponding Author's Email:hosseinfm@gmail.com

Objectives: Eagle is a common name for many large birds of prey of the family Accipitridae; it belongs to several groups of genera that are not necessarily closely related to each other. The golden eagle (*Aquila chrysaetos*) is one of the best-known birds of prey in the Northern Hemisphere. It is the most widely distributed species of eagle. *Aquila chrysaetosdaphanea*Severtzov, 1888 – known variously as the Asian golden eagle, Himalayan golden eagle or berkut is distributed in Iran. Patellar luxation can be associated with multiple deformities of the hindlimb, involving the hip joint, femur, and tibia. Medial patellar luxation can be involved with a reduced coxofemoral angle (coxavara), lateral bowing of the femur, internal rotation of the tibia, shallow trochlear groove, and hypoplasia of the medial femoral condyle; lateral luxation cause the reverse changes. Clinical signs are variable and based on the severity of luxation. Animals of any age may be affected. We report the patellar luxation in golden eagle for first time in Iran and all over the world.

Materials & Methods:A female Asian golden eagle that can not to flyreferred to clinic of veterinary medicine of Shahrekord University with the signs of physical injuries in different parts of the body andlameness in left leg. We find an abnormal structure in the left knee after the palpation and examination, so we take a radiograph from this joint.

Results & Conclusion: After the taking of radiographs we find a lateral patellar luxation in the joint of left knee. The luxation returns to the trochlear groovemanually, after two days the sign of lameness healed and eagle could walk healthy. These report showed that luxation can occur in every kind of animals even in birds and eagles, so it is necessary for practitioners to inspect every joint of injured birds with any signs of lameness.

Keywords:*Aquilachrysaetosdaphanea*,Golden Eagle, Iran, Patellar Luxation.

Effect of MOS supplementation on various physiological indices of health in Avian Influenza (H9N2) challenged broilers

Tasneem Akhtar[1], Muhammad Imran Khan[2*]

Department of Physiology, University of Veterinary and Animal Sciences Lahore-54000, Punjab Pakistan[1]. Department of Animal Health, Faculty of Animal Husbandry and Veterinary Sciences, The University of Agriculture, Peshawar-25120, KPK-Pakistan[2]

Corresponding author's Email: imran.khan@aup.edu.pk

Objectives: Avian Influenza (AI) is a highly contagious disease causing significant economic losses worldwide. The study was conducted to compare the effects of MOS supplementation on health markers in AI challenged broilers.

Materials & Methods: A total of 200 broiler chicks were randomly divided into 2 dietary treatments (A and B) each consisting of 5 pens as replicates, with 20 chicks in each pen and were supplemented 0.5 and 0.0 % MOS respectively in antimicrobials/anticoccidial drug free diet for 35 days. On day 21 the groups were split into positive (A+ve and B+ve) and negative groups (A-ve and B-ve). Positive groups of birds were shift to remote sheds and challenged intranasally with 0.1 ml of reference virus (AIV; Pk- UDL/01/08 H9N2) with EID50 = $10^{-6.66}$ in strict biosecurity measures. The data collected during the trial and later, after the slaughter of the birds was used to study the parameters including feed consumption, body weight gain, FCR, organs weight, intestinal length and biochemical response against the avian influenza virus antigens. After determining the normal distribution, repeated measures and one-way analysis of variance was used to analyze research data.

Results & Conclusion: Mean body weights, feed consumption and FCR were higher ($p < 0.05$) in negative groups (A-ve & B-ve) and tended ($p = 0.08$) to be higher in positive treatment group (A+ve) after AI challenge. Inclusion of MOS did not influence the weights of spleen, caeca, large intestine and kidney except spleen that tended ($p = 0.06$) to be heavier in the negative treatment group (A-ve). However, the weights of empty small intestine, proventriculus, gizzard, liver, bursa of fabricus, pancreas and length of small and large intestine of the positive treatment birds (A+ve) were more ($p < 0.05$) compared with the other groups. Furthermore, the weight of heart and lungs were higher ($p < 0.05$) in negative treatment birds (A-ve). Serum malonaldehyde concentration (a marker of oxidant capacity) and serum concentration of UA, glucose and total protein were significantly lower in non-supplemented groups. Serum concentrations of HDL, LDL and cholesterol were higher in positive treatment group (A+ve). The serum antioxidant was higher ($p < 0.05$), with marginally decreased ($p = 0.06$) level of triglycerides in the A-ve group. The non supplementation of MOS seems to enhance the stress in birds manifested by hyperglycemia, hypoprotenimia (serum total proteins, albumin and globulin) with compromised serum oxidant and antioxidant status as indicated by hypouricemia.

Key words: Avian Influenza, AI, Broiler, oligosaccharide, MOS

Haemoproteus spp. infection among pigeons (Columbiformes) in a birds' garden in Iran

Maryam Rassouli[1,2*], MahsaDerafshi[3]

[1] pathobiology Department, Shahmirzad School of Veterinary Medicine, Semnan University, Semnan, Iran*

[2] Pathobiology Department, Faculty of Veterinary Medicine, Semnan University, Semnan, Iran

[3]Shahmirzad School of Veterinary Medicine, Semnan University, Semnan, Iran

Corresponding author's email: Mrdvmp@yahoo.com, Mrvpar@semnan.ac.ir

Objectives:*Haemoproteus* spp. are hemosporidian protozoa which can infect birds.Haemoproteus are arthropod-borne parasites. Mosquitoes in the genus *Culicoides* and hippoboscid flies can act as final hosts and vectors. The disease in birds can be from asymptomatic to severe. Anemia, anorexia, weight loss, and depression are the most commonly symptoms of the infected birds. The aim of this study is to understand the prevalence of *Haemoproteus* spp. among pigeons in a birds' garden, to identify the infective species and to detect the leukocyte and reticulocyte changes.

Materials & Methods: In this research, blood samples were taken from brachial veins of 50 pigeons in one of the birds' gardens, near Tehran, the capital of Iran. Blood films were taken and transferred to parasitology laboratory in which they were fixed by methanol and stained by Giemsa. The species of *Haemoproteus* was identified by the diagnostic keys based on the parasite morphology.

Results & Conclusion:14 samples out of 50 (28%, 15-40%; 95%CI)were positive in *Haemoproteus* spp. Different stages of *Haemoproteus*; from young gametocytes to micro and macrogametocytes were observed in the stained blood films and different species of the parasite were identified. There were also some abnormalities in heterophils and lymphocytes of the infected birds and the lysed reticulocytes were increased in some samples. In Iran, *Haemoproteus*infection has been reported among pigeons. Unfortunately, antimalarial drugs reduce the parasitemia but do not eliminate the parasite, therefore it is important that some measures is performed to identify the potential vectors and to control them.

Key words:*Haemoproteus*, Pigeon, Iran

Study of Effect of Berberis Vulgaris AqueousExtract on *Escherichia coli* in Commercial Chicken Soup

AlipourEskandani M[*]

Department of Food Hygiene and Quality Control, Faculty of Veterinary Medicine, University of Zabol, Zabol, Iran.

E-mail: alipour@uoz.ac.ir

Objectives: The antimicrobial effect of different concentrations of water extract of Berberis vulgaris was studied on the growth of *Escherichia coli* (PTCC 1399) by using sterilized samples and in a single incubation temperature (30 ºC) during 6 days.

Materials & Methods: After obtaining and powdering Berberis vulgaris, its water extract was prepared. 10^3*Escherichia coli* (PTCC 1399) in per ml commercial chicken soup (per 80 ml soup, 8×10^4 bacteria) were inoculated into the glasses that contain samples under sterile conditions. After inoculation of bacteria and adding different concentrations of water extract, the antimicrobial effect of Berberis vulgaris was studied on *E. coli* at several concentrations.

Results & Conclusion: The results showed that concentrations of 0.5%, 1% and 2.5% had an inhibition effect on *E. coli*, and concentrations of 0.1% , 0.3% could not inhibit the growth of *E. coli*. According to the finding of this research, water extract of Berberis vulgaris has a retention effect against *E. coli* in soup and can be considered as a natural preservative in some food.

Key word: Berberis vulgaris, *Escherichia coli*, commercial chicken soup

Gene expression of heat shock protein (HSP60) in the brain of cold induced pulmonary hypertensive chickens

Khosravi Alekoohi Z[1*], Hassanpour H[2], Bahadoran Sh[3], Babaahmadi Milani M[4]
[1]Doctor of Veterinary medicine, shahr-e-kord, iran; [2]Department of basic sciences; [3]Department of clinical sciences; [4]Resident of poultry disease, Faculty of Veterinary Medicine, University of shahr-e-kord, shahr-e-kord, Iran
Corresponding author's email: Zkhosravi97@yahoo.com

Objectives: The purpose of this study is evaluation gene expression of heat shock protein (HSP60) in the brain (hindbrain, midbrain and forebrain) of chickens with cold induced-pulmonary hypertension.
Materials & methods: The quantitative real-time PCR was done. Total RNA were extracted from forebrain, midbrain and hindbrain according to the acid guanidium thiocyanate-phenol-chloroform single-step extraction protocol. Total RNA were treated with RNase-free DNase to avoid amplification of contaminating genomic DNA. The level of HSP60 and beta actin transcript were determined by real time reverse transcriptase RT-PCR using sibber-green chemistry. Specific primer of HSP60 was designed with primer blast. PCRs were carried out in a real-time PCR cycler in three replicate for each sample of ventricle.
Results & conclusion: The ratio of the right ventricle to total ventricle (index of pulmonary hypertension in chickens) was increased in the cold induced-pulmonary hypertensive chickens at 42 days of age compared to control ($P<0.05$). The HSP gene was expressed in three parts of brain in two experimental groups. In the hindbrain of cold induced-pulmonary hypertensive chickens, the relative gene expression of HSP60, was decreased compared to control ($P<0.05$). In the midbrain of cold induced-pulmonary hypertensive chickens, the expression of HSP60 was increased compared to control ($P<0.05$). In forebrain of cold induced-pulmonary hypertensive chickens, the expression of HSP60 was increased compared to control ($P<0.05$). Probably, up-regulation of HSP gene expression in the forebrain and midbrain delays the pathological process of cold stress whereas diminished expression of this gene in the hindbrain may affect its normal function at cardiovascular center and sympathetic nervous system to exacerbate pulmonary hypertension.
Keywords: Pulmonary hypertension, Broiler, Heat shock protein

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Black spot in the Canaries: Case report

Mayahi M, Zahabi H[*], Keshavarz V, Nejaty A, Maadinia
Department of Avian Diseases, Faculty of Veterinary Medicine, University of shihdchamran, ahvaz, Iran
Corresponding author's email:hesam.zahabi@gmail.com

Objectives:A female canary was brought out to the poultry clinic of Ahvaz's shahidchamran veterinary faculty with the signs of isolation, depression, loss of appetite & the watery stool.
The symptoms of the disease were observed at least since a week back, but the bird's owner believed that as he used the cotton meal for the bird's bedding, so it might be used by the birds, so the toxicities of the cotton meal may lead to this sickness. (Toxicities , poisoning in the gossypol pigment is abundantly available in the cotton meal) which may lead into loss of appetite , weight , reduction in laying , changing in the color of the yolk & finally stop laying egg in the birds which is having 13 months of age (the mentioned symptoms can be another effect of the sickness .)
Materials & Methods: In the clinical examinations , according to the age of the bird , we suspected to Black Spot , which is caused by the Mycoplasmaobacteria (Fig # 1 &2), so on that base , for its treatment we use 2 flofernicol drugs & doxycycline , respectively 20 mg/kg bw& 0/25 g/ lit for 6 days through watering.
Results & Conclusion: After a week most of the signs disappeared, (Fig # 3) The birds were completely cured after 2weeks. Biosecurity,sanitation, Health care& so on can play very important role in the control of the disease.
Keywords: Canary,Blackspot,Doxycycline

Visceral urate deposition in a Polish hen

Morad Rahimi
Department of Clinical Sciences, Faculty of Veterinary Medicine, Razi University, Kermanshah, Iran
rahimi@razi.ac.ir

Objectives: Occurrence of visceral urate deposition in a Polish henwhich is bred primarily as a show birdisreported here.
Materials & Methods: On July, 2015, carcass of a mature Polish hen was submitted for necropsy to Poultry Health Services, Kermanshah, Iran. It was from a flock of 4Polish chickens kept as show birds in Birds Garden. They were fed a commercial starter diet prepared for broiler chickens. The submitted bird has been found dead by the owner just before referring to the clinic. Routine necropsy was performed on the dead hen. The bird was in good flesh. White chalky deposits were observed on serous surfaces of the heart and liver. The deposits were also found on the epithelium of esophagus and trachea. Right kidney was completelyatrophied and right ureter was occluded with chalky materials. Chalky depositscollectedfrompericardium and serous surface of the liver weretestedbymuerxide test.Heart, liver and kidney were sampled, and submitted to laboratory for histopathology. The tissues were subsequently processed, sectioned, and stained with hematoxylin and eosin for light microscopy.
Results and Conclusion: Appearance of light purple colour in murexide test confirmed thepresenceofurate in chalkydeposits. At light microscopy, kidney was physically damaged by urate deposition, and few inflammatory cells infiltration was observed. Severe tubular epithelial cell degeneration and necrosiswerenoted. Histopathologicalexamination of the heart revealed pericarditis, muscle fibre necrosis and urate tophi in both pericardium and myocardium.Multifocal hepatocellular necrosis and acute inflammation were seen in the liver.Visceral urate deposition is a consequence of severe renal dysfunction that causes hyperuricemia. In poultry, apart from renal failure, dietary protein above the bird requirements may also cause hyperuricemia. Dehydration due to water deprivation is a common cause of visceral urate deposition in domestic poultry. Outbreaks of visceral urate deposition in poultry have also been attributed to infectious causes, such as nephrotropic strains of infectious bronchitis virus and renal cryptosporidiosis;and non-infectious factors, such as vitamin A deficiency, secondary to urolithiasis, and treatment with sodiumbicarbonate.Althogh other ethiologies alone or in combination could be the cause(s) of visceral urate depositionin this case, but dietary protein above the bird requirementsled to hyperuricemiamight be the main cause, because the bird had been fed a commercial broiler starter diet for whole its life.
Keywords: Hyperuricemia,Murexide test, Polish hen, Tophi,Visceral urate deposition

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Report of reovirus infection in broilers farm from vaccinated breeder

Mansoor mayahi[1] , soroush khademian[2] , hosein hoseini[3]
[1] *professor of health and diseases of poultry faculty of veterinary medicine shahid chamran university of ahwaz, iran*
[2] *DVM.DVSc candidate of health and diseases of poultry faculty of veterinary medicine shahid chamran university of ahwaz, iran*
[3] *professor assistant of faculty of veterinary medicine Islamic azad university*
Dr.s.khademian@gmail.com

At broiler farm with 70000 capacity lamness and recumbency pronounced in chiks. Morbidity increased with raising the chiks but mortality was normal. At the farm chiks rearing as male and female and lamness observed more at males. At 30days, 30 serum samples sent to labrotary to assessment antibody against reovirus with indirect elisa synchronous sampling again for detecting bacteria agent from joint. Result of elisa was mean titre 8038 with 22%cv in biochek kit. Also staphylocucus aureus detected from hock joint that was predictable in consideration of stress on joints from first week.
necropsy reveal no sign of infection but gasterocnemius was swollen and rupture was seen. at palpation the hocks feels warm. perceive a greenish discoloration of the skin due to extravasation of blood. Condyle and epicondyle involved. Presumptive diagnosis was on reovirus and to confirm the cause of disease 30 birds from different ages sent for molecular identification on tendon and gastrointestinal tract.
Presence of reovirus was positive just on joint tendone of 35 days chiks with RT-PCR. At 15 days chiks presence of reovirus was positive in the intestine and at 7days chiks both intestine and pancreas were positive with RT-PCR. Studies show that chiks were from vaccinated breeder that vaccinated with killed reovirus vaccine two times at 10 and 18 weeks and humoral antibody detected at indirect-ELISA was 10000. According to the results from poultry farms prevalence of lamness although vaccination with live and killed vaccine perform at breeder farms will show this hypothese about the insufficiency the current vaccinse to make protection agains prevalence of reovirus that affected the farms.
Key words: Reovirus, Identification, Broiler, Elisa, RT-PCR

Efficacy of the thermostable Newcastle disease vaccine strain I-2 in broiler chickens challenged with highly virulent virus

Sobhan Firouzi[1], Hassan Nili[1], Keramat Asasi[1], Najmeh MoslehV, Hassan Habibi[2*], Mitra Mohammadi[1]
1 Department of Clinical Sciences, School of Veterinary Medicine, Shiraz University, Shiraz-Iran
2 Department of Animal Science, Faculty of Agriculture, Persian Gulf University, Bushehr, Iran
Corresponding author's email: h.habibi@pgu.ac.ir

Objectives: Newcastle disease (ND) is a serious contagious disease that may cause up to 100% mortality in poultry. Whereas vaccination is one of the only safeguard against endemic ND and the conventional vaccines are not heat stable and therefore require complex cold-chains to link the vaccine producers and users, the aim of this study was to evaluate the efficacy of thermostable ND vaccine strain I-2 in broiler chickens vaccinated via drinking water and coated on oiled wheat grain. The horizontal transmission of vaccine virus and transmission of disease were also evaluated.
Materials & Methods: 150 one-day old broiler chickens were divided into seven groups (4 experimental groups of 30 birds and 3 control groups (unvaccinated unchallenged, challenged, just vaccinated). In experimental groups birds were vaccinated either via drinking water or as food carrier with thermostable I-2 vaccine and then challenged with virulent isolate of NDV (**JF820294.1**), 8 birds were added as in-contact birds to vaccinated groups. Following challenge 7 extra birds were added to all groups as in-contact with vaccinated and challenged birds. Survival rate, clinical signs, necropsy finding and mean antibody titer were evaluated in different experimental and control groups.
Results & Conclusion: Results showed that both routes of administration, following primary and/or secondary dose, provoked production of protective antibody in commercial chickens. Also horizontal transmission of live vaccine virus from vaccinated to unvaccinated chickens housed together, induced in them an antibody response that protected all of them against a local field isolate of virulent strain of ND virus (IVPI 2.46), while all unvaccinated-challenged birds died. Interestingly, excretion of challenge virus from challenged birds was so low to induce clinical signs in susceptible chickens that were added to the house to evaluating transmission of Newcastle disease. These results indicate the efficacy of strain I-2 vaccine coated on the oiled wheat and/or via drinking water administration as it protects broiler chickens from challenge with virulent NDV.
Keywords: Newcastle disease, thermostable vaccine, strain I-2, broiler chicken

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Acute phase responses in commercial broiler chickens experimentally infected with a highly virulent Newcastle disease virus strain

Sobhan Firouzi[1], Hassan Nili[1], Keramat Asasi[1], NajmehMoslehV, Hassan Habibi[2*], Mitra Mohammadi[1]

1 Department of Clinical Sciences, School of Veterinary Medicine, Shiraz University, Shiraz, Iran
2 Departments of Animal Science, Faculty of Agriculture, Persian Gulf University, Bushehr, Iran
Corresponding author's email:h.habibi@pgu.ac.ir

Objectives:Newcastle disease (ND) is a major threat to poultry industry production in developing countries due to the high morbidity and mortality associated with virulent strains of the virus. Acute phase responses (APRs) are proteins whose plasma concentrations increase or decrease in response to inflammation such as Newcastle disease. Measurement of APRs is a useful marker of inflammation in veterinary clinical pathology.
Materials & Methods: Inflammation-induced changes in groups of 15 four week old broilers vaccinated twice with strain I-2 of NDV at days 28 and 35, and challenged intranasally with 0.05 ml allantoic fluid containing $10^{4.3}$ EID50/ml of a highly virulent NDV at day 42. Birds in other groupsof 15 each were kept as positive and negative controls. Sera samples were collected at days 47 and 52, and assayed for inflammatory mediators (TNF-α and IFN-γ), acute phase proteins (haptoglobin (Hp) and serum amyloid A (SAA)) and gangliosides (total sialic acid (TSA), lipid-bound sialic acid (LBSA); and protein-bound sialic acid (PBSA)) using validated standard procedures.
Results & Conclusion: Results showed that the concentrations were significantly different between all groups and all variables were higher in non-vaccinated challenged birds compared with vaccinated challenged ones in poultry. The results suggest that APPs could be useful markers for prognosis and diagnosis of disease in poultryand may provide a similar usage in identifying poultry health's problems.
Key word: Acute phase protein, Broiler chicken, Newcastle disease

Effect of sex ratio on production and hatchability of broiler breeder flock

Mehdi Haghighi1, Mehrdad Irani2, Mehdi Jafari1, Hassan Habibi*3 and Sobhan Firouzi4
1MSci Student of Animal science, Ghaemshahr Branch, Islamic Azad University, Ghaemshahr, Iran
2Animal Science Department, Ghaemshahr Branch, Islamic Azad University, Ghaemshahr, Iran
3Department of Animal Science, Faculty of Agriculture, Persian Gulf University, Bushehr, Iran
[4]DVM – Ph.D. of Poultry Sciences, Babol, Iran
***Corresponding author`s Email: h.habibi@pgu.ac.ir**

Objectives: Several factors have been reported to affect fertility and hatchability of chicken eggs. In breeding flocks of birds, mating ratio of male to females plays a pivotal role in optimizing fertility and hatchability in the eggs produced by a flock.The study provides information on the reproductive performance of broiler breeder flock maintained at different male: female (M: F) ratios.
381, thirty week-old broiler breeders were randomly divided into three experimental groupsof three replicates each and were assigned to one of the following male: female ratio, 1M: 13.3F, 1M: 11.6F and 1M: 10.5F. The birds wererandomly allotted to 9 $2m_x2m$ floor pens in an environmentally controlled house.Eggs were collected daily and weekly egg production/bird was calculated for each group.
Hatchability and egg production were significantly affected ($P < 0.05$) by sex ratio. 1M: 1:13.3F had significantly ($P < 0.05$) higher egg production. Hatchability of 1M: 10.5F were significantly($P < 0.05$) the highest followed by 1M: 11.6Fand that of 1M: 13.3F sex ratio were the lowest from week 33.Increasing the sex ratio had the effect that although average egg production/female was lower, hatchability were improved, possibly as a result of more frequent sexual interactions of males and females.

Evaluation of lead effect on intestinal villi morphology and immune response to Newcastle live vaccine following oral administration of lead as heavy metal in Japanese quail

Babaahmadi Milani M[1*], Bahadoran Sh[2], Hassanpour H[3], Fallah Mehrjerdi A[4], Khosravi Alekoohi Z[5]
[1]Resident of poultry disease; [2]Department of clinical sciences; [3]Department of basic sciences; [4]Department of Food Hygiene and Quality Control, Faculty of Veterinary Medicine, University of shahr-e-kord, shahr-e-kord, Iran; [5]Doctor of veterinary medicine, shahr-e-kord, Iran
Corresponding author's email: miladmilani_b@yahoo.com

Objectives: The purpose of this study is evaluation of lead effect on the intestinal villi morphology and immune response to Newcastle live vaccine following experimental toxicity with lead in the Japanese quail.
Materials & methods: A total of 60 one-day old quails were divided into 2 groups with 10 quails in each group (3 replicates). The group 1 was fed with basal diet + 100 ppm of lead acetate in the drinking water in the total period of experiment; the group 2 was fed with basal diet as control. The quails were reared on the litter under standard condition for 35 days. In day 35, from each group, 9 quails were randomly selected (3 birds of each pen) and blood samples were collected for HI test. To evaluate the intestinal morphology, 3 segments of intestine (duodenum, jejunum and ileum) were isolated and washed with phosphate buffer saline (PBS, pH7), then put in the Clark solution for 45 minutes and finally put in to alcohol ethylic 50% for 24 hours according to Teshfam & etc. method (2005). To evaluation the villi morphology, each sample was stained with PAS solution then a row of villi was cut and observed with measuring lens under the light microscope.
Results & conclusion: The results showed that the group challenge with lead acetate had significantly ($p<0.05$) lesser villi dimensions and absorptive surface than control. The Newcastle antibody titer was not significantly differ between treated group and control. In conclusion, the results of present study showed that lead acetate causes negative effect on villi dimensions and absorptive surface so can decrease absorption of nutrients, although lead acetate did not significant effect on the Newcastle antibody titer between treated group and control.
Key words: Lead, Intestinal morphology, Villi, Antibody titer, Japanese quail

Evaluation of vitamin C effect on intestinal villi morphology and immune response to Newcastle live vaccine in Japanese quail

Babaahmadi Milani M[1*], Bahadoran Sh[2], Hassanpour H[3], Fallah Mehrjerdi A[4], Khosravi Alekoohi Z[5]
[1]Resident of poultry disease; [2]Department of clinical sciences; [3]Department of basic sciences; [4]Department of Food Hygiene and Quality Control, Faculty of Veterinary Medicine, University of shahr-e-kord, shahr-e-kord, Iran; [5]Doctor of veterinary medicine, shahr-e-kord, iran
Corresponding author's email: miladmilani_b@yahoo.com

Objectives: The purpose of this study is evaluation of vitamin C effect on the intestinal villi morphology and immune response to Newcastle live vaccine in the Japanese quail.
Materials & methods: A total of 60 one-day old quails were divided into 2 groups with 10 quails in each group (3 replicates). The group 1 was fed with basal diet + 500 ppm of vitamin C in the diet in the total period of experiment; the group 2 was fed with basal diet as control. The quails were reared on the litter under standard condition for 35 days. In day 35, from each group, 9 quails were randomly selected (3 birds of each pen) and blood samples were collected for HI test. To evaluate the intestinal morphology, 3 segments of intestine (duodenum, jejunum and ileum) were isolated and washed with phosphate buffer saline (PBS, pH7), then put in the Clark solution for 45 minutes and finally put in to alcohol ethylic 50% for 24 hours according to Teshfam & etc. method (2005). To evaluation the villi morphology, each sample was stained with PAS solution then a row of villi was cut and observed with measuring lens under the light microscope.
Results & conclusion: The results showed that the group fed vitamin C had significantly ($p<0.05$) greater villi dimensions and absorptive surface than control. The Newcastle antibody titer was not significantly differ between treated group and control. In conclusion, the results of present study showed that vitamin C causes positive effect on villi dimensions and absorptive surface so can increase absorption of nutrients, although vitamin C did not significant effect on the Newcastle antibody titer between treated group and control.
Key words: Vitamin C, Intestinal morphology, Villi, Antibody titer, Japanese quail

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Antibiotic susceptibility testing of Eschershia coli isolated from poultry carcasses referred to laboratory in Sabzevar in the first 6 months of 1394, usingantibiogram test

Z.Salari, M.Sadeqian, A.Hosseini

Pasteur veterinary laboratory of Sabzevar

salari_z44@yahoo.com

Objective: Pathogenic and nonpathogenic E. Coli strains live in digestive tract of mammals and birds. Some strains of E. Coli in humans, especially those who have been in contact with the poultry industry, result in diarrhea. E.Coli as primary or secondary bacteria can lead to systemic or local infections. The bacteria outbreak at industrial poultry flocks in Sabzevar leads to economic losses, casualties, reduction of growth, antibiotic resistance.
Materials & methods: All carcasses were sent to the lab and cultured. The samples selected from heart and liver then cultured in Macconkey agar medium. Next the colony were transferred to Muller Hinton agar, and then measured for sensitivity.
Results & Conclusion: Results of this investigation described at table.It is necessary to do antibiogram test before antibiotic prescription to prevent antibiotic resistance. Using probiotics and maintaininghealth management isrecommended.

Phylogenetic Analysis Based on HA Gene Sequences of H9N2 Subtype inNajafProvince, Iraq

Qayssar Ali kraidi[1,2],OmidMadadgar[2], ArashGhalyanchi Langeroudi [2] , Vahid Karimi [3]
[1]Department of Pathology and poultry diseases, Faculty of Veterinary Medicine, University of Basra, Basra, Iraq,[2] Department of Microbiology and Immunology, Faculty of Veterinary Medicine, University of Tehran, Tehran, I.R.Iran,[3]Department of poultry diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, I.R.Iran.
Corresponding authors email:arashghalyanchi@gmail.com

Objective: The aims of present study were to define the genetic and phylogenetic relationships between HA genes identified in two H9N2 viruses of Najaf province, Iraq and other H9N2 sequences available in the Gene bank database.
Materials and methods: Trachea tissue specimens from 21 commercial broiler chicken flocks suffering from respiratory signs from different locations in province of Najaf were collected according to the standard method for clinical poultry specimen's.Initially RNA was extracted directly from tracheas, based on the manufacturer's instruction, followed by synthesized of cDNA by reverse transcription (RT) reaction. All samples were submitted to RT PCR and amplified by using one pair of specific primers for HA gene with a part of 776 bps.The PCR products were assessed by gel electrophoresis on 1% agarose gel, and thePurified PCR products were sequenced from both directions. To determine the genetic diversity of these viruses, all data related to nucleotide sequence of HAgene of present study were edited with the CLC Main Workbench software and Phylogenetic analysis was performed with the MEGA5 software,
Results and conclusion: out of the 21 samplesexamined, 2 (9.52%) samples found positive for H9 subtype viruses. Phylogenetic analysis based on HA gene sequences showed that the recently diagnosed Iraqi H9N2 strains of Najaf province are closely related to each other with high identity (99.2%), and shared closed relationship with gene sequences of other H9N2 isolates from the Middle East strains,in particular with Iranian strains which showed (97.2%) identity.Our analysis indicated that the H9N2 virus population circulating in the countries bordering Iraq may be considered the main source for the viruses detected in the country.
Keywords: phylogenetic, Iraq, Najaf, H9N2, Heamaglutinin

Isolation of *campylobacter jejuni* and*C.coli* from quail, Partridge, and Ostrich meat

HamidrezaKazemeini 1*, HamidrezaAkafzade 2, EbrahimRahimi 3
1. Department of Food Hygiene and Quality Control, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran.
2. DVM, Faculty of Veterinary Medicine, Shahrekord branch, Islamic Azad University, Shahrekord, Iran.
3. Professor of Food Hygiene and Quality Control, Faculty of Veterinary Medicine, Shahrekord branch, Islamic Azad University, Shahrekord, Iran.
Corresponding authors email: Hamid.Kazemeini@gmail.com

Objectives:*Campylobacter* spp. is one of the most frequent pathogens of acute bacterial gastroenteritis which is transmitted mostly via food originating from animals. The aim of this present study is to detect thermophilic*campylobacter* species in quail, partridge, and ostrich meat in Ahvaz, Iran.
Materials and Methods: From July 2009 to Februry 2010, 104 samples of quail (n=50), Partridge (n=30) and Ostrich (n=24) meat for sale in retail outlets in Ahvaz, Iran, were analyzed for presence of *Campylobacter.*
Results & Conclusion:*Campylobacter* spp. was isolated from 28 of 50 (58%) quail meat, 9 of 30 (30%) partridge meat and 3 of 24 (12.5%) ostrich meat samples. The identification of 40 *Campylobacter*spp. isolates obtained from meat samples were 90% (36) *Campylobacter jejuni* and 10% (4) *C.coli*. The study concluded that high proportion of poultry meat marketed in Ahvaz, Iran are contaminated by campylobacter with a possible risk from such microorganism especially from consumption of undercooked or post-cooking contaminated poultry products.
Keywords:*Campylobacter*, Quail, Partridge, Ostrich, Poultry meat, Prevalence

Prevalence and Antimicrobial Resistance of *Salmonella* Isolated from Retail Raw Turkey, Ostrich and Partridge Meat in Iran

EbrahimRahimi 1, HamidrezaAkafzade 2, HamidrezaKazemeini 3*, MehrdadAmeri 4

1. Professor of Food Hygiene and Quality Control, Faculty of Veterinary Medicine, Shahrekord branch, Islamic Azad University, Shahrekord, Iran. 2.DVM, Faculty of Veterinary Medicine, Shahrekord branch, Islamic Azad University, Shahrekord, Iran.3.Department of Food Hygiene and Quality Control, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran, 4.Wyeth Research,Chazy, New York, USA.

Corresponding authors email: Hamid.Kazemeini@gmail.com

Objectives: The objective of this study was to determine the *Salmonella* prevalence, the serotypes involved andantimicrobial susceptibility patterns of *Salmonella* isolates recovered from retail raw turkey, ostrich,and partridge meat in Esfahan, Iran.

Materials and Methods:A total of 249 samples of turkey, ostrich, and partridge meatwere purchased from 8 randomly selected retail outlets from April 2011 to July 2012. All sampleswere evaluated for the presence of *Salmonella*, serotyped and tested for antimicrobial susceptibility.

Results and Conclusion: There was an overall *Salmonella* prevalence of 6.8%. The prevalence of *Salmonella* was statisticallysignificantly higher in turkey meat (9.7%) than in ostrich meat (4.6%) ($P \leq 0.05$). No *Salmonella* wasisolated from partridge meat samples. *Salmonella* isolates recovered from turkey and ostrich meatsamples were of 4 different serotypes including *Salmonella enterica ser.* Typhimurium, *Salmonellaenterica ser.* Enteritidis*, Salmonella enterica ser.* Agona, and *Salmonella enterica ser*. Paratyphi B.The susceptibility of the 17 isolated strains to 12 antimicrobial drugs was determined using the diskdiffusion method. Resistance to nalidixic acid was the most common finding (58.8%), followed byresistance to tetracycline (41.2%), streptomycin (29.4%), trimethoprim (23.5%), chloramphenicol(11.8%), and ciprofloxacin (5.9%). *Salmonella* isolates recovered from ostrich meat samples weresusceptible to all 12 antimicrobial agents. To our knowledge, this is the first study on the prevalenceof *Salmonella* in partridge meat and first report of the isolation of *Salmonella* spp. from retail rawturkey and ostrich meat in Iran.

Keywords: Antimicrobial resistance, Ostrich, Partridge, *Salmonella*, Turkey

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Detection and Identification of *Campylobacter* spp. from Retail Raw Chicken and Turkey Meat in Iran

EbrahimRahimi 1, HamidrezaKazemeini 2*, HamidrezaAkafzade 3

1.Professor of Food Hygiene and Quality Control, Faculty of Veterinary Medicine, Shahrekord branch, Islamic Azad University, Shahrekord, Iran.

2. Department of Food Hygiene and Quality Control, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran.

3. DVM, Faculty of Veterinary Medicine, Shahrekord branch, Islamic Azad University, Shahrekord, Iran.

Corresponding authors email: Hamid.Kazemeini@gmail.com

Objectives:*Campylobacter* species are common bacterial pathogens causing gastroenteritis in humans worldwide and the consumption of poultry meats is suspected to be the leading cause of this illness. This study was therefore conducted to determine the prevalence of *Campylobacter* spp. from retail raw meats in Ahvaz, Iran.

Materials and Methods: From July 2013 to February 2014, a total of 110 raw meat samples from chicken (n = 60)and turkey (n = 50) were purchased from randomly selected retail outlets in Ahvaz, Iran and were evaluated for the presence of *Campylobacter*.

Results and Conclusion:*Campylobacter* spp. isolated from 30 of 110 meat samples (27.27%) examined. The highest prevalence of *Campylobacter* spp. was found in chicken meat (61.7%), followed by turkey meat (38.3%). The most prevalence *Campylobacter* species isolated from meat samples was *Campylobacter jejuni*(88.3%), the remaining isolates were *Campylobacter coli* (11.7%). All 30*Campylobacter* strains identified as *C.jejuni and C. coli* were also positive by using polymerase chain reaction (PCR). Significantly higher prevalence rates of *Campylobacter* spp. ($P < 0.05$) were found in the meat samples taken in summer (44.1%). Furthermore, to ensure food safety, poultry meats must be properly cooked before consuming.

Keywords: *Campylobacter*, Raw meat, Chicken, Turkey

Subpopulation characterization of Newcastle disease virus LaSota strain by plaque purification technique

Ebrahimi MM*, Shahsavandi S,Masoudi S

Poultry Viral Vaccines Research and ProductionDepartment, Razi Vaccine and Serum Research Institute, Karaj, P.O.Box:31975-148, Iran

Corresponding author's e mail: mm.ebrahimi@rvsri.ac.ir

Objectives: Newcastle disease (ND) is one of the most economically damaging widespread diseases of poultry. In ND endemic areas, the prevention of this disease assumes a key role in any vaccination programs. Lentogenic ND virus strains such as the Hitchner B1 and LaSota strains are widely used as live vaccines againstthe disease. Cloned vaccines have the advantage of being more stable immunity than mixed virus strain vaccines. Plaque morphology is a marker for differentiation ND virus strain.
Materials and Methods: For plaque purification primary chicken embryo fibroblast (CEF) cell cultures were prepared from the fertile specific pathogen free (SPF) eggs. The cells in six-well tissue culture plates were inoculated with 100 µl of a serially diluted viral suspension from 10^{-1} to 10^{-6}. After adsorption for 1 h at 37°C, each of the viral suspensions was replaced with overlay DMED containing antibiotics, 0.3 µg/ml trypsin and 4% agarose and incubated for 3 days at 37°C and 10% CO_2.Each of the clonedviruses was injected into 5 SPF eggs and the infective allantoic fluids were harvested and pooled. Then intra cerebral pathogenicity index (ICPI), intra venous pathogenicity index (IVPI) and mean death time (MDT) tests were assessed.
Results and conclusion: Three cloned virus wereassayed for their antigenicity and pathogenicity. The morphologyandthesizeofthe appeared plaques were varying.The ICPI was estimated 0.32, 0.38, and 0.41 for the clones 1-3 respectively. MDTwas calculated 104, 101, and 98 while IVPI recorded 0 for all of the cloned viruses. This study was revealed that the LaSota strain of ND virus composes of some sub-population strains with different pathogenicity indices.
Keywords: Newcastle disease, LaSota strain, Sub-population, Plaque purification

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CLINICAL AND HISTOPATHOLOGICAL EVALUATION OF AVIAN SALMONELLOSIS : ISOLATION AND IDENTIFICATION STUDY

Ghaffari .M* , Homayounimehr . AL ,Tabatabaee .SZ , Khamane , N

Department of Avian Diseases, Faculty of Veterinary Medicine, Islamic azad university karaj branch , Karaj , Iran

Corresponding author's email: * Irandvm@yahoo.com

Objectives:This study was conducted to determine the occurrence and pathology of pullorum disease, fowl typhoid and salmonellosis (paratyphoid infection) in dead chickens at necropsy.
Materials & Methods:Chicken samples from poultry farmers who took their birds for diagnosis at the Rasa avian diagnostic clinic and laboratory. The information form obtained included the name of the farmer, age, breed, and source of the birds. The date the birds were bought from the hatchery, total number of birds in the flock, number affected, clinical observations, and the number of birds that died of the disease was also recorded. Postmortem examination was carried out on the chicks submitted for diagnosis. Yolk sac and visceral organs were aseptically collected for bacteriological examination. A total of 80 samples (liver, ovary and intestine) were collected for isolation of bacteria in different media, and identification was performed based on the staining, cultural and biochemical properties of Salmonella spp. Routine histopathological method was used for the detection of tissue level alterations in Salmonella infected cases.
Results & Conclusion: Grossly, in all the infected cases the liver was enlarged and congested and in few cases, liver discoloration with focal necrosis. Old raised hemorrhages in the caecal tonsil and congested deformed ova were other important findings. There was catarrhal inflammation in the intestine. Microscopically, the section of livers showed congestion, hemorrhages, focal necrosis with infiltration of mononuclear cells. The pulmonary lesions consisted of sero-fibrinous exudation with mononuclear cell infiltration. The intestinal mucosa exhibited congestion, hemorrhages and infiltration of plasma cells and macrophages. Out of 80 samples, 9 isolates were identified as Salmonella (11.25 %). Of them, five isolates were identified as Salmonella gallinarum, causative agent of fowl typhoid, one isolate was characterized as Salmonella pullorum, causative agent of pullorum disease and other three motile salmonella were identified as paratyphoid infection.
Key words : avian . salmonellosis .dead chicken . identification .pathognomonic signs

The effects of Infectious Bronchitis disease on depopulation of broiler flocks in Iran (2012-2013)

Ghasemi N.[1*], Bokaie S.[1], Ghafouri S.A.[2], Amirhajlou S.[2], Fallah M.H.[1]

1-Department of Food Hygiene and Quality Control, Faculty of Veterinary Medicine, University of Tehran, Tehran -Iran

2-Department of Hygiene and Management of Poultry - Iran Veterinary Organization, Tehran - Iran

Corresponding author's email: Ghasemi86dvm@yahoo.com

Objectives: The purpose of this study was to determine the effects of Infectious Bronchitis disease (As one of the important problems of the country poultry industry)on depopulation of broiler flocks in Iran (2012-2013).

Materials& Methods: In this study, data used from 147 registered documents of broiler flocks in different farms and times that they were depopulated due to ascending mortality in5 consecutive days in Iran (2012 – 2013). At first the data were categorized (Vaccination, the number of vaccinations and method of vaccination) and accepted with normality test, after it analyzed by SPSS (V: 16.0) statistical software and performed chi-square test($P<0.001$).

Results & conclusion: The results of this study showed that Infectious Bronchitis disease hasmajor participation in the incidence of Respiratory Complex after Newcastle Disease. Vaccination, the number of vaccinations and method of vaccinationwere main factors among depopulated flocks.The relative frequency of depopulated flocks thatvaccinated (by live Infectious Bronchitis vaccine once in raringperiod were more than flocks which had twice vaccination (respectively 66% and 26.5%) ($P<0.001$).Furthermoreresults showed the relative frequency of depopulated flocks had vaccinated by spraying method wassignificantly more than orally (drinking) method (respectively 49% and 25.2%) ($P<0.001$).It seems thatInfectious Bronchitis disease was contributed in Complex Respiratory Syndrome and depopulation of broiler flocks as an effective factor and administering vaccination with live Infectious Bronchitis Vaccine with spray method and twice in a raringperiod can be effectivein reducing of depopulating.

Keywords: Bronchitis, Respiratory Complex, Depopulating of Flocks, Vaccination, Iran

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The effect of Interferon Gamma (IFN-gamma) Promoter Genotype on Transcription Factor Binding Sites in Local Chicken

Morammazi S[*], Habibi H,

Department of Animal Science, Faculty of Agricultural Sciences and Natural Resources, Persian Gulf University, Boshehr, Iran.

Objectives: Identifying the genes that involved in the immune system are very important to immune system study and poultry breeding programs. One of the factors that affect the level of gene transcription is polymorphism in the upstream region of genes located on transcription factor binding sites. In the current study, the effect of promoter genotypes on transcription factor binding sites was investigated for interferon gamma as a gene that involved in the immune system.

Materials & Methods: the DNA samples were obtained from 20. The DNA was taken out from leukocytes. To identify polymorphisms in the upstream region of IFN-gamma gene, DNA from 20 blood samples of Khozestan native chickens were extracted through proteinase K digestion followed by phenol/chloroform extraction and ethanol precipitation, and blown up with PCR primers (designed base on GenBank accession No. EF692494.1) covering the promoter region of IFN-gamma gene. The PCR products were purified and sequenced in both directions in Macrogen Company (Seoul, Korea). The answers were edited with Mega5 software. Moreover to detect the effect of genotype on TFBSs in the promoter region of IFN-gamma gene, In Silico analysis was carried out using the TFscansite online software.

Results & Conclusion: Two polymorphisms have been identified in the upstream regulatory region of IFN-gamma in Khozestan native chicken. The variations were similar to IFN-gamma promoter genotypes with GenBank accession No. EF692494.1 and EF692495.1. These mutations were G347A and C553T based on GenBank accession No. EF692494.1 (GC=genotype 1 and AT=genotype 2). The In Silico analysis revealed that the promoter region of IFN-gamma gene includes many TFBSs. In this study, we showed that the IFN-gamma 5' UTR polymorphism (SNP5) was significantly affected the TFBSs. The G347A polymorphism was constructed a binding site for GATA-1_CS2 transcription factor in genotype 1. Furthermore, the C553T variation made binding sites for AP-2-alpha/gamma, gamma-IRE_CS and Thy-1-FP-VI/VII transcription factors in genotype 1, and generated a binding site for NF-Y-consensus transcription factor in genotype 2. This result revealed that the genotype 2 less some TFBSs and may affect the level of gene expression and immune system. So, further studies need to detect the relationship between IFN-gamma 5' UTR genotypes and expression levels and their association with immune system.

Keywords: IFN-gamma gene, polymorphism, transcription factor, In Silico analysis, immune system, Khozestan native chicken

Identification of repressive elements and functional nuclear factor binding sites in Gal2 gene in Khozestan local chicken

Morammazi S*, Habibi H

Department of Animal Science, Faculty of Agricultural Sciences and Natural Resources, Persian Gulf University, Boshehr, Iran.

Objectives: The recognition of repressive elements and functional nuclear factor binding sites or transcription factor binding sites (TFBSs) is the first step on the way to deciphering the DNA regulatory code. For both, immune systems and poultry breeding programs, study the expression and identification the TFBSs in promoter regions of defense gene are very important. We here performed an In Silico study to recognize binding sites of transcription factors in the upstream region of Gal2 gene in Khozestan local chicken, which essential for the immune system.

Materials & Methods: Genomic DNA samples were obtained from 20 Khozestan local chickens. The genomic DNA was extracted from white blood cells using a standard phenol–chloroform extraction protocol. According to the avian Gal2 gene (GenBank accession No. AY621317.1), one pair of primers was designed to amplify the promoter of the avian Gal2 gene. Polymerase chain reaction (PCR) products were sent to Macrogen Company (Seoul, Korea) for sequencing in both directions. The results of sequencing were edited using Mega5 software. Herein, we screened the sequence for identifying polymorphism in this region of GAL2 gene. Furthermore, In Silico analysis was performed to detect TFBSs in the promoter region of Gal2 gene using the TFscansite online software.

Results & Conclusion: In the samples that selected for this investigation, the sequencing results indicated that there are no polymorphisms in the promoter region of Gal2 gene. The In Silico analysis showed that the promoter region of Gal2 gene contains many TFBSs for CdxA, betaP-F1, lysozyme-E, c-Myb, MCBF_RS, H1-box, GATA-CTCF, HiNF-A-CTCF transcription factors. This result indicates the expression of Gal2 gene is regulated by different TFs and also many factors can affect its transcriptional level. Because this gene had many TFBSs, so can be a suitable candidate gene for further study, especially for the immune system and gene expression study in chickens.

Keywords: Gal2 gene, transcription factor, Khozestan local chicken, In Silico analysis, immune system

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Antimicrobial resistance profile of *Salmonella* isolates from poultry flocks around Sanandaj, Kurdestan

Dolatyabi S*,Peighambari SM

Department of Avian Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran

Corresponding author's email:s.dolatyabi@gmail.com

Objective: *Salmonella* is an important zoonotic pathogen and its prevalence in the animals act as a continuous threat to man. Because of prudent use of antibacterial agents in poultry industry, the rate of antimicrobial resistance among poultry bacterial pathogens has been increased. The present study was carried out to investigate the antibacterial resistance pattern of *Salmonella* isolates recently recovered from poultry farms around Sanandaj in Kurdestan province.

Materials & Methods: The sensitivity of four *Salmonella* isolates obtained from 20 poultry farms (2220 fecal samples) around Sanandaj city was investigated against a panel of 20 antibacterial agents using the standard agar disk diffusion test.

Results & Conclusion: All *Salmonella* isolates were susceptible to florfenicol, cefixim, ceftriaxon, ceftazidime,gentamycine.whereas all were resistant to nalidixic acid, flumequine and tetracycline.The percentages of isolates that were resistant to the other drugs were as follows: 100% to each of nalidixic acid, 75% to each of lincospectin and enrofloxacin,flumequine and tetracycline. Multi-resistance was variable among the *Salmonella* isolates. All isolates were resistant to at least four antimicrobial agents. Multiple resistance to 10 and 11 antibacterial agents were observed in 25% of isolates, respectively. The results of this study showed that the resistance of poultry *Salmonella* isolates to the most of the antimicrobial agents common in poultry industry is widespread and of concern to poultry industry as well as public health.

Key words: *Salmonella* resistance, poultry, Sanandaj,kurdestan, Iran.

Morphopathological characteristics of avian pox outbreakin backyard turkeys

Norouzian H[1*], FarjanikishG[1], Pirzade A[2]
[1]*Department of Clinical Studies, School of Veterinary Medicine, Lorestan University, Khorramabad, Iran*
[2]*Department of Pathobiology, School of Veterinary Medicine, Lorestan University, Khorramabad, Iran*
***Corresponding author's email: norouzian.h@lu.ac.ir**

Objectives:*Avian pox virus* is a member of the family *Poxviridae*and genus *Avipoxvirus*. *Poxviridae*viruses are large,double-stranded DNA viruses. This group contains several similar strains of virus that vary in their host specificity.The disease affected all poultry, as well as in pet and wild birds.
Two forms, cutaneous and diphtheritic are generally seen. The dry form of avian pox causes lesions on areas of the head, legs and body that contain no feathers. These lesions start as small blisters then progress into wart-like nodules and later become dry scabs. The less common form (known as the diphtheritic form) affects the mucous membranes of the upper digestive and respiratory tracts and has been reported infrequently.This paper describes morphopathological characteristics of avian pox in backyard turkeys.
Materials & Methods: Of 110 total turkeys, seven birds with history of depressed appetite and weight loss were referred to the clinic. The client claimed that morbidity rate was (50 %) and no mortality was observed but other remained turkeys of his farm are at risk. There were soft, yellowish nodules, 1 to 2 cm in diameter, and raised above the surface of the head and neck. After physicalexaminations the biopsy samples were taken and fixed in 10% neutral buffered formalin, routinely processed, and stained with hematoxylin and eosin (HE) for histopathologic examination.
Results &Conclusions: On clinical examination, nodules were moderately soft, and superficial layers of the nodules were removed without difficulty. A small perforation covered with tissue debris was in the nodules. The soft tissue beneath the superficial layers of nodules was congested and hemorrhagic.Histopathological examination of biopsy samples revealed epidermal hyperplasia associated with enlarged or ballooned, degenerated keratinocytes with a pale vacuolated cytoplasm and eosinophilicintracytoplasmic inclusion bodies (Bollinger bodies) in keratinocytes.
The fundamental principle for controlling poxvirus is to interrupt its transmission. Removing heavily infected animals is also helpful since it reduces the source of virus and reduces the opportunity for contact transmission. Control for turkeys includes elimination of water to control the mosquito population and decontamination of bird feeders and perches regularly with a 10% bleach solution. We asked the owner to quarantine the infected turkeys immediately, asthe main useful strategy for controlling the spread of the disease. After the diagnosis was confirmed, control measures and the vaccinations of non-infected turkeys were recommended.
Keywords: Turkey, pox, histopathology, keratinocytes, vaccinations

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Survey of *Salmonella* infections in poultry farms around Mashhad city

Qorbaniun E[1*], Peighambari SM[2], Haghbin Nazarpak H[1], Mahmoodi SA[1], Rezayan H[1], Danayi Fard MR[1], Golamrezayi J[1]
[1]Department of Clinical Sciences, Faculty of Veterinary Medicine, Islamic Azad University- Garmsar branch, Garmsar, Iran; [2]Department of Avian Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran
***Corresponding author's email: Ehsan.qorbaniun@gmail.com**

Objectives:*Salmonella* is one of most important zoonotic diseases of food origin around the world. Poultry can play an important role in epidemiology and distribution of salmonellosis in humans. The aims of this study were to isolate *Salmonella* from poultry farms around Mashhad city and identify the serogroupsof the isolated *Salmonella*.
Materials & Methods: A total number of 1560 samples were collected from freshly dropped feces of broiler chickens in 23 flocks. Each 10 samples were pooled and processed for *Salmonella* isolation according to standard procedures.Slide agglutination test was used for determination of O serogroups using polyvalent antisera of A to D.
Results & Conclusion: Out of 1560 samples (156 pooled-samples), 30 *Salmonella* isolates were recovered. The results of serological tests identified sixserogroup D, 23 isolates as serogroup C and one isolates as a serogroup other than A-D. The results of this study showed the presence of *Salmonella* infection among broiler chickens in Mashhad region. These findings are important for Iranian poultry industry and of concern for public health.
Keywords:*Salmonella*, serogroup, broiler chicks, Mashhad, Iran.

Evaluation the effects of H9N2 Avian influenza virus on kidney tissue in SPF chicks

HajiabalooV[1*],Bijanzad P[1],Azizpour A[2],Taefehshokr S[3],Azari-Key Y[3]
1.Departmentof Clinical Science, Tabriz Branch, Islamic Azad University, Tabriz, Iran
2.Meshginshahr Faculty of Agriculture, University of MohagheghArdabili, Ardabil, Iran
3.College of Veterinary Medicine, Tabriz Branch, Islamic Azad University, Tabriz, Iran
Corresponding author's email:vahid.sohail@yahoo.com

Objective: It was demonstrated that the avian influenza virus (AI) causes histopathologic lesions in kidney tissue of infected chickens. The aim of this study was to investigate pathologic change in AI infected SPF chicks.
Materials & Methods: For this purpose, 40 Lohmann day old SPF chicks was randomly divided in 2 groups of 20 chicks. In day 21, chicks in group 1 was inoculated by H9N2 virus with $10^{5.7}$ EID_{50}, and second group was inoculated by normal saline via intravenous. From each group 10 chicks were selected randomly 72 hours post inoculation and samples were taken from kidney.
Results & Conclusion: Histopathologic lesion, such hyperemia and necrosis in urinary tubules was seen in infected group. The results of current study indicate that H9N2 in SPF chickens in addition to tissue tropism to kidney, also nephropathogenic.
Keywords: Avian Influenza (H9N2), Histopathlogic changes, tissue tropism, nephropathogenic

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Detection of Fowl Adenovirus from broiler flocks in Qom and Kashan during 2011-2012

Ali Vafaei, Hossein Hosseini

Background: Fowl adenovirus (FAdV) belong to the genus Aviadenovirus that includes the important chicken adenoviruses and display a wide range of clinical and pathological presentations. Aim of this study was detection of FAdV in broiler flocks in Qom and Kashan by molecular method.
Material and methods: in this study samples were taken randomly from 90 broiler flocks from 28-day old to the slaughter in Qom and Kashan during 2011-2012. Samples were taken from liver, respiratory and digestive tracts. DNA were extracted from the samples and were tested by an amplification of a 590 bp region of the hexon gene.
Findings: eight flocks (8.8%) have been found to be positive and 82 flocks (91.2%) were negative.
Result: This findings shows that FAdV are circulating in Iranian broiler flocks. The importance of FAdV in boiler diseases needs more investigation.

Comparison of immune response against Influenza disease vaccine in three strains of broiler chicks, Ross 308, Cobb 500 and Hubbard F15

[1]Mahya abdolshah*,[2]Gholamhosien Raufi, [3]Mansoor Mayahi
1.veterinary graduate of ShahidChamran University of Ahvaz
2.veterinary clinician in Semnan
3.Department of Avian Diseases, faculty of veterinary medicine in ShahidChamran University of Ahvaz
Email:Hobab100@gmail.com*

Objectives: In order to compare immune response againstInfluenza disease vaccine in three commercial broiler strains
Materials & Methods: 36ooo day-old broiler chicks Hubbard f15, Cobb500 and Ross308, were divided into 3 equal groups with 2 replicates and 6000 birds per replicate. The birds were reared under similar conditions from day-old 1 to 49 days of age. Blood samples were collected before vaccination and on days 7, 17, 27, 35, 42, 48 days. Twenty chickens of each group were bled randomly and antibody titer against Influenza disease vaccine was determined by HI test.
Results & Conclusion: results shows that there was significant differences in immune response againstInfluenza disease vaccine at the end 0f 49 days between Ross308 and Cobb500 with Hubbard f15strain($p<0.05$).the Cobb 500 and Hubbard stains respectively had highest and lowest immune response against Influenza diseases vaccine. Ross 308 had second status among strain So it can saidthat the similar vaccination program had different response in commercial broiler strains.

Keywords: commercial strains, HI test**,** Influenza disease**,** Immune response,Strains

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Identification of cross-reactive immunogenic proteins of fowl cholera causing of *Pasteurella multocida* serotypes A:1, A:3, and A:4, isolated in Iran.

Saeed Ataei Kachooe[1]; Anahita Emadi[1].
1Poultry Disease Diagnosis Department, Razi Vaccine and Serum Research Institute, Karaj, Alborz, Iran.

Pasteurellosis of birds, also called Fowl Cholera, is a bacterial disease of poultry and wild birds which causes noticeable morbidity and economical lost in traditional and industrial poultry farms. The disease is caused by different serotypes of Gram-negative bacterium named *Pasteurella multocida*. In Iran, serotypes A:1, A:3, and A:4 have been reported as the causative agents of the disease in infected farms and populations.Vaccination considered as the best method of prevention by all the infected countries and Iran. Vaccination can only cause a homologue protection between different serotypes. This is the reason some vaccine producers have to include even up to three serotypes in vaccine (trivalent) in order to increase vaccine efficacy against other causative serotypes. In the present study, crude sonicated cell extracts of *P. multocida* serotypes A:1, A:3, and A:4 were immunoblotted against chicken hyper-immune sera in order to identify cross-reactive immunogenic proteins of them. To do this, 35 chickens aged twomonths randomly divided into 7 groups of five and were injected by inocula consisted of cell suspensions of *P. multocida* of each serotype (monovalent) or three serotypes (trivalent). Birds received four intra-muscular (IM) injections with the time intervals of 14 days between first and second injections, and 10 days between second and third, and also third and forth injections. In the Control group, the same time table of injection was followed but with normal saline as inoculom. Blood samples were taken 7 days after the last injection, sera were collected and kept in -20°C up to experiments.Results showed that there are at least 5 cross-reactive immunogenic proteins in serotypes A:1, A:3, and A:4, in a way that antibodies produced by chicken in an immune response to immunization with whole cell Pasteurella suspensions are able to react with each of the 3 serotypes.These cross-reactive agents are proteins (or at least in some parts) with the molecular weight of 39, 40, 37, 53, and 30 K.Da. The 39 K.Da band was the most prominent immunoblott and introduced as candidate for molecular identification and future studies. Future research is suggested to also be the study of the possibility of the improvement of the present Razi Fowl Cholera vaccine by supplementing with 39 K.Da agent in order to improve the range of the immunogenicity of the vaccine against different serotypes.This study was supported by a grant from Razi Vaccine and Serum Research Institute, Ministry of Jahad-e-Keshavarzi.
Key words:*Pasteurella multocida*; fowl cholera; cross-reactive immunogen; vaccine.

The first report of *chronic myelogenous leukemia in a* Peafowl (*Pavo cristatus*)

Bagheri, S. S[1*]; Hassanzadeh, M.[1]; Keshavarz, S[2]; Barzegari, R[1]; Nasiri, S. M[2]

[1] *Department of Avian Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran*

[2]*Department of Clinical Pathology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran*

Corresponding author's email:seyedsinabagheri@gmail.com

An adult Peafowl (*Pavo cristatus*) was referred tothe Pet Bird's Clinic, the University of Tehranwith the symptom ofreluctance to move, anorexia and decreased activity. Various diagnostic tests were conducted that including of radiographs, CT scan, fecal gram staining, fecal culture, bone marrow biopsy, hematology and biochemical analysis.Hematologic data showed that the Peafowl was anemic while severe leukocytosis with non-ordinary shift to the left with presence of myeloid precursors such as myelocytes and myeloblasts in the blood smear were also noted. Myeloid leukemia was confirmed by bone marrow aspiration. Biochemical profile displayed liver and kidney's involvement and infiltration of neoplastic cells. There is little information regarding the leukemia in birds worldwide and no study was conducted in peafowls up to our knowledge.

Keywords:*Pavo cristatus, Chronic myelogenous leukemia*, Biochemical analysis, Hematology

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The impact of different chemical stabilizers on stability of the avian infectious bronchitis vaccine

Pishraft-Sabet L*[1], Masoudi S[1], Hoseini-Vafa N[2]

[1] *Department of Research & Production of Poultry Viral Vaccine, Razi Vaccine & Research Institute, Karaj, Iran;*[2]*Department of Quality Control, Razi Vaccine & Research Institute, Karaj, Iran*

Corresponding author'semail: lp_sabet@yahoo.com , l.sabet@rvsri.ac.ir

Objectives: Infectious bronchitis (IB) is an acute, highly contagious viral respiratory disease in chickenthat causes serious economic problems in poultry industry. The most effective means of protection against the disease in broiler is immunization with live-attenuated vaccine. The stability of the live viral vaccine is important for immunization efficacy;however,the virus is sensitive to the environmental changes. In order to maintain their potency and efficacy, adding the stabilizer agents to the lyophilized vaccines during preparation process stabilize the vaccine throughout the manufacturing, storage, and administration. Various types of compounds including sugars such as sucrose and lactose; polyols such as sorbitol; and proteinslikeslactalbumin, gelatin andpepton are used for this purpose. This study aimed to determine the efficacy of four different stabilizers on IB vaccine at three years-period.

Materials & Methods: Four different stabilizers including lactalbomin–lactose (LL), lactalbumin–sucrose (LS), lactose–peptone (LP) and gelatin–sorbitol (GS) were used to prepare lyophilized vaccines. The vaccine was titrated before and after lyophilization. To determine accelerated stability (based on OIE instruction), the vaccines were titrated after 7 days incubation in 37°C. Residual moisture of lyophilized vaccines was measured by Karl-Fisher method.Furthermore, the stability of the vaccines in 4°C was measured over 36 months at three months intervals. All experiments were repeated for three batches of the vaccine.

Results & conclusion: The results showed that acceptable titer of the vaccine was observed with four stabilizers. Residual moisture found to be in appropriate limit, ranged from 1.42-2.72%. Following seven days incubation in 37ºC, titer reduction of the vaccine with lactose-lactalbomin was the lowest. The results showed that after 36 months incubation in 4°C, the vaccine with LL has the highest titer. In conclusion, it seems that lactose-lactalbomin stabilizer provided good protection to IBV under lyophilization condition and maintenance of the vaccine for long time in 4ºC.

Key words: Infectious Bronchitis, Virus, Stabilizer, Vaccine

The survey of ectoparasites infection of *Columba livia* in Lahijan city, Gilan, Iran

Mohammad Reza Chaechi Nosrati[1*],Sadegh Rahbari[2] ,Ali Eslami[3]

1. Dept. of Pathobiology, Science and Research Branch, Islamic Azad University, Tehran, Iran

2. Department of veterinary parasitology, university of Tehran, Iran.

3. Member of Academy of sciences of Islamic Republic of Iran & faculty of veterinary medicine University of Tehran, Iran.

Introduction: The aim of this investigation was to study ectoparasitic infections of *Columba livia*.

Objective: This survey was conducted in Lahijan city, Northern area of Iran.

Methods: Sixty *Columba livia* in four parts of the city multi stage randomly selected, during the year 1390-1391. For this survey External parasites were stored in %70 alcohol containing %5 glycerol and after preparation were identified, by diagnostic keys.

Results: The ectoparasites were found beneath the feather of *Columba livia.* The ectoparasites were isolated and characterized. The external parasites included, *Pseudolynchiacanariensis* (%73.3), *Columbicolacolumbae* (%88.3), *Dermanyssusgallinae* (%3.3), *Falculiferrostratus* (%31.6), *Menopongallinae* (%6.6), *Goniodes sp.* (%53.3), *Menacanthusstramineus*(%41.6), *Megniniacubitalis* (%13.3).

Conclusion: Our finding showed that incidence rate of ectoparasites infection in *Columba livia*was high. It advises more studies in this background.

Key words: Ectoparasites infection, Lahijan, *Columba livia*

Comparative survey of inactive and live (Avinew) vaccines in broiler chickens

Feizi A[1*], Siri MS[1]

1. Department of Clinical Science, Tabriz Branch, Islamic Azad University, Tabriz, Iran

Corresponding author's email:a_feizi@iaut.ac.ir

Objective: Newcastle disease isahighlycontagious and main diseaseofbirds thataffectsmany species ofdomestic and wildbirds. The aim of this study was to compare the antibody titers produced by Avinew live vaccines alone and in combination with inactivated vaccine in broiler chickens with HI test.

Materials &Methods: This study was conducted in a broiler farms that has two similar salons. In first group avinew vaccine, in second group inactivated and avinew vaccine was used and in control group that was include 30 chickens inactivated vaccine was used. Vaccine were administrated in drinking water on days 8, 22 and 36 in each of the salons and inactivated vaccine was used at day 8. On day 48, serum samples were collected from each group. For evaluation of antibody titers, HI methods was used. Theamountof feedconsumptionin each of thehalls, finalweight, FCRand Mortalityrateswere also noted.

Results & Conclusion: Our resultsindicated that there was significant differencebetween avinew and inactivated group and other two groups ($p<0.05$). Also it was demonstrated that the CV was lower in 2nd group (23.66%) but it was 30.61% and 31.69% in 1st and 3rd groups, respectively. Feed conversionratio, feedintake andfinalbody weight in 2ndgroupwasbetter thanthe other groups, although thisdifferencewas not statistically significant. The amount of mortality in 2ndgroup was lower than the other two groups.The results demonstrated thatthere was significant difference from the aspect of the antibody titersproduced by thelive + inactivated vaccine,thus inactivated vaccine administration to broiler chicken were recommended.

Keywords: Newcastle disease, Vaccination, Avinew vaccine, inactivated vaccine, live vaccine

Comparative survey of inactive and live (Clone) vaccines in broiler chickens

Feizi A[1*],Hasani M[1]
1. Department of Clinical Science, Tabriz Branch, Islamic Azad University, Tabriz, Iran
Corresponding author's email:a_feizi@iaut.ac.ir

Objective: Vaccination has an important role in prevention of Newcastle disease especially in broiler chickens. The aim of this study was to compare the antibody titers produced by Clonelive vaccines alone and in combination with inactivated vaccine in broiler chickens with HI test.
Materials &Methods: This study was conducted in a broiler farms that has two similar salons. In first group Clone vaccine, in second group inactivated and clone vaccine was used and in control group that included 30 chickens inactivated vaccine was used. Vaccine were administrated in drinking water on days 8, 22 and 36 in each of the salons and inactivated vaccine was used at day 8. On day 48, serum samples were collected from each group. For evaluation of antibody titers, HI methods was used. Theamountof feedconsumptionin each of thehalls, finalweight, FCRand Mortalityrateswere also noted.
Results & Conclusion: Our resultsindicated that there was significant differencebetween clone and inactivated group and other two groups ($p<0.05$). Also it was demonstrated that the CV was lower in 2nd group (21.61%) but it was 25.58% and 33.53% in 1st and 3rd groups, respectively. Feed conversionratio, feedintake andfinalbody weight in 2ndgroupwasbetter thanthe other groups, although thisdifferencewas not statistically significant. The amount of mortality in 2ndgroup was lower than the other two groups.The results demonstrated thatthere was significant difference from the aspect of the antibody titersproduced by thelive + inactivated vaccine,thus inactivated vaccine administration to broiler chicken were recommended.
Keywords: Newcastle disease, Vaccination, Clone vaccine, inactivated vaccine, live vaccine

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Comparative survey of inactive and live (La Sota) vaccines in broiler chickens

Feizi A[1*],RaahimiF[1]
1. Department of Clinical Science, Tabriz Branch, Islamic Azad University, Tabriz, Iran
Corresponding author's email:a_feizi@iaut.ac.ir

Objective: Prevention of Newcastle disease in broilers is very important and vaccination prevent from higher mortality and weight gain decrease. The aim of this study was to compare the antibody titers produced by La Sotalive vaccines alone and in combination with inactivated vaccine in broiler chickens with HI test.
Materials &Methods: This study was conducted in a broiler farms that has two similar salons. In first group La Sota vaccine, in second group inactivated and La Sota vaccine was used and in control group that included 30 chickens inactivated vaccine was used. Vaccine were administrated in drinking water on days 8, 22 and 36 in each of the salons and inactivated vaccine was used at day 8. On day 48, serum samples were collected from each group. For evaluation of antibody titers, HI methods was used. Theamountof feedconsumptionin each of thehalls, finalweight, FCRand Mortalityrateswere also noted.
Results & Conclusion: Our resultsindicated that there was significant differencebetween La Sota and inactivated group and other two groups ($p<0.05$). Also it was demonstrated that the CV was lower in 2nd group (24.74%) but it was 30.22% and 29.58% in 1st and 3rd groups, respectively. Feed conversionratio, feedintake andfinalbody weight in 2ndgroupwasbetter thanthe other groups, although thisdifferencewas not statistically significant. The amount of mortality in 2ndgroup was lower than the other two groups.The results demonstrated thatthere was significant difference from the aspect of the antibody titersproduced by thelive + inactivated vaccine,thus inactivated vaccine administration to broiler chicken were recommended.
Keywords: Newcastle disease, Vaccination, La Sota vaccine, inactivated vaccine, live vaccine

Isolation Of Mycoplasma fromInfection of the quail lungs rearing in Kerman Province,Iran

Babak kheirkhah[1*] Reza Ahmadi[2]

[1]Department of Microbiology , Faculty of science, Kerman Branch ,Islamic Azad University, Kerman, Iran[2]Department of PoultryDisease,Tehran Science and Research Branch, Islamic Azad University, Tehran, Iran

Corresponding author' s email:babakkheirkhah@yahoo.com

Objectives: Mycoplasma is among the main causes of disease in quails and in whole group of poultry. It can infect the respiratory system and cause sinusitis. This is one of the elements leading to economic loss due to its potential in causing respiratory diseases, movement malfunction, and a reduction in egg growth, and egg product which is created by various strains of pathogen. This paper aim was isolating of mycoplasma Spp. fromquails lungs and compare the two methods of polymerase chain reaction and culture in separating infection.

Materials & Methods: A total of 50 samples of quaillungs suspicious to have pneumonia in Kerman province, Iran were taken to a laboratoryin 2015. The lungs' secretions were firstly enriched in PPLO Broth environment. Then, they went under polymerase chain reaction to separate mycoplasma using a primer pair.

Results&Conclusion: Nine samples out of the 50 (18 %) were infected with mycoplasma. 5 samples (10 %) were infected with *Mycoplasmasynoviae*and 1 sample (2 %) had *Mycoplasma gallisepticum.*The results showed that mycoplasma in quails rearing is more than poultry and ostriches'.

Keywords: Quails, Lungs infection, *Mycoplasma synoviae*, *Mycoplasma gallisepticum*, Polymerase Chain Reaction.

Effect of *In Ovo*Injection of Vitamin C during Incubation on Hatchability

Ali Hashemian[1], Arian Pour Amin[1], Mohammad Naser Nazem[2*], Arian Pouramin

[1]Under graduate student, Veterinary Faculty of ShahidBahonar University, Kerman, Iran.

[2]Department of Basic Science, Veterinary Faculty of ShahidBahonar University, Kerman, Iran.*

nnazem@uk.ac.ir

Effect of *In Ovo*injection ofvitamin C during incubation on hatchability of chickens and ducks. Folia biologica (Kraków) **60**: 93-97.The aim of the investigation was to ascertain the influence of different doses of vitamin Cinjected at selected dates of incubation into the eggs of broiler breeders and Pekin ducks onhatchability. The injected vitamin C doses were administered into the air cell on the 13th, 15thand 17th days (3 and 6 mg . chickens) and on the 12th and 20th days (4 and 8 mg . ducks) ofincubation. In the case of chickens, no significant differences were recorded between thecontrol and experimental groups with regard to hatchability, although the highest value ofhatchability from fertilized eggs was determined in the group injected with 6 mg of vitamin Con the 15th day of incubation. On the other hand, in ducks, significant differences were foundbetween the control and experimental groups (4 mg of vitamin C administered on days 12 and20 and 8 mg of vitamin C injected on day 20 of incubation) regarding hatchability. The valueof this trait was higher in the group of eggs injected with ascorbic acid in comparison with theeggs which were not treated. On average, the difference amounted to 32.5 percentage points.Similarly, in the case of the number of dead embryos and unhatched chicks, better resultswere observed in the above-mentioned experimental groups. In summary, vitamin C injectedinto chicken eggs failed to influence hatchability. In the case of duck eggs, it wasdemonstrated that their injection on the 20th day of incubation with selected doses of vitaminC (4 and 8 mg/egg) improved hatchability by decreasing the proportions of dead andunhatched embryos.

Key words: Vitamin C, *in ovo*injection, hatchability, broiler breeders, Peking duck.

Molecular Characterization of Eimeria Species in East Azarbaijan Province Poultry Farms

Nasser Razmaraii* [1, 2, 3], **Ali Ameghi**[1], **Laya Froghy**[3, 4]

1. *Department of Molecular Cell biology, Razi Vaccine and Serum Research Institute, Marand, Iran*
2. *Drug Applied Research Center, Tabriz University of Medical Sciences Tabriz, Iran*
3. *Student research committee, Tabriz University of Medical Sciences, Tabriz, Iran,*
4. *Health center Marand, Iran*

***Corresponding author: nasserrazmaraii@gmail.com**

Background: Coccidiosis is a severe protozoan disease of poultry. The identification of Eimeria species is important to control as well as for epidemiology due to economiclosses. This study was aimed to molecular characterization of Eimeria species infection in east Azarbaijan province in chickens.

Methods: Eimeria species oocysts were sampled from suspected poultry farms. The DNA was extracted initially by freezing and thawing then the prepared samples was subjected to commercial DNA kits. The DNA products were analyzed through conventional polymerase chain reaction by using amplified region marker.

Results: The PCR results confirmed presence of 4 Eimeria species in the examined fecal samples of East Azarbaijan Province Chickens with their specific amplification sizes being E. acervulina, E. tenella, E. maxima,and E. necatrix.

Conclusion: results confirmedthat there areat leastfour types ofEimeria spp in this province.

Key words: Eimeria, acervulina, Tenella, Maxima, Necatrix, Poultry

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Betaine as an antioxidant agent in poultry nutrition

Masoud Alirezaei [1], Hasan Norouzian [2], Parisa Jarrah [3], Kobra Chehari [1]

1- Division of Biochemistry, School of Veterinary Medicine, Lorestan University, Khorramabad, Iran

2- Department of Clinical Sciences, School of Veterinary Medicine, Lorestan University, P. O. Box: 465, Khorramabad, Iran

3- Undergraduate Student of Veterinary Medicine, Lorestan University, Khorramabad, Iran

Antioxidant and methyl donor effects of betaine in experimental animal models have recently been demonstrated. The present study was therefore designed to examine the antioxidant effects of betaine on the antioxidant status and meat quality of breast muscles in broilers. Cobb broilers were randomly divided into Control, Methionine low, Methionine low plus betaine, and Betaine groups .The activity of the main antioxidant enzyme (glutathione peroxidase) in the Betaine and the Methionine low plus betaine groups significantly increased compared to the Methionine low and Control groups. Catalase and superoxide dismutase activities were significantly higher in the Betaine group compared to the Methionine low group, and lipid peroxidation was significantly higher in the Control and the Methionine low groups. The present study indicates that adding betaine (1 g/kg) to a diet deficient in methionine can significantly improve antioxidant defenses and meat quality, decreasing lipid peroxidation in the breast muscles of broiler chickens.

Key words: Betaine, nutrition, antioxidant enzyme, broiler.

Evaluation of immune responses of commercial poultry vaccinated with Razi Newcastle disease vaccines against recent isolate

Ebrahimi MM*, Shahsavandi S,Shoushtari A,Ebrahimi SR, Masoudi S
Razi Vaccine and Serum Research Institute, Karaj, P.O.Box:31975-148, Iran
Corresponding author's e mail:mm.ebrahimi@rvsri.ac.ir

Objectives: Newcastle disease (ND) is a widespread highly contagious disease in many species of domesticand wild birds which causes severe economic losses in poultry industry. The disease resulting from an ND virus (NDV) infection of birds varies from mild to severe with high mortality depending on virulence of the infecting strain and host susceptibility. In recent yearsthe importance of thisdisease has been moreattention due to increasinglayingpoultry industry and alwaysbeenthe most important factorthreateningthe chickens. Vaccination for ND is routinely practiced in many countries but despite intensive vaccination mortality and/or drop in production have been reported in broiler and layer flocks.In this study the immune responses of commercial poultry vaccinated with Razi Newcastle disease vaccines against recent isolate was examined.
Materials and Methods: Brain of the affected chickens with neurological symptoms was collected aseptically. The specimens were homogenized and inoculated into the allontoic cavity of embryonated specific-pathogen-free (SPF) eggs. Serological, molecular, and pathogenicity indices assays were done to diagnose and identify the virus. Groups of Ross-308 and BOVANS which administrated by Razi ND vaccines (oil emulsion, B1 and LaSota) were selected. Proper control groups were included in each trial. The Ross-308 chickens were challenged with the velogenic isolated virus at 4 weeks of age via the intra muscular route, and the BOVANS at 18 weeks of age at the same manner. The birds were observed up to three weeks post challenge.
Results and conclusion: Primary examinations confirmed the isolation of velogenic ND viruses from clinical specimens. An isolate with higher pathogenicity was candidate as challenge strain. Both vaccinated layer and broiler were fully protected from ND, while the control birds died following challenge. This study revealed the protective efficacy of Razi ND live vaccines in the face of an outbreak. The morbidity and mortality of ND should highly decrease if the vaccination done at time and in a proper manner.
Keywords: Newcastle disease vaccine, protection, layer, broiler

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A Haemoproteusinfection in a Common Kestrel (*Falco tinnunculus*) – First report in Iran

Taherian, M[1]*, NikousefatZ[2], Chahardoli, A[1], Olfati S[2]
Faculty of Veterinary Medicine, Razi University, Kermanshah, Iran
Department of Clinical Sciences, Faculty of Veterinary Medicine, Razi University, Kermanshah, Iran
Corresponding author's email: mostafataheryan@yahoo.com

Objectives: The Common Kestrel (*Falco tinnunculus*) is a bird belongedto the kestrel group of the falcon family Falconidae. The birdis a common autumnmigrant in Iran and consideredan under protected species.Based on the host specific species and fine details of the gametocytes, the genus and species of the parasite can be often determined by experts. The aim of this articleis to report the first hemoproteus infection in a common kestrel in Iran.
Materials & Methods: In November, 2015, a Common kestrel with a history of anorexia, diarrhea and lameness presented to the Veterinary Clinic of Razi University. Physical examinations revealed depression, lethargy, severe lameness, emaciation andruffled feathers. No external parasites were found.As a part of our routine examination procedure, blood specimen collected from basilica (wing) vein and a smear was prepared and stained with Gimsa.
Results & Conclusion: In light microscopic evaluation of peripheral blood smears (x100 magnification), dumbly-shape microgamets and macrogamets, marginated nucleus and pigments were detected in red blood cells.Most species of Haemoproteus are relatively host-specific and restricted to closely related species. Light microscoping findings and this particular host are strongly suggestive of haemoproteusspp infections.Due to unspecific clinical manifestation of Haemoproteus infection in Common kestrel, we suggest that evaluation of peripheral blood smear should be considered in these situations.
Keywords: Haemoproteus**,** *Falco tinnunculus*,Common Kestrel, Iran, Blood Smear

Evaluation of a liquid prebiotic in feed and water of heat stressed broilers

SeifiS[1], KhoshbakhtR[1], SayrafiR[1], Gilani A[1*]
[1]*Faculty of Veterinary Medicine, Amol University of Special Modern Technologies, Amol, Iran*
[*]**Corresponding author's e-mail:gilanipoultry@gmail.com**

Objectives: It has been reported that antibiotic replacers are more fruitful under suboptimal conditions such as stress. Therefore, a trial was conducted to assess an enzymatically hydrolyzed yeast as a liquid prebiotic under heat stressed broilers fed high inclusion rate of rice bran.
Materials & Methods: A total number of 192 day-old male chicks (Ross 308) were weighed (Mean = 46 g) and randomly divided into 4 treatments. Each treatment consists of 48 birds and 4 replicates (pens) of 12 birds each. The first treatment (positive control) contained standard recommended diets with no added prebiotic. The second treatment (negative control) was a diluted diet (90% of recommended nutrient levels) including rice bran without prebiotic. The third treatment was the basal diet of the second diet plus a liquid prebiotic to the diet (1 gram per kg, wt/wt). Celmanax® is an enzymatically hydrolyzed yeast plus yeast culture and yeast extract that is produced by Arm & Hammer Animal Nutrition, Iowa, USA. Also, Celmanax liquid® was added to the drinking water (0.5 milliliter per liter, vol/vol) of broilers fed diluted diet as the fourth treatment. Ambient temperature at least for 8 hours during a day was more than 30 °C from day 20 to the end of trial in July 2015.
Results & conclusion: Dilution of diet significantly reduced weight gain. However, body weight gain of broilers receiving the liquid yeast product in feed was significantly improved as compared to negative control treatment in starter phase. Feed intake in positive control during finisher phase was significantly more than all other treatments.Addition of yeast product did not significantly change the feed intake of birds during grower and finisher phases. The feed conversion ratio (FCR) of chickens fed positive control and yeast product in feed was significantly better than negative control and yeast product in water during starter phase. The FCR was not influenced by experimental treatments during grower and finisher phases. In conclusion, addition of this yeast product had positiveimpacts on productive traits of heat stressed broilers.
Keywords: Celmanax®, Heat stress, Growth, Ross broilers

Serotyping of salmonellae isolates from packaged broilers sold in chain stores of Tehran

A.R. Mohammadi*, S. Dordari
Tehran Agricultural Research Centre, Iran;
***Corresponding author's email: ar.mohammadi@areo.ir**

Bacteriological examination was curried out on 600 broiler samples from packaged chicks sold in chain stores of Tehran. During 2 successive years. Serotype of salmonellae isolated from these broilers were carried out. Eighteen salmonella samples were isolated from the packaged chickens by using standard methods. Eighteen salmonellae were serogrouped and serotyped with specific antisera. Salmonella serotypes isolated from chickens were: tompson (1.67%), typhimurium (1%), eastborne (0.17%) and muenchen (0.17%).

As the results shows the process of packaging and flaying of broilers and washing it decreasses the contamination of salmonella on the broiler meat. Because of the increased acqaired resistance against the regular antibiotics medication alone is not enough to control the salmonella infections in poultry and even can causes problems in public health.

Key words: Salmonella, Broiler, Packaged, Isolation, Serotyping.

Evaluation of Green Muscle Disease in broilers, northern Iran

Seifi, S[1*], Khaledian, S[2]

*[1]Faculty of Veterinary Medicine, Amol University of Special Modern Technologies, Amol, Iran; [2]*Graduated *in Meat Inspection and Hygiene,Faculty of Veterinary Medicine, Amol University of Special Modern Technologies, Amol, Iran*

Objectives: Green Muscle Disease (Deep Pectoral Myopathy, DPM) is a degenerative disease of the minor pectoral muscles (i.e. the tenders), which is characterized by atrophy and necrosis. The lesions often affect both tenders and vary in color, from haemorrhages to green discoloration. However, these symptoms are rarely detectable until the affected muscles are dissected. DPM was first described in mature breeder turkeys and broiler breeders but is being seen more in meat-type chickens, especially those selected for breast muscle development. The purpose of the study was to investigate the prevalence of DPM in poultry slaughterhouses in Mazandaran province, northern Iran.

Materials & Methods:In a 3 months period, chicken breast samples were collected from 200 broilers (from 20 flocks) on the slaughter line of 4 abattoirs. The samples were taken from broiler strains including: Ross, Cobb, Arbor Acres and Arian, but Ross was the dominant strain.

Results & conclusion: Overall incidence of DPM was 4.3 % and did not vary among the four strain-crosses. Malesshowed higher incidence than females.

Keywords:DPM, Broilers, Muscles, Iran

Antimicrobial Susceptibility Pattern of Escherichia Coli Isolates to Antibacterial Agents in Urmia, Iran

Mohammad Sadegh Madadi1, Abolfazl Ghaniei2*, Peyman Zare3, Nima Isakakroudi2

1Department of Clinical Science, Faculty of Veterinary Medicine, University of Tabriz, Iran

2Department of Clinical Science, Faculty of Veterinary Medicine, University of Urmia, Iran

3Department of Pathobiology, Faculty of Veterinary Medicine, University of Tabriz, Iran

***Corresponding Author Email: a.ghanieizarch@urmia.ac.ir**

Colibacillosis is an importantbacterial disease of poultry with huge financial losses. Due to the importance of bacterial resistance, this study has been undertaken to determine antimicrobial sensitivity of E.coli isolates in Urmia. During 2006-2011, antimicrobial susceptibility tests of 1100 E.coli isolates from Urmia broiler farms were collected and resistant patterns were analyzed.

The antibiotics include ampicillin, enrofloxacin, colistin, sulfamethoxazole+trimethoprim (co-trimoxazole®), erythromycin, flumequine, florfenicol, lincomycin+spectinomycin (linco-spectin®), neomycin, oxytetracycline, sulfadiazine+trimethoprim (sultrim®), tiamulin, tylosinandtetracycline. The findings of this study show alteration in susceptibility pattern during 6 years. For the first three years, most of the isolates were resistant to tylosin 2006(99.6%), 2007(99.6%) and 2008(98.75%) and most of them were sensitive to florfenicol 2006(86.4%), 2007 (62.8%) and 2008 (62.08%). From 2009 to 2011 different results were recorded. The highest rate of résistance observed to tetracycline (100%), erythromycin (97.83%) and tetracycline (100%), respectively while lincomycin+spectinomycin was more sensitive agent than the others 2009(77.91%), 2010(76.75%) and 2011(75.83%). More comprehensive study should be carried out as a national plan comparing antibacterial sensitivity test of all provinces in order to find out an overview of antimicrobial susceptibility pattern in the country.

Keywords: Escherichia coli, Antibiogram, Urmia.

Study of the effects of adding 1% Inulin prebiotic in feed on quail intestinal microflora and some growth parameters

Hadi Shabani[1]*, Masood Khakzadihe[2],Reza Vaezi Astamal[2],Adel Feizi[3],,Navid Razmian[1],

1.College of Veterinary Medicine ,Tabriz Branch, Islamic Azad University, Tabriz, Iran

2.Young Researchers And Elite club, Tabriz Branch Islamic Azad University, Tabriz, Iran

3.Department of Clinical Sciences,College of Veterinary Medicine, Tabriz Branch, Islamic Azad University, Tabriz, Iran

Corresponding author's email:**hadishabani@doctor.com**

This study was conducted to evaluate the effectiveness of adding Inulin fructans in feed on quail intestinal microflora and some growth parameters. Adding 1% inulin to the diet of quails showed no significant differences on growth parameters including: body, liver, kidneys, heart, and gizzard weights'. But there were significant differences on intestinal microflora of control and adding dietary 1% Inulin(as prebiotic) groups.

Objectives: The effectiveness of adding Inulin fructans in feed on quail intestinal microflora and some growth parameters.

Key words: Inulin, Quail, Intestinal microflora, Growth parameters

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A comparison between 4 and 8 agglutinin units in HI NDV test and relation between ELISA and HI test

Kiani MH[1*],Pouri M[2],Charkhkar S[2]Bozorgmehri fard MH[2],Nazemi Sh[2]

[1]Young researchers and Elites club,Science and Research Branch, Islamic Azad University, Tehran, Iran;
[2]Faculty of Specialized Veterinary Medicine,Science and Research Branch, Islamic Azad University, Tehran, Iran
Corresponding author's email: hadi_kiani_vet@yahoo.com

Objective: The global importance of Newcastle disease is very broad with respect to economic damages. Due to extraordinary importance of Newcastle disease, it is necessary to prevent from its outbreak in farms. Suitable performance of immune system for prevention of this disease is very important. Under condition that flocks are very vulnerable against quick outbreak of infectious diseases, protection of birds against this disease plays key role; therefore, there is direct relationship between stimulation for response of antibody and protection against this disease. Whereas the antibody obtained by HI test after vaccination plays key role on importance of immune system. In some laboratories in order to perform this test 8 and sometimes 4 agglutinin units of were used

Materials &Methods: In this study, it is attempted to find out the difference between these 2 tests. In order to carry out this research, 56 blood samples of Broiler flocks and 336 blood samples of Broiler parent flocks and 602 blood samples of layer were collected and these samples were tested from viewpoint of level of agglutinin under similar conditions and the following results were obtained. The Broiler flocks 1 due to young age was not regarded in this study. The Broiler flocks No.2 was gone under statistical comparison and there was no significant difference for using 4 or 7 units' agglutinin. Results of testing blood samples taken from adult Broiler chickens in statistical test by using T-student method showed significant difference between using 4 and 8 units of agglutinin.

Results & Conclusion: Results of taking blood sample from 9 egg laying chickens with the same statistical method showed significant difference for applying 4 and 8 units of agglutinin. In order to observe the relation between the HI test with 8 units of agglutinin and ELISA test, from 90 blood samples of egg laying chickens showed that there is relation as already mentioned in the text.

Keywords: Newcastle Disease, HI, ELISA, Broiler flocks, Broiler parent flocks, Layer

To evaluate the effect of thyme alcoholic extract on Bacillus subtilis with MIC and MBC methods

Taha bagheri*[1], Masood khakzadihe[1], Hadi eslami[1],Adel feizi[2]
1.Young Researchs and Elite club,Tabriz branch,Islamic Azad University,Tabriz,Iran
2.Department of clinical sciences,Tabriz branch,Islamic Azad University,Tabriz,Iran
Corresponding author's email: tahabagheri@dr.com

Thyme has been used as a spice in foods for many years in Iran. Several studies have been done on the antimicrobial and antioxidant properties of extracts of this plant . The extract of this plant is used in the poultry industry. This study aimed to investigate the effect of the plant with the scientific name zataria multiflora on standard Bacillus subtilis. Alcoholic extract was product of SOHAcompany. To search for MIC and MBC, inside the Mueller Hinton Broth was added$5 * 10^5$active bacteria per ml of the culture liquid. The tubes were incubated for 48 hours at 37 ° C. In the MIC test, growth of bacteria in dilutions was more than 1.56% , and 1.56% was recorded in the MBC test. These findings demonstrate the powerful effect of the extract on bacteria Bacillus subtilis and consequently it is similar to other similar bacterias.
Keywords: Extracts of thyme , MIC, MBC, Bacillus subtilis

Cholesterol resorption from yolk residuals and physiological adaptive indicators in broiler chicks exposed to neonatal fasting in response to in yolk sac administration of carvacrol

Beiranvand[1], M.H., Khosravinia[1*], H., Azarfar[1], A. and Rafiei Alavai[2], E.
[1]Department of Animal Science, Faculty of Agriculture, Lorestan University, Khoramabad-68137-17133, P.B. 465, Lorestan, Iran. [2] Lorestan University of Medical Sciences, Department of Pathology, Faculty of Medicine, Khorramabad 68138-33946, Iran

Three hundred and twenty Ross 308 male broiler chicks were used to examine the effects of in yolk sac (IYS) administration of carvacrol on cholesterol resorption from yolk residuals and physiological adaptive responses in broiler chicks subjected to fasting during neonatal periods up to 72 h post hatch. The effects of the four experimental treatments consisting nonhandled control (NHCON), sham injection control (SICON), polysorbate-80 injection (POLS) and carvacrol injection (CARV) were examined in 5 replications of 10 birds each. Liver proportional weight was greater in carvacrol-injected chicks compared with other birds at 24h post hatch ($P<0.05$). The mean blood glucose concentration was 199.00 mg / dl when chicks removed from the hatcher baskets and decreased in all birds by extension of the fasting period up to 72 h post hatch. However, the decreased rate in carvacrol-injected bird was lower and they had greater plasma glucose level than NHCON and SICON birds at 72 h post hatch. No difference was observed in plasma cholesterol concentration between the birds at hatch and 24, 48 and 72 post hatch but lower plasma cholesterol level was noted in carvacrol-treated chicks compared with the birds subjected to the other treatments at 72 h post hatch ($P<0.05$). Blood Ca concentration was greater in carvacrol injected birds at 24 h post hatch compared with NHCON and SICON chicks but at 72 h it significantly increased in all birds with the exception of carvacrol-treated chicks which showed a significant lower Ca concentration of 11.17 mg/ dl ($P<0.05$). Blood K concentration increased in polysorbate-80 and carvacrol injected chicks at 24 h post hatch compared with the NHCON and SICON birds ($P<0.05$). In conclusion, the results of the current study revealed that there is no direst interaction between cholesterol and carvacrol leading to reduced cholesterol absorption in yolk sac of broiler chicks.
Key words: Cholesterol resorption, yolk residuals, in yolk sac injection, broiler chicks carvacrol, neonatal fasting

Comparison of Histological Lesions of Bursa of Fabricius after Challenge in Vaccinated and Nonvaccinated SPFchickens

Z.Mojahedi[1], Ali Anisiyan[2], M.Abdoshah[1],Seyed Reza Ebrahimi[1]
RAZI VACCINE AND SERUM RESERCH INSTITUTE[1], ABHAR UNIVERSITY[2]

Low pathogenic avian influenza (H9N2) is of major concern for the poultry industry especially in Iran, as the virus can spread rapidly in and between flocks, causing severe economic losses.

The aim of this study was to determine the pathogenicity of H9N2 avian influenza virus in bursa of Fabricius after experimental challenge in SPF chickens , so we studied the histologic lesions of this isolate in these organs following intranasal (IN) inoculation.

Ten 3-week-old chickens were inoculated with H9N2 vaccine and ten chickens with the same age were considered as a control group then after 3 weeks 10 chickens were inoculated with 10^6 EID50 per bird of H9N2 avian influenza virus.
Then on 10 days post-inoculation (PI), samples of the bursa of Fabricius were collected for histopathological studies. In inoculated chickens, lymphocyte depletion, follicular atrophy in the bursa of Fabricius was seen. The results indicated that the H9N2 influenza virus has some immunosuppressive effects on chicken lymphoid organs and inoculated H9N2 vaccine can decrease shedding of virus.
Key words: H9N2 influenza, histopathology, bursa of Fabricius, SPF chickens

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Gastrointestinal Contrast Study in Common Myna (*Acridotherestristis*) withIodixanol, Iohexoland Barium Sulfate

JahangiriSh[1], RahimzadehR[2]*
1.DVM Student,Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanadaj.
2.Department of Clinical Siences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University,Sanadaj, Iran
***Corresponding author's email: drrahimzadeh@iausdj.ac.ir**

Objectives: Disease of alimentary tract occur frequently in birds. Contrast studies of the upper and lower gastrointestinal(GI) tract are often indicated based on suspicion of space-occupying masses, ulceration, abnormalities in size or shape of coelomic organs, GI foreign bodies, alterations in GI motility or body wall abnormalities.Iohexol and Iodixanol that are nonionic, iodinated contrast medium,were evaluated as an alternative to barium sulfate suspension for radiographic studies of the avian gastrointestinal tract.
Materials & Methods: Iohexol and Iodixanol, prepared undiluted or diluted with tap water 1:1 or 1:2, was given by gavage tube to 12 unanesthetizedCommon Myna,. The volume of iohexol,Iodixanolor barium administered was based on each bird's estimated gizzard volume; the dose was determined retrospectively as 22 ml/kg. After the contrast media was administered, ventrodorsal and lateral radiographic views were taken immediately, at 1,5,15,30,60,75,90 minutes, and then at half hourly intervals until the contrast medium throw over GI. The adopted technique was 55kVp x 0.25mAs and a 75cm focus-film clearance with mammography cassettes and film offer an excellent combination for high-detail radiographs.
Results & Conclusion: When compared with barium sulfate studies, radiographs of birds given IohexolorIodixanol(22 ml/kg), either undiluted or diluted 1:1, were of equal quality to those of birds given barium, in terms of opacification of the gastrointestinal tract lumen and the ability to evaluate all portions adequately. The use of iohexolc results in significantly decreased GI transit time. The crop-to-cloaca transit time of barium is approximately 3 hours, compared to approximately 1 hour with iohexol orIodixanol.An advantage of Iohexol or Iodixanol was its rapid transit time when compared with barium. Dilution of Iohexol and Iodixanol at ratios greater than 1:1 is not recommended, as it resulted in poor opacification of gastrointestinal structures.If perforation is suspected or possible, iodinated contrast should be used.
Keywords: Common Myna, Gastrointestinal,Iodixanol, Iohexol ,Barium Sulfate.

Master Seed Preparation for Heat Resistant Vaccine Production Against Newcastle Disease

Abdoshah, M .[1] , Masoudi S.h.[1], Hassanzadeh, M.[2] , Ashtari, A.[1] , Tehrani, F.[3] , Famil Ghadakchi, H.[1]
1)Razi Vaccine and Serum Research Institute2) Faculty of Veterinary Medicine, University of Tehran
3)Iranian Veterinary Organization
Corresponding author's email: m.abdoshah@rvsri.ac.ir

Introduction: The objective of vaccination is reducing the number of susceptible birds against the Newcastle disease (ND).
Many Newcastle disease vaccines deteriorate after storage for one or two hours at room temperature. This makes them unsuitable for use, especially in villages where the vaccine may need to be transported for hours or in some cases days at ambient temperature. A heat resistant Newcastle disease strain is more robust and is known as a thermostable vaccine. Such a vaccine strain, is suitable not only for use in rural Chickens in tropical areas, but also to provide sufficient time for the vaccination of poultry by drinking water method.
Materials and Method: The virus identified as Avian Paramyxovirus serotype 1 (APMV-1) by molecular tests. It is proved avirulent through in vitro and in vivo conventional experiments. The stability of virus tested to ensure that is resistant to heat. Then quality control tests for master seed was achieved included safety, potency, stability, sterility (freedom from bacteria, fungi, mycoplasmas) and purity (absence of extraneous agents) tests based on pharmacopoeia.
Results: The results of pathogenicity tests and determination of pathogenicity indices (MDT, ICPI, IVPI) showed that studied virus is in the range of avirulent NDVs. Molecular tests and sequencing of F gen, confirmed the conventional tests and indicated similarity between studied virus and heat-stable vaccinal strains. Eventually the master seed passed quality control tests successfully.
Discussion: The avirulent, thermostable ND vaccine strains were developed by researchers at the University of Queensland in Australia (Spradbrow 1999) to provide rural poultry farmers with an effective, affordable means of controlling ND in their flocks. These vaccines have been used successfully in village chicken populations in many countries in Asia and Africa. The results obtained in this study show that our vaccine has potent to use successfully via different routes in chickens. It reduces the costs for backyard poultry in our villages especially that has also capacity for feed administration.
Key words: Newcastle Disease, Thermostable, Vaccine

Investigation of continues and pulse administration of Doxycycline in treatment of colibacillosis

Feizi A[1*],AhmadzadehL[1]
1. Department of Clinical Science, Tabriz Branch, Islamic Azad University, Tabriz, Iran
Corresponding author's email:a_feizi@iaut.ac.ir

Objective:*E. coli* is one of the most common causes of infection by gram negative bacteria. Antimicrobial agents are used extremely in order to reduce the great losses caused by Escherichia coli infections in poultryindustry. The aim of this study was to compare the pulse and continuous administration of doxycycline on clinical signs and lesions of colibacillosis and some biochemical indices.
Materials &Methods: This study was conducted in a broiler farms that has two similar salons and was infected with colibacillosis. In first group doxycycline was used by continues method for 4 days and in 2nd group it was used by pulse administration daily 8 hours for 4 days period. After treatment 20 blood samples were taken from each group and biochemical indices include ALT, AST, protein, ALP and creatinine was evaluated. Also white blood cells diff was evaluated and recorded. Gross lesions and mortality rate was recorded in each groups and was compared. For comparison data independent t-test and SPSS statistical software version 22.0 was used.
Results & Conclusion: Our resultsindicated that there was significant differencebetween two methods in case of AST, and it was decreased in pulse group to 141.0±5.04 in comparison to continues group 172.22±4.00 ($p<0.05$), although ALT, ALP and creatinine was lower in continues group but it was not significant ($p>0.05$). Our results demonstrated that WBC and lymphocytes were decreased in continues group, but Hematocrit, heterophils, monocyte and eosinophil was increased in continues group. The results of the current study indicated that pulse administration of doxycycline has better results in treatment of colibacillosis and this method was lower the costs of antibiotic usage in poultry production. Thus pulse administration recommended for treatment of colibacillosis.
Keywords: Colibacillosis disease, pulse administration, continues administration, biochemical indices

A case report of avian leukosis/sarcoma in abackyard chicken flock in Shahrekord city with higher mortality rates

ZamaniMoghaddam AK[1],Karimi I[2],BabaahmadiMilani M[3], MehraeiHamzekolaei MH[3], MadresehGhahfarokhi S[5], KhosraviAlekoohi Z[6*], AhmadiN[7]

[1]Department of Clinical Sciences,[2]Department of Pathobiology, [3,4]Resident of poultry diseases, [5]DVM student,Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran;[6]Doctor of Veterinary Medicine, Shahrekord, Iran;[7]Pathobiology lab, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran

Corresponding Author's Email:Zkhosravi97@yahoo.com

Objectives: Neoplastic diseases of poultry divides into two wide classes, firstly those with an infectious etiology and also those which are non-infectious. Viruses that cause infectious neoplasmsare widely prevalent in commercial poultry stocks which might be enzootic orepizootic. Certain members of the leukosis/sarcoma group cause Lymphoid leucosis which has been considered as the most prevalent form of L/S group in poultry population.Isolates that can induce lymphoid leukosis in chickens are commonly called avian leukosis viruses and are divided into subgroups A, B, C, D, E and J, on the basis of differences in their viral envelope glycoproteins.Morbidity of the diseaseis very low and mortality rate is commonly around 1–2% of birds.This article reports theoccurrence of avian leucosis/lymphoma in one backyard chicken flock in Shahrekord with the mortality rate of about 2-4 percent of the flock.

Materials & Methods: One 180-day-old backyard chicken flock which consisted of 100 native chickens was referred to poultry department at veterinary polyclinic of Shahrekord University. Preliminary investigation of the flock revealed that about 20 percent of the flock had signs ofcachexia, anemia, anorexia, lethargy and pale mucosa with 3 percent mortality. In autopsy,lots of white-grey nodules were present in liver and lumen of different parts of small intestine.Biopsies were done carefully and samples were sent to pathology department.After preparing and staining theslides, observation of pathologic changes was done using optic microscope.

Results & Conclusion: Abundant infiltration of uniformed lymphocytes with similar sizes and light nucleus were obvious in parenchyma of liver and also in lamina propria layer of mucosa of small intestine. These pathologic results proved the occurrence of avian leukosis/lymphoma in the flock. This essay shows that avian leucosis/lymphoma infection is present in backyard poultry flocks of Shahrekord city with the mortality range of 3 or more percent of the native chickens and is important in old backyard poultry.

Keywords: Avian Leukosis, Backyard chicken flock, Shahrekord

Histopathological evaluation ofNewcastle and Influenza (H9N2) bivalent killed vaccines in broiler chickens.

Hamiyan F^{1},Allymehr M^{2*},Hobbenaghi R^{3}

[1]Department of poultry science, Tehran Science & Research branch Student, Islamic Azad University, [2]Department of Avian Diseases, Faculty of Veterinary Medicine, University of Urmia,[3]Deparment of Pathology ,Faculty of Veterinary Medicine, University of Urmia

Objective: The aim of the present study was to evaluate histopathological features of Newcastle and Influenza (H9N2) bivalent killed vaccines in broilers.

Material & method: One hundredRoss 308 chickens were included in this study. The birds were randomized into for groups of 25 birds each on 7days. Group 1 was served as control group. Group 2 received a single dose of Newcastle and Influenza (H9N2) killed vaccine of Razi Institute. Group 3 received a single dose of Newcastle and Influenza (H9N2) vaccineNewpassol102, of Pasukcompanyand group 4 received a single dose of Newcastle and Influenza (H9N2) vaccine Galliimune 208 (Merial Co.). The vaccine administration was performed intramuscularly and on day 10, 14, 21, and 28 three birds from each group was euthanized and samples were taken for microscopic studies. The samples were assessed for open lymphatic vessels, heterophiles, lymphocytes and fibroblasts.

Result & conclusion: On day 10 the highest value for open lymphatic vessels was recorded for group 4 (49.6cells per area unit) and the least value for group 3 (38.6). On day 28 the highest value for open lymphatic vessels was recorded for group 2 (35.3) and the least value for group 3 (16.3). On day 10 the highest value for lymphocyte was recorded for group 3 (56.3cells per area unit) and the least value for group 2(22.6). At the end of the week 4 the highest value for lymphocyte was recorded for group 4 (24.0) and the least value for group 3 (15).On day 10the highest value for heterophile was recorded for group 3 (2.66 cells per area unit) and the least value for groups2 and 3 (2).At the end of the week 4 the highest value for lymphocytewas recorded for group 2 (0.6) and the least value for group 4(0.3). On day 10the value forfibroblast was recorded for group 2 (2.30cells per area unit) and the value for group 4 (20.6).At the end of the week 4 the highest value for lymphocyte was recorded for group 2 (10.6 and the least value for group 3(4.6).The findings of the present study showed that using New passol 102 Pasuk vaccinethe least inflammation was occurred in injection site compared to other groups. The consequences of the inflammation were also very scanty and subsidence of the scar was accelerated. The granulation tissue was contracted earlier than other groups. It could be concluded that New passol 102 Pasuk vaccinepresented desired results in comparison with other ones.

Key words: killedvaccine, Influenza(H9N2),Newcastle, open lymphatic vessels, heterophiles, lymphocytes , fibroblasts.

urgery treatment of crop burn in an African grey parrot

Siyavash Jahany[1], Danial Rezaiemoghadam[2*],MehrdadAhmadi Khalili[2],Mohamadreza Hadadmarandi[3]

1. *Resident of Veterinary Surgery, Faculty of Veterinary Medicine, ShahidChamran University,Ahvaz, Iran*
2. *Doctor of Veterinary Medicine, Exir Pet Clinic, Tehran, Iran*
3. *Resident of Poultry Diseases, Faculty of Veterinary Medicine, Shiraz University, Iran*

Corresponding author's email: denial_rezaie1926@yahoo.com

Cropis a part of the body to store food. Due to its thin walls compare to other organs it is more susceptible to trauma. Crop fistula could be resulted of improper hand-feeding, animal bites, foreign body ingestion, injuries and etc. Crop burns usually caused by thermal injuries, which is more common in neonates being hand-fed.It could also occur by using a hair dryer to dry a wet bird. However, most often happened by eating microwave over warmed food.An African gray parrot referred to a specialty small animal surgery center in Tehran with a 1cm^{2}crop fistula due to acute crop burn.After physical examination the patient placed on nistatin and enrofloxacin. Small frequent meals used to minimize the stretching force placed on the crop.After 5 days the serosa of theingluvies and the skin have healed together as one tissue.Under general anesthesia these tissues separated by blunt dissection and sutured in two layers.The crop sutured with an inverting suture pattern and the skin closed with a simple interrupted pattern.Antifungal and antibiotic medication continued for 5 days after surgery. After one month follow up the suture line healed and there were no drainage anymore.Crop tissue is so sensitive to heat and feeding formula over 43.3 □C and less commonly contact with a heat source could result in crop burn.Hence, it suggest to pay double attention to young birds feeding and put the warm food at room temperature at least half an hour before feeding.

Keywords: African grey parrot, Crop burn, Crop fistula, Surgery

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Evaluation of microbial contamination rate of the hatching egg shell andegg-in-touch points in a broiler breeder house

HamiyanF[1],AslnajjariA[2],Chakhkar S[3],Kalidari Gh[4],Sadeghi B[5],Akbarabadi M[6]

[1]*Department of poultry science, Tehran Science & Research branch Student, Islamic Azad University,*
[2]Shiraz University Student,[3]*Department of Avian Diseases, Faculty of Science & Research branch, Islamic Azad University, Tehran, Iran,*[4]*Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran.*

Objective: The aim of this study was evaluation of bacterial count of hatching egg shell as layed until delivering to setter, as well as bacterial and fungal contamination of straw bed, shoulder eggs, workers hands, cleaning brush and fans.

Material & method: Total bacterial count of egg shells carried out during four stages: freshly layed eggs, before fumigation and after that, and storage room before setting. The results of different sampling stages analyzed by non-parametric tests.

Result & conclusion: The results showed that the freshly layed eggs had the least contamination and at the second stage, before foaming, it increased to the highest level. There was a positive correlation between bacterial and fungal contamination of the straw bed. The total bacterial count of the workers hands were more than mean of the eggs, but in the case of shoulder eggs, cleaning brush and grading table it was less than the total bacterial count of eggs. Also, it has shown that the fungal contamination of straw beds existed before using in nests. In conclusion, the egg shells had the least contamination by themselves as they freshlylayed, but management failures cause the most contamination and disinfection such as fumigation returns the load of contamination to the first levels as they layed.

Key words:hatching egg shell, total bacterial count, fumigation, straw beds, shoulder eggs

Effect of growth temperature and biofilm age on the resistance of *Salmonella*Typhimurium biofilms to bacteriophage in chicken meat model

RebwarMohamadi, Hossein Tajik, MehranMoradi, HadiGhasemmahdi
Department of Food Hygiene and Quality Control, Faculty of Veterinary Medicine, Urmia University, 1177, Urmia, West Azarbaijan, Iran

This study was conducted to investigate the anti-biofilm effectof the*Salmonella*Typhimurium phage against a multidrug resistance (MDR) *Salmonella* formed in chicken meat model. The effects of different phage concentrations (10^4, 10^6 and 10^8 PFU/ml) with two contact times (10 and 20 min) on one and 7 days old biofilm adhered to stainless steel coupon in chicken broth at15, 8 and 4 °C were evaluated. The results showed that the bacteria had an ability to adhere to the coupons and form biofilm in chicken broth, the biofilm levels were significantly ($0/05 \geq P$) higher at 15 °C for 7 days. Increasing the phage concentrations, resulted in a significant anti-biofilm properties, but the activity was not influenced by the phage contact times. Phage at 10^8 PFU/ml concentration revealed the highest activity. The anti-biofilm activity was also influenced by the age of biofilm, in this case, one day-old biofilm was more sensitive than 7 days old. From the study it can be concluded, that in chicken model, the phage exhibited anti- biofilm activity on MDR *Salmonella* only at high concentrations, then the use of a combination of methods to control of biofilm is recommended.
Keywords:Bacteriophage, *Salmonella*Typhimurium, Biofilm, Chicken.

Farm-level risk factors for enrofloxacin resistance in *Escherichia coli* isolated from broiler chickens during a rearing period in Iran

Abdi-Hachesoo B.*, Asasi K., Sharifiyazdi H.
Department of Clinical Science, School of Veterinary Medicine, Shiraz University, Shiraz, Iran
***Corresponding author's E. mail: abdi@shirazu.ac.ir**

Objectives: In this study, prevalence of enrofloxacin and ciprofloxacin resistant *E. coli* isolates during a rearing period of broiler chickens and effects of some of the farm-level risk factors on the incidence of enrofloxacin resistance were evaluated.
Materials and Methods: For this purpose, three hundred cloacal *E. coli* isolates obtained in 20 farms were screened for enrofloxacin and ciprofloxacin resistance. Five *E. coli* isolates were recovered from the cloacal swabs of broiler chickens in the farms at the ages of one day (stage 1), 30 days (stage 2), and one day before slaughter (stage3). Minimum inhibitory concentration (MIC) was determined by broth macrodilution method according to CLSI guidelines using enrofloxacin and ciprofloxacin. Collected information during the sampling included some of the most probable antibiotic resistance risk factors, separately noted for any correspondent farm. Pearson correlation test was used to evaluate correlations between MIC values of enrofloxacin and ciprofloxacin. The Chi-square and Fisher's exact tests were applied to the test regarding to relationships between sensitivity or resistance to enrofloxacin and various risk factors with a significance level of $p<0.05$.
Results and conclusion: MIC results for enrofloxacin showed that the prevalence of resistance significantly increased ($P<0.05$) during the rearing period (43, 80 and 86 % respectively for stages 1, 2 and 3). These percentages for ciprofloxacin were 38%, 78% and 84%, respectively. There was a strong positive correlation ($p<0.001$, $R= 0.893$) between MIC values of enrofloxacin and ciprofloxacin among these isolates. Results showed that factors related to antimicrobial exposure such as antibiotic consumption in previous stocking, occurrence of colibacillosis and respiratory viral infections and antibiotic usage in recent stocking significantly increased the rate of enrofloxacin resistance in cloacal *E. coli* isolates ($P<0.05$). Probiotic in feed, feed type (pellet or mash) and water supply of the farms had not significant effects on enrofloxacin resistance rates of *E. coli* isolates. The results of this study showed that preventive use of antibiotics and antibiotic therapy after colibacillosis and respiratory viral infections could increase the rate of enrofloxacin and ciprofloxacin resistance in poultry farms. The indiscriminate use of antibiotics especially fluoroquinolone antibiotics family such as enrofloxacin should be avoided or minimized to reduce resistance to ciprofloxacin and other lifesaving antibiotics in poultry *E. coli* isolates.
Key words: *E. coli*, broilers, enrofloxacin resistance, ciprofloxacin resistance, risk factors

Multi-drug resistance in *E. coli* isolated from cloaca and pericardium in broiler chickens colibacillosis

Abdi-Hachesoo B*, Sharifiyazdi H, Asasi K
Department of Clinical Sciences, School of Veterinary Medicine, Shiraz University, Shiraz, Iran
***Corresponding author's E mail: abdi@shirazu.ac.ir**

Objectives: The aim of the present study was to evaluate the frequency of resistance to some of the common antimicrobial agents in intestinal and pericardial *E. coli* isolated from chickens suspected to colibacillosis.
Materials and Methods: In this study, 67 cloacal and 67 pericardial *E. coli* isolated from colibacillosis in broiler chickens were investigated for antimicrobial resistance profile via disk diffusion Method.The differences between susceptibility and resistance to different antibiotics between cloacal and pericardial isolates were analyzed by chi-square test (SPSS16). Different degrees of Multi-drug resistance, Multi-drug resistant (MDR), extensively drug resistant (XDR) and pandrug-resistant (PDR) evaluated in these *E. coli* isolates based on new criteria stablished by European Society of Clinical Microbiology and Infectious Diseases.
Results and conclusion: Very high levels of resistance to tetracycline, oxytetracycline, nalidixic acid, flumequine, enrofloxacin, ciprofloxacin, norfloxacin, neomycin, erythromycin, colistin and streptomycin were seen in both of the cloacal and pericardial *E. coli* isolates. Resistance to ampicillin, trimethoprim-sulfamethoxazole, chloramphenicol, florfenicol, furazolidone and lincospectin was medium to high. However, there were no significant differences between antimicrobial resistance of cloacal and pericardial isolates ($p>0.05$). Out of the cloacal isolates, 61 isolates (91 %) were found to be Multi-drug resistant (MDR), while 42 (62.7 %) and 2 isolates (3 %) were extensively drug resistant (XDR) and Pandrug resistant (PDR), respectively. MDR, XDR and PDR were seen in 56 (83.6 %), 43 (64.2 %) and 1 (1.5 %) of the pericardial isolates, respectively. These results showed that the majority of cloacal *E. coli* isolates were multi-drug resistant. These multi-drug resistant intestinal *E. coli* isolates may have large effects on the accumulation and potential spread of antimicrobial resistance genes in pathogenic microbial populations in poultry.
Keywords: Colibacillosis, multi-drug resistance, extensively drug resistance (XDR), pandrug resistance (PDR)

Orthopedic surgeryof radius and femur fracture and post operation nutritional management in European eagle owl (Bubo bubo): Case Report

Mohammad Bazaei[1*] SamaneKeshavarz[2] Vahid Pourjam[3] AlirezaMollaei
[1.2.4] department of veterinary medicine,beyzabranch,islamicazaduniversity,beyza,iran
[3] department clinical studies,Pars vet pet clinic ,Shiraz ,Iran

Case description: mature European eagleowl(Bubo Bubo) with 2kg weight
Clinical finding: Radiographs showed that left femur had fractured in shaft and there was bolt on left elbow.
Treatment & outcome: surgical treatment was operated by inducing anesthesiawith 10mg/kg of Ketamine as HCl and Diazepam. 5mg/kg. Femur was surgically reduced and fixed byIM pinandstainless still wire .bolt was removed and wing fixed with figure eight bandage pattern.
Clinical Relevance: Most of wild birds havecalcium deficiency and osteoporosis, they are often dehydrated .due to these issues we must manage these things before and after operation.
Key words:1. European eagle owl 2.femur fracture 3.redius fracture 4.calcium deficincy

Isolation Of Mycoplasma fromInfecting the quail' lungs rearing in Kerman Province,Iran

Babak kheirkhah[1*] Reza Ahmadi[2]

[1]Department of Microbiology, Faculty of science, Kerman Branch ,Islamic Azad University,Kerman,Iran[2]Department of PoultryDisease,Tehran Science and Research Branch, Islamic Azad University, Tehran, Iran

Corresponding author' s email:babakkheirkhah@yahoo.com

Objectives: Mycoplasma is one of the main causes of disease in quails and in whole group of poultry. It can infect the respiratory system and cause sinusitis. This is one of the elements leading to economic loss due to its potential in causing respiratory diseases, movement malfunction, and a reduction in egg growth, and egg product which is created by various strains of pathogen. This paper aims was isolating of mycoplasma Spp. fromquails' lungs and compare the two methods of polymerase chain reaction and culture by separating infection.

Materials & Methods: A total of 50 samples of quaillungs suspicious to pneumonia in Kerman province, Iran were taken to a laboratoryin 2015. The lungs' secretions were firstly enriched in PPLO Broth environment. Then, they went under polymerase chain reaction to separate mycoplasma using a primer pair.

Results&Conclusion: Nine samples out of the 50 (18 %) were infected with mycoplasma. 5 samples (10 %) were infected with *Mycoplasmasynoviae*and 1 sample (2 %) had *Mycoplasma gallisepticum.*The results incidence by the research showed that mycoplasma in quails rearing is more than poultry and ostriches'.

Keywords: Quails, Lungs infection, *Mycoplasma synoviae*, *Mycoplasma gallisepticum*, Polymerase Chain Reaction.

Detection of avian Reovirus in boiler flocks of Rodsar city

Ehsan Bagherpour[1] Hadi haghbin nazarpak[2] Hossein hosseini[3]

1- DVM, Faculty of Veterinary Medicine, University of garmsar,garmsar, Iran

2-Department of Clinical Sciences, Faculty of Veterinary Medicine,GarmsarBranch,Islamic Azad University,Garmsar,Iran

3- Department of Clinical Sciences, Faculty of Veterinary Medicine,KarajBranch,Islamic Azad University, Alborz,Iran

Corresponding Author Email : Ehsanbagheri48@yahoo.com

Reovirus in birds is of ortoreovirus kind and is considered as one of twelve kind of reoviridea family. In birds, reovirus has been separated from the other tissues and organs. The poultry which suffer from the disease show symptoms such as swelling joints, tenosynovitis, growth retardation syndrome, respiratory disease, intestinal disease, weakness of immune system, and malabsorption syndrome. In broilers at early ages, the economic loss from reovirus infections is often accompanied with increasing in mortality and poor performance such as weight loss. The best definition and the most significant diagnosis on diseases associated with reoviruses in the poultry is swelling joints. In the poultry, 10 days after infecting with reoviruses, this infectious agent is repulsed through ingestion and inhalation. These viruses are present everywhere; however, they are virulent in 80% of cases. So, removing virus or the presence of high levels of antibodies in the bird's blood is not the reasons for the disease. The virus is transmitted both vertically and horizontally. Since the virus is resistant against inactivation outside the host body, it may be transmitted repeatedly in a mechanical manner. Due to these characteristics, maintaining immunity of infection is almost impossible in the poultry which are kept in modern and high-density saloons. This study aimed at estimating the rate of reovirus infection in broilers. The study was conducted in Roodsar city using fecal samples from 30 different broilers which were selected from among ones were kept in the breeding poultry center of Roodsar. In the present study, the viral identification and isolation were conducted using RT-PCR method. From among 30 investigated samples, 4 samples (13/3%) were reported positive and 26 ones (86/7%) were reported negative. Since the birds are infected at early ages and there is a high prevalence and mortality due to high levels of virus, timely diagnosing and removing can reduce damage losses. In addition, asepticizing the saloon and having a good vaccination program in the next periods prevent damage and minimize losses caused by the virus.

Key Words : Reovirus,asepticizing,birds.

The Effect of a Dietary Prebiotic on Japanese Quails Growth Performance

Hosna Hajati[1*] and Ahmad Hassanabadi[2]

[1]*Ph.D graduated of poultry nutrition (FUM), HooshmandParvaranHonamic Company, Sari, Iran.*
[2] *Associate Professor of Poultry Nutrition, Department of Animal Science, Ferdowsi University of Mashhad, Mashhad, Iran.*

Objectives: Today, the withdrawal of antibiotics from poultry industry causedpoultry nutritionist to search for the alternatives to conquestthe risk factors of cross-resistance acquisition by harmful bacteria. Prebiotics are defined as nondigestible food ingredients that can be utilized by some of the intestinal microflora, which beneficially affect the host performance. Thus, the purpose of this study was to evaluate the effect of a dietary prebiotic (Active MOS) on Japanese quails growth performance.

Materials and Methods: A total of 80 seven-days-old unsexed Japanese Quails (Coturnixcoturnix japonica) were used in a completely randomized design with 2 treatments and4 replicates. The birds were randomly allocated to 8 pens (ten birds per pen). The main ingredients of the diets includedcorn and soybean meal.The experimental diets contained 2 levels of a prebiotic (0, 2 g/kg). The prebiotic that was used in this experiment was Active MOS (drived from *Saccharomyces cerevisiae*, 25 % MOS, 30% BGlucan, Brazil). Birds had access to water and food *ad-libitum*.The diets were formulated to meet the nutrient requirements of the quail as recommended by NRC (1994). The body weight, feed intake and feed conversion ratio of the birds was measured weekly. Data from this experiment were analyzed by analysis of variance using GLM procedures (SAS institute, 2008).

Results and Discussion: Birds fed supplemented diets presented lower FCR at all of the experimental periods ($P<0.05$). Also, feed intake was reduced and body weight gain was increased in the second and thirds weeks of the experiment ($P<0.05$). Overall, quails fed with prebiotic Active-MOS during 7 to 42 days of age showed better growth performance. However, it was reported that prebiotic supplementation improved feed conversion ratio of broiler breeders numerically, however, the differences were not significant statistically (Hajati et al., 2014). It has been claimed that the benefits of MOS is based on its specific properties such as modification of the intestinal flora, reduction in turnover rate of the intestinal mucosa and modulation of the immune system (Hajati et al., 2012). In conclusion, addition of Active-MOS at the level of 2 g per kilogram of diet improved growth performance of Japanese quails.

Keywords: Prebiotic, Japanese Quail, Growth Performance

Study on prevalence and species diversity of ectoparasites and fecal parasites of ornament birds in Kashan

Seyed Mehdi Hosseini Sabagh, Bahar Shemshadi, Mohammad Arbabi, Jalal Gholamrezaei, Mahyar Yarahmadi Khorasani, Mojtaba Kooshki

Regarding the maintenance of ornamental birds by human, adjacency of these birds with human during the day, and the presence of a friendly relationship between them, it can be concluded that paying attention to health status of ornamental birds is of great importance.Inthe present study, infecting by external(dermal) and fecalparasiteswere examined in ornamental birds in Kashan. To meet this end, a total of 200 ornamental birds, including (50 lovebirds, 50 finches, 50 canaries, and 50 pigeons) at different ages and races were studied randomly from different parts of Kashan. After sampling, they were put in containers of alcohol glycerin 10% and formalin 5%, and in order to identify and observe, they were sent to the laboratory and then, stained and examined by microscope and loop. The results of external parasites showed that 21 lovebirds (42%), 28 finches (56%), and 21 canaries (42%) were infected byDermanyssusgallinaemite (red mite).12 lovebirds (24%) and 9 pigeons (18%) were infected bylyprus.19 pigeons (38%) were infected by argas. 12 lovebirds (24%) were infected simultaneously by lyprus and Dermanyssusgallinae mite. And finally, 9 pigeons (18%) were infected simultaneously by lyprusand argas. The results of the fecal parasites showed that 7 canaries (14%) and 6 pigeons (12%) were infected byhetrakisgallinarum and 8 finches (16%) and 10 pigeons (20%) were infected by oocyte eimeria. In addition, no positive sampledue to infecting by cryptosporidium and giardia were found.

Keywords: ornamental birds, external parasites, fecal parasites, Kashan

Identification of NDV isolated from the recent outbreak in Ardestan's broiler farms

Z.Mojahei[1], M.Abdoshah[1], A.Anissian[2], A.Adiban[3], A.Roghani[4], A.Ashtari[1]
Razi Vaccine and Serum Research Institute[1], Islamic Azad University Abhar Branch[2], Veterinary Directorate of Isfahan Province[3], Clinician[4]

In November 2015, a very contagious disease with high mortality spread in broiler flocks around Ardestan. The Iranian veterinary organization was confirmed that it is not an outbreak of HPAI by molecular tests. After that, some death birds belong to several farms necropsied and taken samples included brain, spleen, and cecal tonsils were studied pathologically and virologically. The suspected samples were inoculated in 9-11 days SPF embryonated eggs and after 48 hours Newcastle disease virus was isolated from allantoic fluid. Pathogenicity indices of these viruses, such as Mean Death Time (MDT) and Intracerebral Pathogenicity Index (ICPI) calculated.
F gene sequence of these isolates compared with recent and earlier Iranian NDVs was done.
Additional histopathological studies were shown clear signs of Newcastle disease in the organs of the above mentioned.
Newcastle disease is still considered as a risk in poultry farms, and every time we are faced with a new aspect of the disease. Monitoring of obtained isolates, to identify and study of the virus phenotypic and genotypic changes, will be a great help to control of the disease.
Key words: Newcastle isolates, Ardestan, ICPI, MDT, F gene

Appraisal of a liquid yeast product on growth performance of Japanese quails

H. Hajati[1], A. Gilani[2], S. Seifi[2]
1Ph.D of poultry nutrition, HooshmandParvaranHonamiccompany, Sari, IRAN
[2]Faculty of Veterinary Medicine, Amol University of Special Modern Technologies, Amol, IRAN
[*]Corresponding author's e-mail: hosna.hajati@yahoo.com

Objectives: Antibiotic replacers such as prebiotic became of utmost important in recent years. Therefore, a trial was conducted to assess enzymaticallyhydrolyzed yeast as a novel liquid prebiotic onproductive traits of quails.
Materials and Methods: A total of80seven-day-old Japanesequails were randomly divided into 2 treatments. Each treatment consists of 40 birds and 4 replicates (pens) of 10 birds each. The first treatment (control) contained standard recommended diet with no added prebiotic. The second treatment was the basal diet of the first diet plus a liquid prebiotic in the drinking water (0.5 milliliter Celmanax® per liter of water, vol/vol). Celmanax® is an enzymatically hydrolyzed yeast plus yeast culture and yeast extract that is produced by Arm & Hammer Animal Nutrition, Iowa, USA. The diets were formulated to meet the nutrient requirements of the quail as recommended by NRC (1994). Feed and water were offered *ad libitum* throughout the trial from 7-35 days. Body weight gains (BWG), feed intake (FI) and feed conversion ratio (FCR) were measured as weekly. Data from this experiment were analyzed by analysis of variance using GLM procedures (SAS institute, 2008).
Results and conclusion: Mortality rate was not influenced by treatments. Feed intake was significantly decreased through addition of yeast product in the drinking water of quails in all phases. Body weight of birds receiving Celmanax® was significantly increased as compared to control group on 21 d. Also, overall BWG was improved numerically.The FCR of chickens fed Celmanax® was drastically better than control treatment due to less FI and more BWG in all weeks. In conclusion, addition of thisliquid yeast product had profound impacts on productive traits of quails. However, further research is needed to quantify the optimum level of this additive on quails.
Key words: Celmanax, quail, feed efficiency, growth

A clinical case of chicken infectious anemia disease and virus DNA detection in naturally infected broilers in Shiraz, Iran

Abdi-Hachesoo B.*, Asasi K.

Department of Clinical Science, School of Veterinary Medicine, Shiraz University, Shiraz, Iran

***Corresponding author's E. mail: abdi@shirazu.ac.ir**

Objectives: The present report describes an outbreak of gangrenous dermatitis (GD) infection in a commercial poultry farm in Shiraz involving 30-day-old broiler chickens.
Materials and methods: An infectious bursal disease (IBD)-vaccinated flock of 30000 broilers, 30 days of age, experienced sudden onset of depression, dermatitis and mortality. Clinical sign, necropsy, microbial culture, hematology and PCR assay considered for disease monitoring.
Results and conclusion: Postmortem examination showed extensive areas of dark reddish-purple to green, weepy areas of the skin, especially in feathers devoid areas. Affected areas included wings, breast, abdomen and legs. Subcutaneous hemorrhages and extensive blood-tinged edema were present beneath the affected skin. Gram-stained impression smears from the affected areas revealed numerous gram-positive cocci. Staphylococcus aureus grew on aerobic culture of subcutaneous tissues. Necropsy findings showed thymus atrophy resulting in an almost complete absence of thymic lobes and mild bone marrow and bursal atrophy in some cases. Packed cell volume (PCV) was 25% in affected chicks. Hemocytoblasts and toxic heterophils was seen in cytology of bone marrow. Chicken infectious anemia virus DNA was detected from thymus and cecal tonsils by amplification of 675 base pairs of VP1 gene in polymerase chain reaction. Sequencing and nucleotide alignment of these isolates showed high similarity with isolates from china, japan and central Africa. In conclusion, the present report summarizes multiple findings from a hemorrhagic syndrome outbreak in a broiler farm which had wrecking consequences on later performance of this flock.
Key words: infectious chicken anemia, gangrenous dermatitis, staphylococcus aureus, PCR

Comparison of alleviating effects of corn, wheat or switched corn-to-wheat based diets on reducing transportation stress in broilers

Mehraei Hamzekolaei MH [2,*], Zamani Moghaddam AK[1], Ghasemi M[2], Parchami M[3], Mehrani Y[3], Kor S[3]

[1] Department of clinical sciences, Faculty of veterinary medicine, Shahrekord University, Shahrekord, Iran; [2] Poulty Diseases Resident, Shahrekord University, Shahrekord, Iran; [3] DVM student, Shahrekord University, Shahrekord, Iran

Corresponding author's email: mehraei.mohammad@stu.sku.ac.ir

Objective: Harvesting, handling and transporting chickens to the slaughterhouses and sometimes to other farms might covertly reduce their welfare. These adverse effects become even more significant when transportation takes place under abnormal environmental conditions, or when adequate time is not given for adaptation and normalization of confounding physiological changes. The aim of this study was to evaluate the effects of corn-based diet, wheat-based diets supplemented with arabinoxylanase and phytase and a switched corn to wheat-based diet on reducing transportation stress in broiler chicks based on elevation of Heterophil to lymphocyte ration as an index of stress in poultry.
Materials and methods: A total of 144 one-day old female Ross 308 broiler chickens were randomly divided into 3 groups with 4 replicates in each groups. The first group was fed corn-based diet while the second group fed wheat-based diet supplemented with arabinoxylanase and phytase for the whole experiment. Group 3 was fed corn-based diet in the starter period and in grower and finisher, wheat + arabinoxylanase and phytase was substituted with corn. At day 42, four birds/ replicate were subjected to 100 km of transportation. Immediately on arrival and after 24 h, heterophil counts, lymphocyte counts and H:L ratios were measured.
Results and conclusion: Immediately on arrival, switched corn-to-wheat fed group had the lowest heterophil counts ($P<0.05$), the highest lymphocyte count and the lowest H:L ratio than the other groups ($P\geq0.05$). After 24 h, the group which was fed corn-based diet had the highest increment of Lymphocyte counts, but H:L ratio was still lowest in switched corn-to-wheat group, although it was not significant ($P\geq0.05$). It could be concluded that feeding corn-based diet at starter period and switching it to wheat-based diet supplemented with enzymes could alleviate transportation stress in broilers.
Keywords: transportation stress, corn, wheat, heterophil/lymphocyte

Molecular detection of chicken infectious anemiavirus (CIAV) in broiler flocks of Tehran and Qazvin in 2014

Majidi S[1], madadgar O[2], ghalyanchi langroodiA[3]

[1] Student of veterinary medicine, ,University of Tehran,

[2]Department of Microbiology ,Faculty of Veterinary Medicine, University of Tehran

[3]Department of Microbiology ,Faculty of Veterinary Medicine, University of Tehran

Objective: Chicken infectious anemia is a viral disease in young chickens which characterizedby aplastic anemia, atrophy of thymus andimmunosuppression that causes irreparable damage to the poultry industry in world.

Material & methods: The tissue samples were collected from forty flocks thattheyhad no clinical sign of disease at slaughter age (6 weeks old) from the slaughter house of Tehran and Qazvin. PCR method used was optimized and the sensitivity ofthe primers was measured. In addition, the PCR products were sent for sequencing.

Result & Conclusions: the results showed that all of the samples were positive for CIAV. It seems the CIAV has a wide spread distribution among the broiler flocks; and there are sub clinical infection in broiler flocks.

Keyword: Chicken Infectious anemia virus, broiler flocks, immunosuppression, sub clinical infectious, aplastic anemia.

Evaluation the Clinical Utility of Troponin to Detect Ascites in Broiler

Alavi GH[1*], Tehranisharif M[2], Haghbinnazarpak H[2], Haghitabar M[3], Arefimehr M[3], Abedifiroozjaei A[3]

1.Postgraduate of Veterinary Medicine Faculty, Islamic Azad University of Garmsar, Garmsar, Iran

2.Department of Clinical Science, Faculty of Veterinary Medicine, Islamic Azad University, Garmsar, Iran

3. Student of Veterinary Medicine, Islamic Azad University of Garmsar, Garmsar, Iran

Corresponding author's email:mda_vet@yahoo.com

Objectives: In many countries, ascites has become a major concern for the poultry industry. This syndrome imposed serious economic losses to the poultry industry in many countries of the world and not just because of the high mortality but due to the reduced growth and carcass quality during slaughter.

Materials & Methods: The aim of this study was to determine the concentrate of Troponin in ascetic broilers & evaluate the clinical accuracy of Troponin as a diagnostic tool in ascites.

Total 440 one day broiler chicken included in this study. They were randomly divided in two groups. Group 1 was control and kept at a different place. Group 2 was assumed as ascetic. Every group was divided to 6 pen. Ascites induced in group 2. In order to define ascites, RV-TV ratio were determined. Induction of ascites in the hall by 4 factors, cold, salt water, reduced O2 and feed pellets was carried out.

Results & Conclusion:in Controlandtreatment groupsthe ratio ofRV-TVinsalontreatmentwas60%and27%in thecontrolroom.Usingbiochemicalexperiments, statistical analysisshowed that theconcentration oftroponin in the treatment groupin comparison with the control grouphadsignificantly increased. The results of this study showed that troponin is valid tool in diagnosis of ascites.

Key word: ascites,RV-TV,Troponin

The effects of adding sterile poultry dried waste in broiler's diets with different energy levels on performance parameters and humoral immunity responses to Newcastle vaccines

Ramezani A[2], Zamani Moghaddam AK[1], Mehrani Y[2,*], Heidari A[3], Mehraei Hamzekolaei MH[4], Dehghani Samani A[4], Parchami M[2]

[1] Department of clinical sciences, Faculty of veterinary medicine, Shahrekord University, Shahrekord, Iran; [2] DVM student, Shahrekord University, Shahrekord, Iran; [3] Graduated of veterinary medicine, Shahrekord university, Shahrekord, Iran; [4] Poulty Diseases Resident, Shahrekord University, Shahrekord, Iran

Corresponding author's email: mehr.yeganeh@yahoo.com

Objective: Poultry dried waste (PDW) consists of faeces, urine and litter materials. PDW is a valuable source of organic matter, total nitrogen, phosphorus, potassium, trace elements (copper, manganese, iron and zinc) and Amino-nitrogen, and is suggested recently to become a replacement for di-calcium phosphate and supplying some trace minerals in broilers diets that might lower the cost of production.

Materials and Methods: A total of one hundred and seventeen 1-day old broiler chickens (Ross 308) were randomly divided into 3 groups of 39 chicks (13 birds/ replicate). The first group was control group which received conventional corn-soybean based diet in accordance with NRC (1994) till the end of the experiment. The second and third groups were fed the same starter formula as control group, but autoclaved PDW (8.7 %) was added to grower and finisher diets. In addition, groups two and three received higher and lower levels of energy than the recommended NRC Formulas, respectively. All the birds were raised equally and were vaccinated against Newcastle disease on 5th, 12th and 18th days with lentogenic vaccines. Chicks were weighed weekly and live weight, live weight gain and feed conversion ratio were calculated on a per bird basis. At the end of the experiment, blood was collected from 9 birds whose body weights were closer to the group average and were slaughtered to measure carcass yield and selected internal organs. Assessments of humoral immunity responses were carried out with HA and HI tests.

Results and conclusion: At the end of the experiment the control group had the best feed conversion ratio (FCR) and live weight gain ($p<0.05$) that the other groups, but the percent of organ weights including liver, spleen and heart were not significantly different among the groups. However, when the costs of the three diets were compared, the group which received sterile PDW with lower energy levels in grower and finisher diets, was more cost-efficient than the other groups. Moreover, the PDW+ High energy levels had the best HI titers among the three, although not significant ($p\geq0.05$). It could be concluded that addition of sterile poultry dried waste in broilers' diet might be an cost-efficient alternative for di-calcium phosphate and a as a supplement of some trace minerals in future and might decline the environmental harmfulness of phosphor and total nitrogen contents of poultry waste.

Keywords: sterile poultry dried waste, diet, broiler, performance, humoral immunity

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Transportation stress in broiler chickens and the effects of different levels of Satureja Khuzestanica extract in alleviating the deleterious condition

Nasiri M [2,*], Zamani Moghaddam AK[1], Dehghani Samani A[3], Keyvani Hafshejani S[4], Heidari A[4], Ramezani A[2]

[1] Department of clinical sciences, Faculty of veterinary medicine, Shahrekord University, Shahrekord, Iran; [2] DVM student, Shahrekord University, Shahrekord, Iran; [3] Poulty Diseases Resident, Shahrekord University, Shahrekord, Iran; [4] Graduated of veterinary medicine, Shahrekord university, Shahrekord, Iran

Corresponding author's email: motaharenasiri93@gmail.com

Objective: Transportation includes harvesting, handling, and transporting broilers to the slaughterhouses, other farms and laboratories. Satureja is one of the herbal extracts that is considered as a therapeutic agent which contains essential oils, flavonoids and triterpenoids and was shown to have beneficial effects on FCR and body weight gain. The objective of this study was to evaluate the effects of different levels of the herbal extract on reducing transportation stress in broiler chickens based on elevation of heterophil to lymphocyte ration as an index of stress in poultry.

Materials and methods: One hundred and sixty eight, 1-d old Ross 308 broiler chickens from both sexes were randomly divided into 4 groups and each group consisted of three replicate (14 chicks/ replicate). The first group was control and the second, third and fourth groups received 250, 500 and 1000 ppm of Satureja Khuzestanica extract (Barij Essence Pharmaceutical co.), respectively. The extract was added in the drinking water from day 11 till the end of the experiment at day 42. All the groups were reared equally in accordance with standard protocols. At the end of the experiment, three birds/ replicate were subjected to 100 km of transportation. Immediately on arrival and after 24 h, heterophil counts, lymphocyte counts and H:L ratios were measured.

Results and conclusion: Addition of 500 and 1000 ppm of Satureja Khuzestanica extract helped the birds to lower the H counts and H:L ratios to the lowest level among other groups immediately on arrival from the journey ($P\geq0.05$). Although after 24 h, these two groups had the lowest H:L ratio, but when these two were compared, 1000 ppm of the herbal extract had higher decrement oh H:L ratio than 500 ppm ($P<0.05$). The results presented here demonstrate the effectiveness of Satureja Khuzestanica extract at 1000 ppm for reducing transportation stress in broiler chickens and elevating their welfare.

Keywords: Transportation stress, broiler, Satureja Khuzestanica, welfare

Production of a monoclonal antibody against Chicken IgG(IgY)

Masoud Reza Seyfiabad Shapouri[1*], Mohammad Rashnoo[1], Mahshid Aria[2]

1. *Department of Pathobiology, Faculty of Veterinary Medicine, Shahid Chamran University, Ahvaz, Iran*
2. *Department of Biology, Faculty of Science, Shahid Chamran University, Ahvaz, Iran*

Introduction and Objectives: Monoclonal antibodies are important tools used by many investigators in their research and diagnostic purpose. These antibodies have opened remarkablenew approaches fordiagnosing and treatment of diseases.Due to the expanding poultry industry and the need to prepare kits for serological diagnosis of poultry diseases and also due to interest for replacing mammalian IgG with chicken IgG in research and clinical applications, the aim of the present work was to prepare a monoclonal antibodies against chicken IgG.
Materials and Methods: IgG was purified from chicken serum for immunization of Balb/c mice. After the fusion of immune mouse spleen cells and SP2/0 myeloma cells, hybridoma cells grown in a selective medium were generated and their ability to produce antibody against chicken IgG was determined by enzyme-linked immunosorbent assay (ELISA) and Western blotting.
Results: Based on the results, one hybridoma clone (5B8) was able to produce anti-chicken IgG antibodies. In Western blot, 5B8 antibody identified the whole 180 KDamolecule of chicken IgG in non-reducing conditions but it did not recognizethe heavy (60 KDa) and light chains (25 KDa) of chicken IgG in reducing condition. Practical application of the Mab as secondary antibody in ELISA, was assessedby testing the reaction of chicken sera with recombinant nucleoprotein of H9N2 avian influenza virus.
Conclusion: In this experiment, 5B8 antibody showed results comparable to a commercial anti-chicken IgG, labelled with peroxidase. The present study also indicated that the Mab 5B8 was specific for chicken IgG, based on immune dot assay on sera prepared from various avian and mammalian species. This Mab could be useful in various immunoassays, especiallyELISA-based ones. It could be used in place of polyclonal antibodies against chicken IgG alsofor estimating total Ig content in serum of chickens.
Keywords:anti-chicken IgG antibodies, IgY, monoclonal antibody, hybridoma, SDS-PAGE, Western blotting.

Effect of different levels of Ropadiar® on performance parameters and intestinal morphology of Japanese quails (coturnix coturnix japonica)

Tohidifar SS[1,*], Zamani Moghaddam AK[2], Mehraei Hamzekolaei MH[1], Arabha H[1], Kiani Salmi A[3].

[1] *Poulty Diseases Resident, Shahrekord University, Shahrekord, Iran;* [2] *Department of clinical sciences, Faculty of veterinary medicine, Shahrekord University, Shahrekord, Iran;* [3] *Technician at department of clinical sciences, Shahrekord University, Shahrekord, Iran*

Corresponding author's email: sattar.tohidi@stu.sku.ac.ir

Objectives: The aim of this study was to assess the effects of dietary Ropadiar®, a natural product which contains carvacrol, thymol, γ-terpinene and p-cymene, on growth characteristics and intestinal morphology of Japanese quails.
Materials & Methods: One hundred and eighty 1-day old Japanese quails were randomly divided into three groups of 60 birds per treatment (20 birds/ replicate): One control group and two treatment groups of 100 and 200 mg of Ropadiar®/kg of diet. The temperature of the room was maintained at 36 ċ initially, and reduced by 3 ċ /wk. until reached 24 ċ. All the birds were weighed weekly and live weight, live weight gain and feed conversion ratio were calculated on a per bird basis. At the end of the experiment, 8 birds whose body weights were close to the group average were selected from each group and slaughtered to measure carcass yield, selected internal organs and abdominal fat. Then, 2-cm segments of the duodenum, jejunum and ileum were dissected and intestinal villus morphology was measured.
Results & Conclusion: Body weight gain and feed intake significantly ($P<0.05$) increased for the birds fed Ropadiar® in the diet compared to the control. The feed conversion ratio (FCR), carcass yield, organs weight and abdominal fat were not affected by the dietary treatments ($P>0.05$). However, the results obtained from this study showed that the duodenal villus height and surface area was greater in quails fed the diet supplemented with Ropadiar® than the control group. In conclusion, supplementation of Ropadiar® to Japanese quail's diet would be beneficial for improving the birds' performance and intestinal villus morphology
Key words: Ropadiar®, performance parameters, intestinal morphology, Japanese quail

Detection of avian influenza virus of H9 subtype in the tracheal swabs of experimentally infected chickens by RT–PCR

Mahshid Aria[1], Masoud Reza Seyfiabad Shapouri[2*], Mohammad Roayaei[1], Hossein Motamedi[1]

1. Department of Biology, Faculty of Science, Shahid Chamran University, Ahvaz, Iran

2. Department of Pathobiology, Faculty of Veterinary Medicine, Shahid Chamran University, Ahvaz, Iran

Introduction and Objectives: Avian Influenza (AI) is a viral respiratory disease of domestic and wild birds.For laboratory diagnosis of avian respiratory viruses, it is essential to have rapid methods able to detect viruses in early stages of the infection in clinical specimens. Virus isolation (VI) is regarded as the "gold standard" among different methods for influenza virus. Howeverthis method is laborious and results are generally available in four to five days and a definitive negative diagnosis may require culture for up to 3 weeks. Therefore, the use of rapid, validated alternative tests for diagnosis of AI could be advisable. Compared to VI, RT-PCR assay could be completed within 1 day and reduces the handling of infectious materials. According to the above, for detection of avian influenza, RT-PCR method is a rapid and reliable method and could be done on tracheal swabs and used as an alternative assay to the laborious, time consuming VI. The aim of this study was toevaluate a H9 specific RT-PCR for detection of the virus in tracheal swabs of experimentally infected chickens.

Materials and Methods: Ten, four-weeks-old commercial broiler chickens never been exposed to avian influenza virus were used in this experiment. The chickens were divided in 2 five-bird groups including test and control groups. Chickens of the test group were inoculated intranasaly by H9N2 subtype of AI virus. Tracheal swabs collected from all chickens during 7 days post inoculation and tested by RT-PCR.

Results: In infected animals, AI viruses were detected most frequently between days 2-6post infection. The results proved that the RT-PCR assay could be a reliable and rapid alternative to VI assay for detection of AI virus in tracheal swabsof infected chickens.

Conclusion: Based on the obtained results it can be concluded that RT-PCR is a sensitive method for detection of infections caused by H9 serotype of avian influenza virus in clinical samples. Using this system rapid diagnosis will be achieved so disease control strategies will be used more efficiently.

Keywords: Influenza virus A, H9N2,tracheal swabs, RT-PCR,chickens.

Report of the Chinese Genotype of Infectious Bronchitis Virus (QX-type) in a broiler flock in Ardabil Province, Iran

Azizpour A.[*1],Algolizadh Moghadam R.[2], Bijanzad P.[3],Hajiabaloo V.[3],karimi T.[4], Faramarzi S.[5],Zarghami A.[5]

1. Meshginshahr Faculty of Agriculture, University of mohagheghArdabili, Ardabil, Iran.

2. Private Section Veterinarian, Ardabil, Iran.

3. Department of Clinical Science, Tabriz Branch, Islamic Azad University, Tabriz, Iran

4. DVM Graduated from faculty of veterinary medicine, Shahid Chamran university of Ahwaz, Iran

5. Department of Poultry Diseases, Faculty of Veterinary Sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran

Corresponding author's email: Aidin_azizpour@yahoo.com

Objective: Infectious bronchitis (IB) is one of the important respiratory diseases of chicken which causes significant economic losses in poultry industry, new variant strains and serotypes incidence is a property of IB, which causes difficulties in control of IB in farms. This study reports infection of a broiler flock in Ardabil, with infectious bronchitis virus Chinese Genotype (QX-type). It was seen on 28 days old chicken with decrease in weight gain, with 25 percent mortality rate and kidney involvement.

Materials & Methods: From infected chickens cecal tonsils and kidney samples were gained and has been submitted to the PCR Lab in 2015. Infectious Bronchitis Virus (IBV) was detected in the clinical samples. The partial S1 gene of the spike protein was amplified and sequenced using conventional RT-PCR.

Results & Conclusion: Phylogenetic analysis of amino acid sequences revealed that this isolate was homologous with QX IBV-type detected in China and European countries.This is the first report of QX-typeIBV as new variant of IBVin Ardabilregion. Thus, improving the vaccination program and selectingnew vaccine types is recommended for poultry in Ardabil province.

Key words: Infectious bronchitis virus, QX-type,Phylogenetic Tree, Ardabil province

Histopathologic and bacteriologic study on broiler condemned livers in Shahre-Kord industrial poultry salaughterhouse

DaneshDehkordi Sh[1]*,EsmailianDehkordi A[2]
[1] Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran,[2] General practitioner in private sector
Corresponding Author's Email:shahram.danesh65@gmail.com

Objectives: Condemnation of diseased livers in broiler slaughterhouses has economic importance. Pathologic and bacteriologic studies could beresulted in diagnosing of causes of disease.
Materials & Methods: This study was done, in the period of 4 months and 4 times in a week,In Shahre-Kord industrial poultry slaughterhouse. In this period 40% of liver were condemned. Based on the macroscopic features. Diseased livers were divided into 2 groups, group 1 included of congested and dark livers (64%) and group 2 included of pale livers with yellow discoloration (36%). Bacteriologic examinations resulted in isolation of E.coli (9.14%) from group 1. The result of serotyping of 132 isolates were as follow: 54.03% untypable isolates, 10.61% rough strains, 28.06% O78 and 7.30% O2. Histopathologic studies revealed 3 different groups of diseased livers. First, congested livers (51%). Second, congested livers with hepatitis (19%) and third, livers with fatty change (30%). These results showed the importance of E.coli in economic loss and public health hazards.
Key words: Broiler, Liver, E.coli, Hepatitis, Fatty change.

Prevalence of blood parasites in domestic pigeons (*Columba liviadomestica*) in ChaharmahalVaBakhtiari Province, Iran

DaneshDehkordiSh[*1], EsmailianDehkordi A[2],Zamanimoqaddam A[3], DehghaniSamani A[1]
[1]Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran,[2]General practitioner in private sector,[3]Isfahan university of medical science
Corresponding Author's Email:shahram.danesh65@gmail.com

Objectives:A parasite is an organism that lives on or in a host and gets its food from or at the expense of its host. Parasites can cause disease in their hosts. Blood parasites are organisms that live in the blood of their animal hosts. These parasites can range from single-celled protozoa to more complex bacteria and rickettsiae. The method of transmission varies, depending on the parasite, but often they are transmitted through the bites of ticks or flies also blood parasites can transit many harmful and even zoonotic particles to their hosts. Pigeons find in every location and area in worlds, also pigeons kept as pet animal in different parts of worlds, so it is necessary for every practitioner and person who contact with pigeons to know the occurrence and prevalence of blood parasites in his/her location. In this investigation we focused on prevalence of blood parasites in population of domestic pigeons (*Columba liviadomestica*) in ChaharmahalVaBakhtiari Province in Iran.
Materials & Methods:55 Domestic pigeons from different part of ChaharmahalVaBakhtiari Province were studied.A small amount of blood (~50µl) from brachial vein via sterile vein puncture was taken. Immediately blood smears prepared and were air dried and fixed in absolute methanol for 5 minutes after sample collection and later stained with Wright–Giemsa, staining techniques for 15 minutes. After the staining and drying of smears, the slides were observed by optic microscope (Via lens 10, 40 & 100) carefully for identifying of blood parasites. Blood parasites identified in accordance with the keys of identification. The number of collected ectoparasites and infested birds recorded carefully.
Results & Conclusion: Results of this study show that infection by *Haemoproteuscolumbae* and Leukocytozoon species occur in domestic pigeons in this area. Results obtained from this study show that prevalence of *Haemoproteuscolumbae* in these pigeons was 18.18% and prevalence of Leukocytozoon specieswere 1.81%. Result of this study and other same studies show the prevalence of blood parasites in special locations.
Keywords: Domestic pigeons,*Haemoproteuscolumbae*, Leukocytozoon species, Prevalence.

The effect of Extracted MenthaPiperatain Water on Ileum Escherichia coli Population, Digestive Enzyme and Serum in Broiler Chickens

Hadi Haghbin Nazarpak[1], Ali Davarzani[2], Zahra Kherghepoosh[2*], Mahnegar Asadi[2]
1.Department of Clinical Sciences, Faculty of Veterinary Medicine, Garmsar Branch, Islamic Azad University, Garmsar, Iran
2. Student of Veterinary Medicine, Islamic Azad University of Garmsar, Garmsar, Iran
Corresponding author's email: Zahra.kherghepoosh@gmail.com

Objectives: This study was designed to investigate the effect of extractedMenthapiperataon digestive enzymes, serum concentration, lipoprotein, cholesterol, phospholipids and antimicrobial activity of the gut in broiler chickens.

Materials & Methods: A total of one hundred and fifty, 4-day-old male broiler chickens were used. There were four experimental treatments: controlWET2۲) .ml water extracted Menthain a liter of drinking water (WET 3),5 ml (WET 4) 8 ml (WET 1). Each treatment consisted of 4 replicate pens with ten birds per each pen. Acommercial broiler diet with the same energy and protein was fed .The chickens were maintained on the drinkingtreatments from 4 to 40 days of age.

Results & Conclusion: In the CFU (colony forming units) of E. coli there was no difference between treatments. Theexperimental results showed that the differences between treatments in terms of alkaline phosphates ,amylase , LDL andHDL were not significant. But the enzyme lipase in treatment 3 was significantly reduced compared to treatment 1 and2 ($P<0.05$). Also, LDL/HDL ratio in treatment 4 was significantly increased compared to control ($P<0.05$).

Keywords: Menthapiperata, E. coli, Broiler, Ileum

The effects of tetracycline administration on some serum biochemical parameters in Broilers

DaneshDehkordi Sh[1*],EsmailianDehkordi A[2]
[1] Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran,[2] General practitioner in private sector
Corresponding Author's Email:shahram.danesh65@gmail.com

Objectives: In present study, we determined the effects of tetracycline on the serum biochemical parameters of Broilers.

Materials & Methods: Forty Broilers (19 days old) were randomly divided into two groups of control and treatment. Bath groups were kept under the same environmental condition and nutrition. In the treatment group, 400 gr/ 1000 lit tetracycline was administered. After five days blood samples of all birds were collected. And their sera separated by centrifuging, then some of biochemical parameters were evaluated.

Results & Conclusion: Results showed that Alkaline phosphatase (ALP), Alanine aminotransferase (ALT), Aspartate aminotransferase (AST), bilirubin and billiverdin concentration were significantly increased ($p<0.05$), but Calcium concentration was significantly decreased in treatment group. Evaluation of the serum levels of glucose and Phosphorous did not reveal statistically significant differences between treatment and control groups. In assessment of results, tetracycline administration can be used in broilers but it must be controlled in liver diseases because it can cause changes on liver parameters.

Key words: Tetracycline, Biochemical Parameters, Broilers.

The study on bacterial contamination of eggs in ChaharmahalVaBakhtiari Province, Iran

DaneshDehkordi Sh[1]*, EsmailianDehkordi A[2]

[1] Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran, [2] General practitioner in private sector

Corresponding Author's Email:shahram.danesh65@gmail.com

Objectives: This study was to determine the bacterial contamination of industrial eggs in(Shahre-Kordcity)ChaharmahalVaBakhtiari Province– Iran.

Materials & Methods:150 eggs were collected, randomly from the stores of the city and were examined for isolating of bacteria from inner shell, albumen and vitelline using selective enrichment broth and agar to isolate the salmonellae, E.coli, Klebsiella, Citrobacter and proteus.

Results &Conclusion :The results showed that 16% of samples were contaminated with gram negative bacteria, E.coli (9.2%), Klebsiella (3.2%), Proteus (2.4%) and citrobacter (1.2%). Regarding to the results 8% of inner shell, 6% of albumen and 5.2% of vitelline were contaminated at least with one of the isolated bacteria, no salmonella were isolated from the tested samples.

Key word: Egg, Bacterial contamination, Shahre-Kord.

Antimicrobial Resistance Profile of *Salmonella* isolates from Poultry Flocks Around Isfahan

Haghbin Nazarpak H[1], Barati S[2], Davarzani M A[3], Mehdi Haghi[3], Kherghepoosh Z[3], Kooshki M[3]

1. Department of Clinical Science, Faculty of Veterinary Medicine, Islamic Azad University, Garmsar, Iran

2. Department of Microbiology, Faculty of Veterinary Medicine, Chamran University, Ahvaz, Iran

3. Student of Veterinary Medicine, Islamic Azad University of Garmsar, Garmsar, Iran

Corresponding author's email: Ali.Davarzany@yahoo.com

Objective: *Salmonella*is one of the pathogen bacteriain birds. This bacteria is very important due to its economic impact on the poultry industry and human health. Some of *Salmonella* serovars such as *S.* Enteritidis and *S.* Typhimurium are classified among important zoonotic agents. The rate of antimicrobial resistance among poultry bacterial pathogens has been increased dramaticallyBecause of prudent use of antibacterial agents in poultry industry.

The purpose of this study was to determine the antimicrobial resistance profile of *Salmonella* isolates recently recovered from poultry farms around Isfahan city.

Materials & Methods: The susceptibility of 14*Salmonella* isolates obtained from 25 poultry farms,totally1000 fecal samples,around Isfahan city was determined to a panel of 12 antimicrobial agents using the standard agar disc diffusion procedure (Kirby-Bauer method).

Results & Conclusion: All *Salmonella* isolates were susceptible to florfenicol, danofloxacin, ciprofloxacin, levofloxacin, norfloxacin, imipenem and all isolates were resistant to colistin. 90% to each of carbenicillin and tetracycline, 60% to each of furazolidone and amoxi-clav, and 50% to Doxycycline. All isolates were resistant to at least three antimicrobial agents. Ten percent of isolates exhibited multiple resistances tomore than 14 antimicrobial agents. The results of this study showed that the resistance of poultry *Salmonella* isolates tothe most of the antimicrobial agents common in poultry industry is widespread and of concern to poultry industry aswell as public health.

Keywords:*Salmonella*,Poultry, Antimicrobial resistance, Isfahan.

Seroprevalence of Mycoplasma synoviae in west Azerbaijan provinceCommercialbroiler farms

JafarTaifebagherlu[*1], Dana Anousheh[2],SimaGhoreishi
1. *Department of Clinical Sciences, Faculty of Veterinary Medicine, Urmia University, Urmia, Iran.*
2. *Undergraduatedstudent of veterinary medicine, Faculty of Veterinary Medicine, Urmia university, Urmia,Iran.*
Corresponding author's email:J.tayefeh@urmia.ac.ir

Objectives: The present study was aim to carry out a serological survey of antibodies against *Mycoplasma synoviae*in broiler chickens in west Azerbaijan province of Iran during 2015.Mycoplasma synoviae (MS) infection most frequently occurs as a subclinical upper respiratory infection and *synovitis*.economic impact of infection witharthropathic MS strains may cause losses dueto growth retardation and culling of lame birds.*Transmission* occurs both *vertically and horizontally. Vertical transmission plays a major role in spread of MS, Thus, all eggs used for live virus vaccine production should be obtained from MS-free flocks.*
Materials & Methods:A total of 250 serum samples were collected from 20 commercial broiler farms and tested by serum plate agglutination (SPA) using *Mycoplasma synoviae*antigens(*Soleil® MS Antigen, France)*. The samples were considered positive in the SPA test for MS if showed agglutination or clump at a dilution of 1:8 or higher in 2 min.
Results & Conclusion: The overall Seroprevalence of *Mycoplasma synoviae*in this investigation were recorded 79.31%. The SPA test have high sensitivity and can detect bothIgM and IgGantibodies and response in early stage ofMS infection. Results indicated that *Mycoplasma synoviae*have a great impact on the west azerbaijan province poultry farms.
Keywords: Mycoplasma synoviae, SPA, Broiler chickens, West Azerbaijan province

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Report of reovirus infection in broilers farm from vaccinated breeder

Mansoormayahi[1],soroush khademian[2] ,hosein hoseini[3]
[1]professorof health and diseases of poultry faculty of veterinary medicine shahidchamran university of ahwaz, iran
[2]DVM.DVSc candidate of health and diseases of poultry faculty of veterinary medicine shahidchamran university of ahwaz, iran
[3] professor assistant of faculty of veterinary medicine Islamic azad university
Dr.s.khademian@gmail.com

At broiler farm with 70000 capacity lameness and recumbency pronounced in chicks. Morbidity increased with raising the chicks but mortality was normal. At the farm chicks rearing as male and female and lameness observed more at males. At 30days, 30 serum samples sent to laboratory to asses antibody against reovirus with indirect elisa synchronous sampling again for detecting bacteria agent from joint. Result of elisa was mean titre 8038 with 22%cv in biochek kit. Also staphylocucusaureus detected from hock joint that was predictable in consideration of stress on joints from first week.
necropsyreveal no sign of infection but gastrocnemiuswas swollen and rupture wasseen. At palpation the hocks feels warm. Perceive a greenish discoloration of the skin due to extravasation of blood. Condyle and epicondyle involved. Presumptive diagnosis was on reovirus and to confirm the cause of disease 30 birds from different ages sent for molecular identification on tendon and gastrointestinal tract.
Presence of reovirus was positive just on jointtendon of 35 days chicks with RT-PCR. At 15 days chicks presence of reoviruswas positive in the intestine and at 7days chicks both intestine and pancreas were positive with RT-PCR. Studies show that chicks were from vaccinated breeder that vaccinated with killed reovirusvaccine two times at 10 and 18 weeks and humoral antibody detected at indirect-ELISA was 10000. According to the results from poultry farms prevalence of lameness although vaccination with live and killed vaccine perform at breeder farms will show this hypothese about the insufficiency the current vaccines to make protection against prevalence of reovirus that affected the farms.
Key words: Reovirus, Identification, Broiler, Elisa, RT-PCR

Effects of different levels of probiotic and garlic on biochemical and immunological parameters in broiler chickens

Peighambarzadeh S. Z. [1],Qalavand M[2*],Mehranfar M[3],SalehiVarbadi M[4]

[1]Departmentof Clinical Pathology, Faculty of Veterinary Medicine, Islamic Azad University Shoushtar Branch, Shoushtar, Iran;[2]Doctor VeterinaryMedicine Student, Islamic Azad University Karaj Branch, Karaj, Iran;[3]Veterinary Practitioner, Karaj, Iran;[4]Doctor Veterinary Medicine Student, Islamic Azad University Shoushtar Branch, Shoushtar, Iran

Corresponding author's email: m.qalavand@gmail.com

Objectives: Nowadays, with regard to the growth promoter antibiotics ban in broilers feeding, the use of probiotics and medicinal plants are increased.The present study was carried out with the aim ofinvestigate different levels of probiotic and garlic effect on biochemical and immunological parameters in broiler chickens.
Materials & Methods: 320 day-old Ross 308 broiler chicks was used as a complete randomized design with 4 treatments and 4 replicates (with 20 chicks in each) for 42 days on deep litter. Diets were based on NRC recommendations and were included: first treatment, with no additives (control diet); basal diet with probiotics protexin (10 and 15 g/ kg); and basal diet plus 0.1 of garlic powder .At the end of study, 2 birds were selected from each pen for blood sampling.
Results & Conclusion: The results indicated that feeding probiotics, reduced intestinal ileum pH significantly (5.87). Supplementing garlic in bird's diet had significant effect on Newcastle antibody titer (5.8) ($p<5.8$); but was observed no effect on anti-SRBC and bronchitis titer in all treatments. It could be seen that probiotics could decrease blood cholesterol (98.45 and 101.78 mg /dl in 10 and 15 g/ kg levels respectively) and HDL (10 and 15 g/ kg 58.88 and 56.35 mg/ dl levels in 10 and 15 g/ kg levels respectively) compared to control group ($p<0.05$). There were also no significant effects of probiotics and garlic supplement on the triglycerides, LDL, glucose and protein blood levels in experimental groups compared to the control. As a conclusion, obtained results from this study showed that using probiotics and garlic supplements may be improve immune system and change some blood parameters in broiler chickens.
Key words: probiotics, garlic, immune system, biochemical parameters, broiler chickens

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Mycoplasma contamination in commercial Pullet Chicks in Tehran province

A.R. Mohammadi
Tehran Agricultural Research Centre, Iran
email: ar.mohammadi@areo.ir

Mycoplasmosis of poultry is a respiratory disease of fowls with outbreaks through the world. This disease is economically very important that plus reducing the production in commercial layers and broilers, causes hatchability decrease and swell of joints, ligaments and egg channel as well. In this study, from 14 flocks of commercial poults in Tehran province, 1195 serum samples and 1195 larynx swap samples were taken from day one up to 3 months old in 45 day periods and the serological test by RSA and Elisa routes and the bacteriological test using standard route were done for Mycoplasmas. The serology results using RSA route showed the 10.12% and 5.60% positive and suspective positive of the samples were contaminated to Mycoplasma gallisepticum while contamination to Mycoplasma synoviae was 27.92% and 10.6% positive and suspective positive respectively. In Elisa route 40.1% of the chicks were contaminated to Mycoplasma gallisepticum and 56% to Mycoplasma synoviae. According to bacteriological results 76.47% of the samples had produced Mycoplasmic colonies which 5.5% of them were recognized Mycoplasma gallisepticum and 53% Mycoplasma synoviae. Control and prevention of this disease in poultry industry and especially in commercial layers needs a substantial, national and completely applied planning and decision.
Key word: Mycoplasma,Gallisepticum,Synoviae, Pullet,Tehran.

The study of mycoplasma contamination in commercial layer flocks in Tehran province

A.R. Mohammadi
Tehran Agricultural Research Centre, Iran
email: ar.mohammadi@areo.ir

Mycoplasmosis of poultry is a respiratory disease of fowls with outbreaks through the world. This disease is economically very important that plus reducing the production in commercial layers and broilers, causes hatchability decrease and swell of joints, ligaments and egg channel as well. In this study, during 2 years from 14 flocks of commercial layer in Tehran province, 2685 serum samples and 2380 larynx swap samples were taken from day one up to 11 months old in 45 day periods and the serological test by RSA and Elisa routes and the bacteriological test using standard route were done for Mycoplasmas. The serology results using RSA route showed the 20% of the samples were contaminated to Mycoplasma gallisepticum while contamination to Mycoplasma synoviae was 24.05% which this rate more exactly shows respectively 10.12 and 27.92% of the flocks were contaminated to Mycoplasma gallisepticum during rearing periods. In rearing and yielding periods the contamination to Mycoplasma synovie was obtained 15.81 and 30.67% respectively. In Elisa route 15.91% of the chicks were contaminated to Mycoplasma gallisepticum and 13.81% to Mycoplasma synoviae. According to bacteriological results 76.89% of the samples had produced Mycoplasmic colonies which 3.78% of them were recognized Mycoplasma gallisepticum and 54.09% Mycoplasma synoviae. Control and prevention of this disease in poultry industry and especially in commercial layers needs a substantial, national and completely applied planning and decision.
Key word: Mycoplasma,layer , Poultry,Tehran.

Detection of Eimeriaspeciesinbroilersandlayer chickenswithclinical symptomsandpathologyin Tehran and Alborz provinces

Mohammadi A.R[1]*, Motamedi.G[2],Eslampanah, M[3]
1:Tehran Agricultural Research Centre, Iran;*
2,3:Razi vaccine and serum research Institute, Karaj, Iran
***:Corresponding author's email: ar.mohammadi@areo.ir**

Coccidiosis is an enteric disease that produces by Eimeria protozoa (phylum: Apicomplexa).It is the most important disease in poultry in the world. Survey on distribution of Eimeriaspecies requirescontinuous study in poultry flocks.
Inthisstudy, prevalence ofEimeriaspecies in litter of broilersandlayer farms in Tehran and Alborzprovinces were carried out. Litter samples, including: 354 broiler and 282layingflocks with a numberofsuspectedchickens with pre-clinical symptoms were collectedtoexamine gross and lesions in carcass.Oocytes were separated from feacal samples and analyzed morphologically.
The results showed three species of Eimeria including: tenella, maxima and acervulina in broiler with amount of 25.55%, 31.39% and 14.77%, respectively, and in poulet in addition to these three species mentioned above, the Eimerianecatrixwith amount of 21.51% ، 20.64% ، 8.33% and 1.03% respectively.
Theseresultsshowed, in addition to the use of anti- coccidiosisdrugs, the use of vaccine, based on the dominant species seems essentialin this area.
Keywords: Coccidiosis-apicomplexa-morphology–oocyte

Evaluation of some chemical and microbial factors of broiler farms drinking waters in Oshnavieh city- Iran

AbdollahMangourKurdistani[1], Moslem NeyrizNaghadehi[2*], Mehdi Rezaee[3]

[1] Graduated Veterinary Medicine,Veterinary Medicine Faculty,Urmia Branch, Islamic Azad University, Urmia, Iran.
[2] Assistance Professor ofFood Hygiene and Quality Control Department,Veterinary Medicine Faculty, Urmia Branch, Islamic Azad University, Urmia, Iran.
[3] Assistance Professor ofClinical Science Department,Veterinary Medicine Faculty, Urmia Branch, Islamic Azad University, Urmia, Iran.
[*]Correspounding author: mnn.uiau@yahoo.com

Objectives: access to clean water, free from any chemical and microbial contaminants is a requirement of poultry breeding industry. Poor water quality causes poultry dysfunction and reduces the effectiveness of vaccines and drugs used in water supply systems. Water quality varies in different geographical areas, so it is necessary to evaluate its quality.
Material and Methods:in this survey some chemical (pH, total hardness and total dissolved solids) and microbial (total coliform, fecal coliform and *E. coli*) quality parameters of 12 broiler farms drinking waters of Oshnavieh city were evaluated during the spring and summer of 2014.The pH, total hardness (TH) and total dissolved solids (TDS) parameters using an electric pH meter, titration with EDTA in the presence of Eriochrome black T indicator and evaporation on a boiling water bath were analyzed respectively. Microbial parameters using three tube MPN methods were determined.
Results and Conclusion: the values of pH and TDS parametersof Oshnavieh city broiler farms drinking waterswere within the acceptable range, but the amount of TH was greater than the maximum acceptable level.The amount of total coliform in drinking waters of 2 farms was above the maximum acceptable level. Also *E. coli*in drinking watersof 4 farms identified.It can be concluded that the TH and microbial quality parameters values of Oshnavieh city broiler farms drinking watersare undesirable. Therefore using a water softener and drinking water chlorination is recommended.
Keywords: Chemical quality, Microbial quality, Drinking water of broiler farm, Oshnavieh city- Iran

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A Survey to Examine Candida Transmission through Yolk Sac and Amniotic Sac in Chicken Embryos

Reza Amanollahi[1], Alireza Shafiian[2], Hadi Tavakoli[3], Amin Derakhshanfar[4], Peyman Nakhaee[1*], Seyed Hassan Mirarab Razi[1]

[1] Resident of Avian Diseases, School of Veterinary Medicine, Shiraz University, Shiraz, Iran
[2]School of Veterinary Medicine, Shahid Bahonar University of Kerman, Kerman, Iran
[3]Department of Avian Diseases, School of Veterinary Medicine, Shahid Bahonar University of Kerman, Kerman, Iran
[4] Center of Comparative & Experimental Medicine, Basic Ssciences in Infection Diseases Research Center, Shiraz University of Medical Sciences, Shiraz, Iran
*** Corresponding Author: pmnakhaei@gmail.com**

Objectives: *Candida albicans*, a fungus of zoonotic importance, is both the human commensal yeast and the primary causative agent of candidiasis. Candidiasis encompasses infections ranging from superficial, such as oral and vaginal thrush, to systemic and potentially life-threatening diseases. Use of appropriate infection models can be very helpful in investigating host-pathogen interaction, pathogenicity, virulence attributes of pathogenic fungi, and therapy studies. Embryonated chicken eggs provide an alternative in vivo infection model.
Materials & Methods: In the present study, systemic candidiasis was induced in chicken embryos by yolk sac and amniotic inoculations of *Candida albicans*. Then the embryos were histopathologically analyzed to evaluate the induced infection and pathologic lesions of *Candida albicans*. In the first step, the *Candida* strains were subcultured once on YPD agar. 20 mL liquid YPD was inoculated with a single colony and incubated. 10 mL culture was harvested by centrifugation. The cell number was determined with a Neubauer counting chamber after being resuspended in cold PBS. The fertilized embryonated eggs were divided into four groups of 20 eggs each, including two treatment groups and two control groups. 0.4 ml of distilled water was injected into the yolk sac of each egg belonging to control group A and into the amniotic sac of each egg belonging to control group B.0.4 ml of *Candida* inoculum containing 1×10^5 cells was injected into the yolk sac of each egg belonging to treatment group C and into the amnion sac of each egg belonging to treatment group D. At the end of experiment, on day 18 of incubation, the eggs were removed from the incubator. For histopathology studies the Paraffin-embedded specimens separately stained with Hematoxylin and Eosin (H&E) and Periodic Acid-Schiff (PAS) Staining.
Results & Conclusions: A few embryos of the control groups developed small hemorrhage due to slight trauma in drilling. Otherwise no lesions were noted. Both infection routes (treatment groups C and D) resulted in the same lesions and no significant difference was observed between treatment groups. The histopathologic lesions were mainly focused in liver, kidney and lung. Meanwhile no gross lesion was seen in any of the infected tissues. According to lack of researches studying these routes of infection, this study cannot be compared with absolutely similar studies, but this study shared several similarities with the study of Jacobsen et al in which the infection was induced through CAM, and systemic dissemination of *Candida albicans* was confirmed by liver and kidney lesions.
Keywords: *Candida albicans*, embryonated eggs, histopathologic, yolk sac, amnion sac

Effects of *Saturejahortensis* essential oil in combination with nisin on the growth of *Staphylococcus aureus* in minced chicken meat during storage at refrigerator

MehranRezaee[1], Moslem NeyrizNaghadehi*[2]

[1] *Graduated Veterinary Medicine,Veterinary Medicine Faculty,Urmia Branch, Islamic Azad University, Urmia, Iran.*
[2] *Assistance Professor ofFood Hygiene and Quality Control Department,Veterinary Medicine Faculty, Urmia Branch, Islamic Azad University, Urmia, Iran.*
*Correspounding author: mnn.uiau@yahoo.com

Objectives: essentialoilsof some plants andbacteriocinsare naturalantimicrobial agentsforenhancing thedurabilityand inhibition ofpathogens infoods. *Staphylococcus aureus*is an important pathogenic agent and cause skin infections and food poisoning inhumans. Minced meat and cured meat productsaremajor sources of*S. aureus*transmission to humans.In these research effects of *Saturejahortensis* (savory)oil, nisin and mixture of savory oil and nisin (savory oil-nisin) on the growth of *S. aureus*in minced chicken meat during 10 days of storage at refrigerated temperature was studied.
Material and Methods: preparation of the chicken minced meat containing *S. aureus*, various concentration of savory oil (100, 200 and 400 ppm), nisin (100, 200 and 400 i.u/g) and savory oil-nisin, counting of*S. aureus*, performance of standard plate count (SPC) and pH measurement on different storage days at refrigerator (zero, 3, 7 and 10) were the methods used in the study.
Results and Conclusion: various concentrations of each treatments reduced the count of *S.aureus*, SPC and pH value significantly ($p<0.01$). Also the concentration of 400 ppm or i.u/gin each treatmentwas the most effective concentration in decreasingthe number of *S. aureus*, SPC and pH value. Comparison of the S. *aureus* count, SPC and pH value between the different treatments showed that only *S. aureus* count has significant difference between treatments. Also combination of savory oil with nisin was the most effective treatment in reducing the count of *S. aureus*. Therefore, using the mixture of savory oil and nisin in meat and meat product to inhibition of*S. aureus*is recommended.
Keywords: *Saturejahortensis*essential oil, nisin, *Staphylococcus aureus*, minced chicken meat

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Case Report : Drug toxicity of multivitamins in a quail

Sheibani Hasan[1], Mahmudi Mostafa[2*],Fatemi Hanieh[2], Rohani Ehsan[2],Salarpour Maryam[2]

[1]*Faculty of Veterinary Medicine, Department of Clinical Science, Shahid Bahonar University of Kerman, Kerman, Iran*
[2] *Undergraduated Student, Faculty of Veterinary Medicine , Shahid Bahonar University of Kerman,Iran*
Corresponding author's email: mostafa.mahmoodi1992@gmail.com

Objective:in drug toxicity is too much of a medication in the bloodstream. The effects of the medication are more pronounced at toxic levels, and side effects may be severe. Toxicity may result when the dose is too high, or it may result when the liver or kidneys are unable to remove the drug from the bloodstream. Many commonly prescribed medications can accumulate in the bloodstream and result in toxicity. Symptoms of drug toxicity depends on the drug taken. Symptoms of drug toxicity can be broken down into: symptoms of GHB, symptoms of hallucinogens, symptoms of narcotics,sedatives,stimulants,Cloudy urine ,Irregular heartbeat , Muscle pain ,burning skin, or rash ,Diarrhea, possibly bloody and etc. The common ingredients in multivitamins include ascorbic acid (vitamin C), cyanocobalamin (vitamin B12), folic acid, thiamine (vitamin B1), riboflavin (vitamin B2), niacin (vitamin B3), biotin, pantothenic acid, pyridoxine (vitamin B6), calcium, phosphorus, iodine, iron, magnesium, copper, zinc, and vitamins A, D, and E. Among these ingredients, iron and vitamins A and D may cause significant systemic signs. Acute ingestion of other listed ingredients in companion animals can result in self-limiting GI upset (eg, vomiting, diarrhea, anorexia, lethargy).
Case presentation: 15 two-month-old quail egg producer that was kept in bed in Shiraz and Kerman were brought and kept for about 20 days and several vitamin were injected. The first period multi-vitamin, amino acid were used and 5 days after that multi vitamin AD3E. The kidney of quail was very congested with necrosis and nephrosis.
conclusion& Results : this etiology and pathogenesis of Drug toxicity of multivitamins in quail happens when the dose is too high . In the first period the kidney had necrosis and the second period the kidney showed nephrosis.Therefore a high intake of multivitamins inquail caused drug poisoning.
keywords: quail , drug toxicity , multivitamins , kidney

Case Report of AnkylosingSpondylitis in a broiler breeder chicken caused by enterococcus cecorum

Sheibani Hasan[1], Mahmoudi mostafa[2*], Fatemi hanieh[2], Rohani Ehsan[2], Salarpour Maryam[2]
[1]*Faculty of Veterinary Medicine, Department of Clinical Science, ShahidBahonar University of Kerman, Kerman, Iran*
[2]*Undergraduated Student, Faculty of Veterinary Medicine ,ShahidBahonar University of Kerman,Iran*
Corresponding author's email: mostafa.mahmoodi1992@gmail.com

Objectives: Ankylosing spondylitis (AS) is a chronic, inflammatory, rheumatic disease involving primarily the spine and sacroiliac joints. Patients with symptomatic AS lose productivitydue to work disability and unemployment, have a substantial use of healthcare resources, andreduced quality of life. The pathogenesis of AS is poorly understood.
Case presentation: Affected bird rested on hocks and caudal abdomens with legs extended forward and was unable to stand or walk. Necropsy examination of affected bird revealed firm to hard inflammatory masses involving the vertebral bodies at the level of the free thoracic vertebra that bulged dorsally and compressed the spinal cord. When opened, lesions contained pale, tan to yellow caseonecrotic material. Microscopically, necrosis and fibrinoheterophilic spondylitis with intralesional gram-positive bacteria were seen.
Conclusion& Results: Bacteraemia and generalized infection appear to be important steps in the pathogenesis of Enterococcus cecorum infection in broilers. Furthermore, this disease causes economic losses for the farmer not only due to an increase in flock mortality, but probably also through substantially higher condemnation rates at the slaughterhouse. It was speculated that the broilers were infected via the respiratory tract as this flock had lower footpad scores likely the result of drier litter. The latter may have led to higher dust concentrations and thus airborne Enterococcus cecorum.
Keywords: AnkylosingSpondylitis , Enterococcus cecorum , Broiler , Spinal cord

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Etiological evaluation of the crop fistulae in psittacine birds were referred to the Iranian veterinary clinics

TavakkoliHadi[1] ,MahmoudiMostafa[2*] , FatemiHanieh[2], SalarpourMaryam[2], Rohani Ehsan[2]
[1]*Faculty of Veterinary Medicine, Department of Clinical Science, ShahidBahonar University of Kerman, Kerman, Iran*
[2]*Undergraduated Student, Faculty of Veterinary Medicine ,ShahidBahonar University of Kerman,Iran*
Corresponding author's email: mostafa.mahmoodi1992@gmail.com

Objectives: The crop is an expansion of the cervical esophagus that functions as a food storage organ. The crop has varying degrees of development in different species. Parrots have well-developed crops that lie at the caudal cervical esophagus. The crop is very susceptible to injury. This study focus upon the etiological evaluation of the crop fistulae in psittacine birds were referred to the veterinary school of ShahidBahonar university.
Material &Method: Crop fistulae was seen most commonly in neonates, were referred for clinical investigation. Such injury was often the results of improper or careless gavage tube feeding, consumption of excessively hot food items, trauma, foreign body ingestion and animal bites, respectively. Crop fistulae was also occurred when food was warmed in a microwave oven and not thoroughly mixed. Microwave ovens do not heat food uniformly and generate areas where the food is excessively hot. The bird with a crop fistula was presented with, lethargy, weight losses and subcutaneous pockets of food. The feathers surrounding the fistula was usually matted with dried food.
Immediate treatment consists of removing the causative agents, supportive therapy, administration of antifungal medication and a systemic antibiotic. The feeding regimen was changed and small frequent feedings have been used to minimize the stretching force placed on the crop. In severe cases, the surgical technique was also applied.
Results & Conclusion: In conclusion, crop fistulae was seen most commonly in neonates being hand-fed, because the crop of neonates was more fragile and susceptible to injury than the adult crop. This allows food to escape from the crop and collect under the skin, creating an abscess and potential toxemia. Early diagnosis and treatment are essential for optimum recovery.
Keywords:crop fistulae ,neonates,psittacine birds,cervical esophagus

Case Report of Myopathy of the Deep Pectoral Muscle in broiler chicken

Sheibani Hasan [1], SalarpourMaryam [2*] , RohaniEhsan [2], Fatemi Hanieh[2] , Mahmoudi Mostafa[2]
[1]*Faculty of Veterinary Medicine, Department of Clinical Science, Shahid Bahonar University of Kerman, Kerman, Iran*
[2] *Undergraduated Student, Faculty of Veterinary Medicine , Shahid Bahonar University of Kerman,Iran*
Corresponding author's email: salarpoor.m@gmail.com

Objective: Myopathy was first identified in adult breeding turkeys in Oregon State. It has since been seen in turkeys, in broiler parent chickens and also in large broiler chickens in various places. It does not usually cause any mortality or obvious clinical signs and so it is usually identified after slaughter. It is caused by a reduction in the blood supply to the deep pectoral muscles. Andpost mortem lesion is**:**Acute or chronic necrosis of the deep pectoral muscle on one or both sides. If recent, the muscle may be swollen and pale, with edema within it and on its surface. If the condition is of over 7 days duration the muscle is dry and often shows greenish tinges. It may also start to be enclosed in a fibrous capsule. In very long duration, it may become a healed scar.
Case presentation: after a control diet in broiler chicken, carcasses were opened and after opening the pectoral muscle, pectoral muscle and supra coracoid muscle were observed .The color had changed from pink to green. This color change also had penetrated deep into pectoral muscle.
Results &Conclusion: Deep pectoral myopathy (DPM) is a degenerative muscle disease of heavy chickens and turkeys commonly referred to as 'Green Muscle Disease'.This lesion in this case may be the effect of nutrition and environment. This myopathy is suspected to be resulted in from antibiotic injections and vitamin E and selenium insufficiency.
Keywords: Myopathy,pectoral muscle,broiler chicken,green muscle disease

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Coli septicemia incommercial partridge chicks: the most common causes of mortality in Iranian partridge chicks after hatching.

TavakkoliHadi[1],SalarpourMaryam[2*],MahmoudiMostafa[2] , RohaniEhsan[2], FatemiHanieh[2]
[1]*Faculty of Veterinary Medicine, Department of Clinical Science, ShahidBahonar University of Kerman, Kerman, Iran*
[2]*Undergraduated Student, Faculty of Veterinary Medicine ,ShahidBahonar University of Kerman,Iran*
Corresponding author's email: salarpoor.m@gmail.com

Objective: Raising partridge is an enjoyable hobby and profitable business in many countries. The objective of this study was to etiologically evaluatethe most common causes of mortality in commercial chucker partridge chicks after hatching. 10-day old commercial partridge chicks were referred to the clinic of veterinary school of ShahidBahonar University.
Material & Method: The remarkable clinical signs in these birds were sudden death which occurred in 25 percent of chicks after hatching. All affected birds, died within 24-72 hours. The chicks that didn't die showed depression, weakness, anorexia, dropping of the wings, incardination and diarrhea. In chicks that died very suddenly, no gross lesions were seen. In some cases the pericardial sac was full of fibrinous exudates and the liver was congested. Some kidneys were swollen and some were pale. The fecal samples were collected from intestinal content of euthanized chicks. Blood heart and liver were collected aseptically for further investigation.
Microscopic examinations of the fecal smears demonstrated the dominant presence of gram negative rod-shaped bacterium. Bacteriological culture of the heart blood and liver confirmed the coli septicemia and the bacterium were isolated in profuse form from those affected organs.
Early mortality of chicks is caused mainly by *Escherichia coli* and staphylococcal infections. Initial exposure to pathogenic E. coli may occur in the hatchery from infected or contaminated eggs, but systemic infection usually requires predisposing environmental or infectious causes.
Results &Conclusion: This findings showed that coli septicemia is a very important disease in the chicks of game birds and must be controlled by using appropriate methods such as Vigorous sanitation program ,avoiding stress and immunosuppression, Control predisposing infections, and other environmental factors that spread disease.
Keywords:hatching, Coli septicemia, commercial partridge chicks, Anorexia

Study of Japanesequail[s] blood Glucose changes after consuming different amount of mustard seed

Nazem Mohammad Naser[1], Salarpour Maryam [2*], Mahmoudi Mostafa[2] ,FatemiHanieh[2], Alavi safa[2] , Rohani Ehsan[2]

[1] Assistant professor, Department of Basic Sciences, Faculty of Veterinary Medicine, ShahidBahonar University of Kerman, Kerman, Iran.

[2] Under graduate student, Faculty of Veterinary Medicine, ShahidBahonar University of Kerman, Kerman, Iran

Corresponding author's email: **salarpoor.m@gmail.com**

Objectives: Glucose is the most important energy producer of mammals' body cells. Also, this food source is important for birds. The purpose of this study is evaluating possible changes in blood Glucose level after adding the charlock seed processed with iron sulfate to the diet

Materials & Methods: For this purpose, 420 one-day quails accidentally divided to 7 groups, in stance and treatment. All the groups fed from basis diet but treatment groups number 2, 3, 4 received in order 5,10,15% of mustard seed. Treatment group 5, 6, 7 in addition to treatments group normal diet, received 1% iron sulfate. At the end of 35 days, 2cc blood was taken from the wing vein of quails and the blood glucose was measured.

Conclusion: the highest glucose level was related to treatment group number 5 and the lowest glucose level was related to the treatment group number4.

Results: It seems that using unprocessed mustard seed in diet causes decrease in weight of quails and is one of the possible reasons for increasing blood urea.

Keywords: Mustard seeds,Blood glucose, Japanese quail,Iron sulfate

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Invitro study on antibacterial effects of cinnamon ethanolic extract against *Staph. aureus* and *E. coli*

PouyanHoushmandpour[*1], Masood Khakzadihe[2], Adel Feizi[2]

Department of Pathobiology, Tabriz Branch, Islamic Azad University, Tabriz, Iran.

Department of Clinical Sciences, Tabriz Branch, Islamic Azad University, Tabriz, Iran.

Recently increasing concern about safety of food has led to studying and using natural antimicrobials such as herbs, spices and etc, to control food born pathogens that can be a source of diseases. Cinnamon is a small evergreen tree, about 10 to 15 meters tall belongs to the family *Lauraceae.* For this study 95% ethanolic extract of Cinnamon used as extract. 0.5 ml of Dimethyl Sulfoxide was poured to 9 experimental tubes. By 0.5 ml extract transferring, serial dilution were prepared. For antibiogram test we designed 4 disks per culture plate for each dilution that on of them was control disk. Staphylococcus aureus (PTCC1431) and Escherichia coli (PTCC1399) were used for research. There were low antibacterial effects of Cinnamon on Staph. aureus and E. coli bacteria with 95% ethanolic extract. There were inhibition zones on ½, ¼ and 1/8 Dilutions for Staph. aureus and E. coli. In conclusion the ethanolic extract of Cinnamon is not useful for controling these bacteria population.

Key words: Cinnamon, Ethanolic extract, Staphylococcus aureus, Escherichia coli, Antibiogram test

Case Report ofmyxoma in a Jiroftian bird (*grayfrancolin*)

SheibaniHasan[1] ,FatemiHanieh[2*],SalarpourMaryam[2] , MahmoudiMostafa[2],RohaniEhsan[2]
[1]*Faculty of Veterinary Medicine, Department of Clinical Science, ShahidBahonar University of Kerman, Kerman, Iran*
[2]*Undergraduated Student, Faculty of Veterinary Medicine ,ShahidBahonar University of Kerman,Iran*
Corresponding author's email: haniehfatemi@yahoo.com

Objective: Myxoma was reported to be extremely rare in birds. Mature and old animals were observed to be the most affectedanimalsbytheneoplasm. Early slaughtering is probably the cause of rare incidence of neoplasm. The neoplasm was reported in heart,lungs, spinal canal,skin, skeletal muscle, subcutaneous. **Case presentation:** A mass was detected on the left side of the crop of a 19-month-old jiroftian bird (*gray francolin*) that was referred to Shahidbahonarveterinary hospital from jiroft. The mass was surgically excised. Macroscopically, the excised mass, 12 × 8.0× 5.0cm in size, was ovoid-shaped with a smooth surface and a few lobules. Microscopically, the individual neoplasm cell was stellate or fusiform in shape and the cell nucleus was round, ovoid or elongated, with multiple nucleoli. No hyper cellular or pleomorphic areas were identified and no mitoses were observed. The mass was myxoma according to the macroscopic and microscopic results of this study.**Results & Conclusion:**The neoplasm was detected on the left side of the crop (related with subcutaneous connective tissue) in this case .The nuclei of these cells are generally round or ovoid. Myxoma is reported to be a fibroma and mucin in the intercellular matrix is the chief feature that distinguishes myxoma from fibroma .There are hypercellular or pleomorphic areas and mitoses in myxosarcoma versus myxoma. However, no hypercellular or pleomorphic areas and mitoses were identified in the case. Because of all these findings, the mass was thought to be a myxoma.

key words: myxoma , neoplasm , *Gray francolin* , crop

Effects of the in ovo injection of 25-hydroxycholecalciferol on the yolk characteristics of chicken embryos

Nazem Mohammad Naser[1],Fatemihanieh[2*], MahmoudiMostafa[2], Salarpour Maryam[2], RohaniEhsan[2]
[1] *Assistant professor, Department of Basic Sciences, Faculty of Veterinary Medicine, ShahidBahonar University of Kerman, Kerman, Iran.*
[2] *Under graduate student, Faculty of Veterinary Medicine, ShahidBahonar University of Kerman, Kerman, Iran*
Corresponding author's email: haniehfatemi@yahoo.com

Serum concentrations of 25-hydroxycholecalciferol [25(OH)D3] in broiler embryos at 19 d of incubation (doi) have been shown to increase 3 times by the in ovo injection of 0.60 μg 25(OH)D3 on 18 doi. In this trial, effects of the injection of 25(OH)D3 at 18 doi on the yolks and sera of male and female Ross × Ross 708 broiler embryos were assessed. On 18 doi, embryonated eggs that were set in a single stage incubator were assigned to 6 replicate trays within each of 2 injection treatment groups. Treatments included those injected with 100 μL commercial diluent (control) and those injected with 0.60 μg 25(OH)D3 in 100 μL commercial diluent. On 19 doi, embryos and their yolk sacs were extracted for determination of sex, yolk weight, BW, serum CA and phosphorous concentrations, and yolk CA, phosphorous, moisture, dry matter, and lipid concentrations. The weight of female embryos with their attached yolk sacs as a percentage of set egg weight was greater than that of males (P = 0.03). There were treatment × sex interactions for the weight of embryos with their attached yolk sacs relative to 19 doi egg weight (P = 0.05) and for yolk CA concentration (P = 0.004). In eggs that received 25(OH)D3, the weight of female embryos with their attached yolk sacs relative to 19 doi egg weight was higher than that of males (P = 0.005), and percentage yolk CA was higher in control eggs containing female embryos in comparison to those containing males (P = 0.007). An injection of 0.60 μg 25(OH)D3 at 18 doi eliminated yolk CA differences associated with embryo sex, suggesting that 25(OH)D3 may influence sex-related differences in the rate of yolk CA absorption by broiler embryos and may be related to subsequent sex-related differences in posthatch bone strength.

Key words: 25-hydroxycholecalciferol, broiler, calcium, embryo

Etiological evaluation of the most common causes of poor fly and racing performance in pigeons referred to the veterinary school of ShahidBahonar University

Tavakkoli Hadi[1] ,Fatemi Hanieh[2*] ,Rohani Ehsan[2], Mahmoudi Mostafa[2],Salarpour Maryam [2], Alavi Safa[2]
[1]*Faculty of Veterinary Medicine, Department of Clinical Science, ShahidBahonar University of Kerman, Kerman, Iran*
[2]*Undergraduated Student, Faculty of Veterinary Medicine , ShahidBahonar University of Kerman,Iran*
Corresponding author's email: haniehfatemi@yahoo.com

Objective: Raising pigeon is an enjoyable hobby and profitable business in many countries. The objective of homing pigeon fanciers is to achieve good results with their birds in fly and competition races. Pigeons are susceptible to many pathogens and managements problems. These factors can reduce the bird's performance. This study focus upon thee etiological evaluation of the most common causes of poor fly and racing performance in pigeons were referred to the veterinary school of ShahidBahonar University
Material & Method: Pigeons were evaluated and complete clinical and paraclinical examination was done. In some cases necropsy, cytological, serological, histopathological and parasitological examinations were also done. Many infectious and non-infectious factors were involved in pigeons referred for clinical investigation. Viral disease such as paramyxovirus, pox virus and adenovirus were often the primary cause of poor fly performance. Paramyxovirus infection was diagnosed based on clinical signs (nervous signs and polyuria), microscopic lesions (nephritis) and serological examinations (HI test). Pigeons with poxvirus infections exhibited cutaneous and diphtheroid forms of typical pox. Adenovirosis was strongly suspected on a clinical basis (sudden appearance, diarrhea and vomiting) and intra-nuclear inclusion bodies in the liver. Parasitic disease, trichomoniasis and worm infestations, was the secondary cause of poor fly performance especially in summer. Trichomonads were seen in crop samples from affected pigeons. Nematode and cestode infestations were diagnosed by found parasite during necropsy or demonstrating parasite eggs in the feces. Non-infectious factors such as poor management, overcrowded and unfavorable environmental conditions were the latest cause of poor fly performance. These factors predisposed pigeons to infection especially with respiratory pathogens.
Results & Conclusion: In conclusion, it must be noted that pigeons suffering from bacterial, viral, fungal, parasitical and Non-infectious diseases. Fly and racing performances of pigeons presenting these diseases are often poor. Good prevention strategies, early diagnosis and treatment are essential for optimum results in fly and race**.**
KeyWords: Pigeon, Fly performance, Management, Parasitic disease, Viral disease.

CaseReport of a Mynah (*Acridotheres tristis*) with hepatosplenomegaly causes byIsospora serini

Sheibani Hasan[1], Rohani Ehsan[2*], Salarpour Maryam[2], Mahmudi Mostafa[2], Fatemi Hanieh[2]
[1]*Faculty of Veterinary Medicine, Department of Clinical Science, Shahid Bahonar University of Kerman, Kerman, Iran*
[2]*Undergraduated Student,Faculty of Veterinary Medicine, Shahid Bahonar University of Kerman,Iran*
Corresponding author's email: ehsanrohani777@yahoo.com

Objectives: The genus Isospora is the most common coccidian parasite in passerine birds as more than 90% of all coccidia species infecting wild passerine birds belong to this genus and nearly each investigated passerine bird species is a host of at least one isosporan parasite species .Isospora species do not produce disease in horses, domestic ruminants, rabbits, or domestic poultry, and reports of isosporan oocysts in the feces of these hosts probably represent pseudoparasites that originated in feed
contaminated with wild-bird feces.
Case presentation: 10-month-old, female, mynah (Acridotheres tristis) was referred with a history of multiple fractures of the frontal bone surrounding the right orbit with associated hemorrhage in the subcutis, frontal bone and right cerebral hemisphere. The liver was dark red, enlarged, and extended 1.5 cm caudal to the keel. Throughout the liver were multifocal, up to 0.2 cm in diameter, tan foci which replaced 30% of the parenchyma. The spleen was markedly enlarged (4.2 x 1.0 x 0.8 cm), white-tan, multilobulated and soft. The bird was in good body condition and there were no lesions on either leg.
Conclusion: The bird was probably weak from the protozoal infection, caught it's leg in the rodent trap and then fell. The head trauma secondary to the fall, combined with the protozoal infection caused the bird's death. Sporulated oocysts that have two sporocysts, each with four sporozoites (Isospora morphology) have been found in similar cases.
Results: Atoxoplasma sp. (previously known as Toxoplasma, Lankesterella sp. and Isospora serini) have been found in many species of passerine birds and have been previously described in sparrows, canaries, grosbeaks, warblers, goldfinch, siskins and mynahs.
Keywords: Mynah , Hepatosplenomegaly , Atoxoplasma , Isospora serini , protozoa

Effect of blood urea on weight,after adding different levels of mustard seed to diet in the Japanese quail

Nazem Mohammad Naser[1], Rohani Ehsan[2*], Asadabadi Amir[2] , Abdolinejad Vesal[2] , Khaleghi Mahsa[2]
[1] *Assistant professor, Department of Basic Sciences, Faculty of Veterinary Medicine, Shahid Bahonar University of Kerman, Kerman, Iran.*
[2] *Under graduate student, Faculty of Veterinary Medicine, Shahid Bahonar University of Kerman, Kerman, Iran*
Corresponding author's email: ehsanrohani777@yahoo.com

Objectives:most of the blood urea Obtained from protein metabolism . Increase in urea through different mechanisms causes weight loss. The objective of this study was to investigate the connection between blood urea Resulting from the use of different levels of mustard seed and also its effects on bird weight.
Materials & Methods: 420 healthy and one year old Japanese quail accidentally divided into 7 groups (each 60).Quails in group 1 were fed a basal diet (control). Quails in groups 2,3 and 4 received in addition to basal diet, in order 5, 10 and 15 % mustard seeds (unprocessed diet). in groups 5 , 6 and 7 in addition to basal diet and mustard seed , quails received 1% iron sulfate (processed diet).At the end of 35 days , 2 ml blood from wing vein was taken and their blood urea was measured.
Conclusion: The results at the end of 35 days showed that using mustard causes increasinginblood urea in groups with unprocessed diet (2,3,4) , while in groups with processed diet, urea had a meaningful decrease even compared to the control group (specially in group 7 with 15% mustard seed + 1%). On the other hand Weight at day 35 revealed that groups with processed diet meaningfully more than groups with unprocessed diet ($p < ۰/۰۵$).
Results: It seems that using unprocessed mustard seed in diet causes decrease in weight of quails and isone of the possible reasons for Increased blood urea.
Keywords:mustard seeds , blood urea , Japanese quail , iron sulfate

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Effect of hen age and maternal vitamin D source on performance, hatchability, bone mineral density, and progeny in vitro early innate immune function

Nazem Mohammad Naser[1], Rohani Ehsan[2*], Salarpour Maryam[2], Fatemi Hanieh[2], Mahmudi Mostafa[2]
[1] *Assistant professor, Department of Basic Sciences, Faculty of Veterinary Medicine, Shahid Bahonar University of Kerman, Kerman, Iran.*
[2] *Under graduate student, Faculty of Veterinary Medicine, Shahid Bahonar University of Kerman, Kerman, Iran*
Corresponding author's email: ehsanrohani777@yahoo.com

The metabolite 25-hydroxy vitamin D3 (25-OHD) can complement or replace vitamin D3 in poultry rations, and may influence broiler production and immune function traits. The effect of broiler breeder dietary 25-OHD on egg production, hatchability, and chick early innate immune function was studied.We hypothesized that maternal dietary 25-OHD would support normal broiler breeder production and a more mature innate immune system of young chicks. Twenty-three-week-old Ross 308 hens (n = 98) were placed in 4 floor pens and fed either 2,760 IU vitamin D3 (D) or 69 μg 25-OHD/kg feed. Hen weights were managed according to the primary breeder management guide. At 29 to 31 wk (Early), 46 to 48 wk (Mid), and 61 to 63 wk (Late), hens were artificially inseminated and fertile eggs incubated and hatched. Chicks were placed in cages based on maternal treatment and grown to 7 d age. Innate immune function and plasma 25-OHD were assessedat1and4dpost-hatch on15 chicks/treatment. Egg production, hen BW, and chick hatch weight were not affected by diet ($P > 0.05$). Total in vitro Escherichia coli (E. coli) killing by 25-OHD chicks was greater than the D chicks at 4 d for the Early and Mid-hatches, and 1 and 4 d for the late hatch. This can be partly explained by the 25-OHD chicks from the Late hatch also having a greater E. coli phagocytic capability. No consistent pattern of oxidative burst response was observed. Chicks from the mid hatch had greater percent phagocytosis, phagocytic capability, and E. coli killing than chicks from Early and Late hatches. Overall, maternal 25-OHD increased hatchability and in vitro chick innate immunity towards E. coli. Regardless of treatment, chicks from Late and Early hens had weaker early innate immune responses than chicks from mid hens. The hen age effect tended to be the greatest factor influencing early chick innate immunity, but maternal 25-OHD also increased several measures relative to D.
Key words: broiler, 25-hydroxy vitamin D3, innate immune function, bone mineral density

Evaluation of Gastrointestinal Parasites in Native Turkeys of Amol, Iran

Samere Ghavami[1*] , Ammar Ramezani[2], Sepideh Falah[3],

[5]D.V.M., Ph.D. Student, Avian Diseases Research Center, School of Veterinary Medicine, Shiraz University, Shiraz, Iran.

[2]MS Student, Student of Veterinary medicine, Olom Tahghighat Branch, Islamic Azad University, Tehran, Iran.

[3]D.V.M, Graduated of Veterinary Medicine, Tehran university, Tehran, Iran.

***Corresponding author Email: ghavami.samere@yahoo.com**

Native turkeys are kept as domestic bird in rural environments and they can be infected with bacterial, viral and parasitic agents. *Capillaria* and *Ascaridia* are nematodes of small intestines of domestic birds such as turkey. Small intestine trematode of birds like echinostomiasis need intermediate hosts for evolution.*Raillietinatetragona* and *Raillietinaechinobothrida* are parasites in small intestines of birds. Histomonas and Eimeria are two important protozoan of the gastrointestinal tract of birds. These parasites can cause economic loss and create problems for turkey. The purpose of this study was to determine the genus and species, frequency and severity of gastrointestinal parasites. Gastrointestinal of 60 dead turkeys of Amol city were necropsied and examined. 36% of the samples were not contaminated and 64% of contaminated samples were infected with nematode, cestode, trematode and protozoan. Prevalence and parasite species, including: 15% *Capillaria*, 38% *A. gali*, 6.6% *R.tetragona*, 6.6% *R.echinobothrida* and 8% *Echinostoma,* 15% Eimeria, 3% Histomonas.

Key words: Native turkeys, Gastrointestinal Parasites, Amol

The effects of *Nano silver* on growth performance in broiler chicks

HosseiniS.A[1],AkradiL[2*],Djeddi A.N[3]

Undergraduate of veterinary medicine[1], department of pathobiology[2], department of clinical science[3],Faculty of Veterinary Medicine, IslamicAzadUniversity of Sanandaj, Sanandaj, Iran

Corresponding author's email:loghmanakradi@yahoo.com

Objectives: Nanotechnology is the most promising field for generating new applications inmost of science branches. Silver is known for its medicinal properties, especially as an anti-microbial agent, but it may be toxic when it is in ionic state. However the toxicity of Ag can be eliminated when used in nanoparticle form, thisResearch was carried out to investigate effects of colloiedalnano silver (nano particles) on the growth performance.

Materials and methods: The study included 240 1-day-old male (Ross 308) broiler chicks with 4 treatment and 2 control groups at the levels of 0ppm(control 1 with vaccine),0ppm(control 2 without vaccine) and each of the 4 treatments with dose of 2ppm that silver nano particles were added to the intake of water,

1-Treatment from one day to 42 with Nano and vaccine

2-Treatments from one day to 42 with Nano and without vaccine

3-Treatments from the 21 day to 42 with Nano and vaccine

4-Treatments from the 21 day to 42 with Nano and without vaccine

Each consisting of 4 replicates in completely randomized design (CRD) and 10 birds in each pen. Body weight, feed intake, feed conversion rate were measured and FCR calculated at 42 days of age.

This research was approved by faculty of veterinary medicine IslamicAzadUniversity, Sanandaj branch

Results & Conclusion: According to the obtained results, in spite of weight increasing and FCR decreasing in the treatments 1 and 2, analyzing the statistic data doesn't illustrate it meaningful (p>0/5).

Keywords: Nano silver, broiler chicks, vaccine, FCR, performance

The effect of Antibiofin®on immune response against Newcasttle disease vaccine in broiler chicken

Zahedzadeh M[1*]
Doctor Of Vetetinary Medicine (DVM) ۱
Corresponding author's email: mzahed22@gmail.com

Objectives: In order to study the effect of Antibiofin® on immune response against Newcastle disease vaccine in broiler chickens, 200 day-old broiler chicks, Rass strain, were purchased and 20 chicks randomly were bled for vaccination determination time and remaining chicks divided into 3 equal groups and each group divided into 3 subgroup of 20 chicks.
Materials & Methods: Chickens of groups one and two received 0.1% and 0.2% of Antibiofin® respectively in drinking water all over experiment. Chickens of group 3 were kept as control group and did not received Antibiofin®. All groups were vaccinated with live Newcastle vaccine (B1 strain) intraocularly and killed ND-AI (subtype H9N2) vaccine subcutaneously at neck back at 9 days. Ten chicks of each group were bled randomly and blood samples were collected before vaccination as well as on days 14, 21 and 28 post vaccination. Antibody titer against Newcastle disease vaccine was determined by HI test.
Results & Conclusion: The study showed that21 days after vaccination, group receiving Antibiofin®at0.2% concentration, showed specific increasing in antibody titer against Newcastle disease vaccine compared to the control group and group receiving Antibiofin0.1% ($P<0.05$) but at 14 and 28 days after vaccination, there was not any significant difference between each groups.
Keywords: Broiler chicks, Antibiofin®, thyme extract, Newcasttle vaccine.

Effect of different levels of whole wheat on performance and gut health of native laying hens on the organic standards

[1-2-] **Ali Emarloo[1], Reza Vakili[2], Iman Salamatian[3*], Mojtaba Kooshki[4]**
*[1]Khorasan Razavi Central Veterinary Laboratory, Veterinary Organization, Mashhad, Iran;[2]AssociateProfessor,Department of Animal Science,Kashmar Branch, Islamic Azad University,kashmar,**Iran;**[3]Undergraduate student of Veterinary Medicine, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Iran;[4]Undergraduate student of Veterinary Medicine, Faculty of Veterinary Medicine, Islamic Azad University, Garmsar Branch, Iran*
Corresponding author's email: iman.salamatian@gmail.com

Objectives: Developing organic poultry production is the only solution for growing number of consumers associating significant food quality, human health, natural environment and ethical (for example animal welfare and fair trade) benefits with organic foods. Distinguishing characteristics of Iranian native laying hens eliminate the need of appropriate breed for this aim. The purpose of this experiment was to investigate the effect of diets with different levels of whole wheat on performance and gastrointestinal health of Khorasan native laying hens on the organic standards.
Materials & Methods: Experiment was conducted as completely-randomized design (CRD) with 30 hens and 3 cocks which were allocated to 3 dietary treatments with three replicates per treatment and 10 hens and a cock per replicate. Whole grain wheat had a 0, 20 or 30% levels of the total whole grain wheat in the Wheat-soybean meal-based dietsin treatment groups W0, W20 or W30, respectively. Experiment was carried out between 18 and 30 weeks of age including three 28-days periods.
Results & Conclusion: No significant differences were found in eggproduction, egg weight,egg mass,egg shape index,feed intake ,daily weight gain,yolk index,shell strength, shell weight,yolk height and weight, coccidial infection, lactobacillus and coliform counts between treatments, however minimum coliform and oocyte count and maximum lactobacillus count were found in W30 treatment ($p<0.05$).Results of this experiment indicated that feeding diets containing whole wheat had significant effect onfeed conversion ratio in first period and the lowestfeed conversion ratiowas associated with W30 treatment($p<0.05$). Also Haugh unit, shell thickness andyolk cholesterol concentration were significantly affected by different levels of whole wheat. The concentration of yolk cholesterol in W30 treatment was significantly more than other treatments at the end of third period ($p<0.01$). Based on the findings of this experiment it could be deduced that feeding diets containing 30 % of whole wheat to native laying hens on the organic standards seems to has beneficial effects onfeed conversion ratio and egg quality.
Keywords: Organic poultry, whole wheat,egg production,gastrointestinal health, native laying hens

Combination of Thymol and Carvacrol against *Trichomonas gallinae*

MohaddesehAbouhosseiniTabari[1*], Mohammad Reza Youssefi[2]
1. *Faculty of Veterinary Medicine, Amol University of Special Modern Technologies, Amol, Iran*
Department of Pathobiology, Babol-Branch, Islamic Azad University, Babol, Iran.
***Corresponding Author: MohaddesehAbouhosseiniTabari**

Objective: The drugs of choice for the treatment of avian trichomoniasis are nitroimidazoles.Sub-therapeutic doses and preventiveuse of these drugs against trichomoniasis,resulted in emergence of resistant strains of*Trichomonas gallinae*since 1990.Plants and plant derived bioactive compounds can serve as alternative resources of antitrichomonal agents. In this study, we evaluated the effectof the main components of thyme essential oil,carvacrol and thymol against *T.gallinae*.
Material & Methods:*T. gallinae* were recovered by wet mount method from oropharyngeal lesions of infected native pigeons. In vitro assay was accomplished in sterile multi well plates containing 100 µl of tryptone/yeast extract/maltose (TYM)culture mediumcontaining 1×10^4 parasites incubated with predilutedmetronidazole,carvacrol and thymol to give final concentrations of 2.5, 5, 10,20 and 50 µg/ml for each of the test groups. Tween 20 (%0.01 of final concentration) was used as solubilization vehicle. Control wellsreceived 100µlofTween 20.In the next step, combination of carvacrol and thymol were used for evaluation of possible synergistic effect.The wells were examined with an inverted microscope every 24 h for 3 competitive days.The MIC was the lowest concentration of the drug in the well at which no motile parasite wasobserved.
Results: The 24h MIC of metronidazole was 20 µg/ml while for carvacrol and thymol were 10 µg/ml and 20 µg/ml, respectively. The 48h and 72h MIC of metronidazole was 5 µg/ml but these values for carvacrolwere 2.5 µg/ml. The 48h and 72h MIC of thymol were 10 and 5 µg/ml,respectively. The combination method showedthat a 1:4 thymol–carvacrol ratio produced a better antitrichomonal activity in comparison to other ratios.
Conclusion: Results of the present study revealed high antitrichomonal activity of carvacrol and showed that thymol–carvacrolcombination could represent a future alternative to therapeutic antitrichomonal agents.
Key words: Carvacrol, Thymol, Metronidazole, *Trichomonas gallinae*, Antitrichomonal.

Therapeutic Effects of Sulfaclozine on Intestinal Morphology and Oocyst Shedding in Chicken Experimental Coccidiosis

MohaddesehAbouhosseiniTabari[1*], Mohammad Reza Youssefi[2], Seyed Mohammad Hosseini[2]
1. *Faculty of Veterinary Medicine, Amol University of Special Modern Technologies, Amol, Iran.*
2. *Department of Pathobiology, Babol-Branch, Islamic Azad University, Babol, Iran.*
***Corresponding Author: MohaddesehAbouhosseiniTabari**

Objective: Sulphonamides were the first drugs used for systemic treatment and the prevention of bacterial infections. Sulfaclozine is an efficacious sulphonamide derivative with antibacterial and anticoccidial effects, and is commonly used for the treatment of various poultry diseases particularly coccidiosis.The present study was aimed at the investigation of the therapeutic effects of sulfaclozine on gut health and morphology also oocyst shedding in experimental coccidiosis.
Material & Methods: One hundered and fifty1-day-old Ross 308 broiler chicks were randomly divided in to three groups. Group one as negative control was not infected and was not medicated, group 2 as positive control was infected but not medicated and group 3 was infected and medicated. Chechens were infected to coccidiosis by inoculation of 0.5ml of mixture of sporulatedoocyst of four pathogenic species of *Eimeria*(3×10^4*E.tenella*, 3×10^4*E.necatrix*,4×10^4*E. maxima*, and 10^5*E.acervulina*) at the end of the 3rd week of age. In the 3rd group treatment with 50 mg/ Kg BW sulfaclozine in drinking water was administered one week post infection for 4 successive days. One day before initiation of treatments and in all days of treatment period and also till 5 days after the last administration, feces samples were taken for determination of oocysts per gram (OPG) byusing a Mc Master countingchamber. At the end of the experiment 10 birds of each group were sacrificed and pathologic examinations of intestinal tract were accomplished.
Results: Data obtained in this study showed that treatment with sulfaclozine resulted in significant reduction in oocyst shedding ($p<0.05$) and also schizogonia stage of protozoa in the intestine ($p<0.05$). Pathological examination of different parts of the intestinal tracts revealed that sulfaclozine led to significant amelioration in pathological lesions caused by coccidiosis. In deudenom, jejeunum, ilium and also secum and colon sections therapeutic effects of sulfaclozine and improvement of gut morphology were clearly observed.
Conclusion: Results of the present study showed that treatment with sulfaclozine in coccidiosis not only by decreasing oocyst shedding but also by improvement of intestinal health of infected birds will benefit poultry and poultry industry.
Key words: Sulfaclozine, Intestinal morphology, Oocyst shedding, Coccidiosis

Evaluation of Three Antibiotic Residues in Muscle and Liver Samples of Broiler ChickCarcasses Collected From Slaughterhouses of Lorestan Province

Goodarzi M[1,*], Zakian N[2], Sabet-Amal F[3], Nourmohammadi M[3]
[1]Zagros Poultry Slaughterhouse, Lorestan; [2]Lorestan Provincial Veterinary Service; [3]Lorestan Agricultural Insurance Fund
Corresponding author's email: masoudgm54@gmail.com

Objectives: Poultry products are popular among population due to their high availability, good performance and low cost, however, the vast and illegal application of many different antimicrobial and growth promoting agents in aviculture section to prevent illnesses and rapid weight gaining of chicks brought about new health threats for humans including unexpected spread of antibiotic resistant microbial strains in the environment and or growing incidence of malignant diseases. We aimed for tracking residues of three drugs, Bromhexine hydrochloride (BO); Chloramphenicol (CAP) and Nitrofurazone (NFZ), in the liver and muscle samples of poultry carcasses collected from slaughterhouses of the Lorestan province.
Materials & Methods: Solid-phase extraction, SPE, followed by reversed phase high performance liquid chromatography, HPLC, methods were used for simultaneous detection of the 3 drugs in a single run. Totally 80 liver and 80 muscle (100 g) tissue samples from broiler chickens were randomly collected (5 samples per 1000 slaughtered carcasses). Chromatographic separation of the drugs was achieved on Wakosil II column using phosphate buffer and acetonitrile as mobile phase, (flow rate: 1 ml/min, injection volume: 10 ul). Calibration graphs were also plotted using different concentrations of the three agents.
Results&Conclusion: The mean concentrations of Bromhexine, Chloramphenicol and Nitrofurazone in the samples were as follows: liver: 250.4 ± 83.3; 199.5 ± 110.3; 632.8 ± 320.1, respectively, muscle: 202.8 ± 99.3; 450.3 ± 155; 133.4 ±44.4 respectively. In collection, 55%, 15% and 44% of the liver samples had above permissible levels of BO, CAP and NFZ, respectively. The persent of positivity in muscle samples were similar to the liver, but mean tissue concentrations of Chl and Nf were significantly higher in muscle tissues compared to the livers.Auditory practices for better implementation of regulatory standards must be intensified and regulatory authorities should encourage poultry industry through proper measures for timely withdrawal of flocks from antibiotics.
Keywords: Aviculture; antibiotic, bromhexine hydrochloride, chloramphenicol, nitrofurazone, HPLC.

The Isolation of Antibiotic-Resistant Salmonella from broiler farm in babol

Hadi RohollahZade[1], HadiHaghbin NazarPak[2], SeyedMostafa Peyghambari[3], amin mirzazadeh[4], mohammadjafar Taebipour[4]

1-Postgraduate student of Avian Medicine, Department of Clinical Studies, School of Veterinary Medicine, Shiraz University, Shiraz, Iran
2- Faculty of poultry hygiene and diseases, college of veterinary medicine, Islamic Azad University Garmsar branch
3- Faculty of poultry hygiene and diseases, college of veterinary medicine, Tehran University
4- Postgraduate student of Avian Medicine, Department of Clinical Studies, School of Veterinary Medicine, Shiraz University, Shiraz, Iran
Corresponding author's email: h.rohollahzadeh@gmailcom

Introduction Salmonellosis is one of the most common and widely distributed foodborne diseases and there is also concern about increased antibiotic resistance when treating salmonellosis in human.The widespread use of antibiotics in poultry industry can be a possible cause for emergence of resistant bacteria that can transmit to humans through poultry products.Therefore, awareness of the prevalence of Salmonella in poultry farms, isolation of bacteria and determine antibiotic susceptibility of the isolates would be very important data about salmonella related public health concern.
Materials & Methods4 salmonella resistant isolates from 22 poultry farm determined with a panel of antimicrobial compounds by standard methods.
Results & Conclusion All isolates were resistant to ceftriaxone, erythromycin, vancomycin, clindamycin, penicillin, nalidixic acid and doxycycline.Andwere sensitive to cefazolin, gentamicin, ciprofloxacin, amoxicillin. The resistant of isolates to other antimicrobial compounds were variable as follows:3/4 of isolates were resistant toTetracycline and oxytetracycline,2/4 of isolates were resistant to trimethoprim-sulfamethoxazole, nitrofurantoin, streptomycin and furazolidone,and 1/4 of isolates were resistant to ampicillin, chloramphenicol, florfenicol, enrofloxacinLincospectin. Due to health problems caused by Salmonella in the country, comparing these results with data from human isolates would be an interesting issue related to public health.
Key words: Salmonella, antibiotic resistance, broilers, Babol

3D and 2D CT scan and Anatomic Study of the Scleral Rings in the *Buteobuteo*

Omid Zehtabvar[1*], Zahra Tootian[1], MajidMasoudifard[2], Somaye Davudypoor[2], Iman Memarian[3]
[1]*Department of Basic Science, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran.*
[2]*Department of Surgery and Radiology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran.*
[3]*Wildlife Veterinarian, Chief Veterinarian of Tehran zoo and Pardisan Rehabilitation Centre, Tehran, Iran*
Corresponding author's email: ozehtabvar@ut.ac.ir

Objectives: Scleral ossicles are rings of overlapping trapezoid-shaped membrane bones, which are embedded in the sclera surrounding the cornea beneath the conjunctival zone in the eyes of non-mammalian vertebrates. The shape of the eyeball in the birds is formed by scleral ossicles, which are visible by radiography. The Common buzzard (*Buteobuteo*) is one ofthe birds of prey of Iran, this species have a perfect vision because the special structure of the eyes. This study was done to give complete anatomic information and knowledge about the position of the Scleral ringin the Common buzzard. Another purpose is providing a normal CT vision that is useful for diagnosis of abnormalities.
Materials & Methods: In this study, plain CT scans of the cephalic region of 2Common buzzard were taken. All scans were obtained on a two detector scanner.In the anatomical study heads were dissected and scleral rings were cleaned.
Results & Conclusion: Each ring was consisted of 15 ossicles.Ossicles wererectangular (trapesoid) in shape and had two articular surfaces on the medial surfacenear left and right borders. These articular surfaces were provide articulation between each ossicles together. There were not any connections between rings and other bones of the skull. We saw rings and ossicles in the 3D and 2D CT scans and described the structure and position of them.In birds, the arrangement of the ossiclesin the scleral cartilage forms a groove in the concavity of theeye, which plays an important role in accommodating thecornea, as well as in its protection. These structures are delicate and have persistedthroughout the evolution of several vertebrates. The ossicles of fishesand birds can be considered homologous, although they arenot situated exactly in the same region and ossify differentlyin these two groups.These rings provide an attachment for the ciliary muscles, permittinggreater accommodation. They arelargest in owls and diurnal raptors and less developed inPsittaciformes and Anseriformes.The general morphological features of the Scleral rings of the Common buzzard were examined by CT images and macroscopically in this study. This is first 3D and 2D CT scan anatomical study of the Scleral rings in the *Buteobuteo*.Due to theefficacy of the Scleral rings on the accommodation, results of this study can be useful to diagnosis and Treatment of some eye problems.
Keywords: CT scan, Anatomy, Scleral rings, Common buzzard

Serological survey of Avian influenza(H_9N_2)in commercial farms in Varamin during 1394

Mofidi H[1], AttariyanKhosroshahy MS[1], Karimi A[2], Hashemi H[2], Nader Afif M[1]
[1]*Graduated from Faculty of Veterinary Medicine, Islamic Azad University, Karaj, Iran,* [2]*Shafa veterinary Hospital, Varamin, Iran*
Corresponding author's email:Dr.hamed2007@gmail.com

Objectives: Influenza is an acute respiratory disease caused by infection with influenza viruses. Avian influenza (AI) viruses are members of the family Orthomyxoviridae. AI is a contagious viral infection that can affect several species of food producing birds as well as pet birds and wild birds. AI viruses can be classified into two categories: low pathogenicity (LPAI) and highly pathogenic (HPAI) forms, based on the severity of the illness caused in birds.The aim of this study was to monitor mean antibody titer of influenza virus(H_9N_2) in commercial farms in Varamin using HI assays.
Materials & Methods: In this study, samples were collected from 30commercial farmsin Varamin. Blood samples were takenfrom the wing vein of each bird.The samples were transported to the laboratory of Shafa Veterinary Hospital in Varamin and were examined using the hemagglutination inhibition(HI) assay.
Results & Conclusion: In the present study, HI tests showed that the lowest and the highest mean antibody titer of AIwas5.9 withC.V 20% and 11.4 with C.V 6%,respectively.
Keywords: Avian influenza (AI), monitor, Haemagglutination inhibition (HI),Orthomyxoviridae,(H_9N_2),Varamin

CT Scan-Anatomic Study of theOrbitocranium, Interorbital and Optic Foraminaof the skull of the Long-legged buzzard (*BuetoRufinus*)

Omid Zehtabvar[1*], MajidMasoudifard[2], Somaye Davudypoor[2], SoroushBakhtiariRaad[1], Mohammad Babaei[1]
[1]*Department of Basic Science, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran.*
[2]*Department of Surgery and Radiology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran.*
Corresponding author's email: ozehtabvar@ut.ac.ir

Objectives: The bird's skull has numerous foramina through which cranial nerves, arteries, veins, and other structures pass. Because of this they have an important role in the function of these structures. Occurring trauma, inflammation, infection, tumor and others, near these foramina can affect them. The long-legged buzzard (*Buteorufinus*) is a bird of prey in the Buteo genus. It is similar in appearance to the rough-legged buzzard (*Buteolagopus*), but it is larger and more robust. This study was done to give complete anatomic information and knowledge about the position of the 3 important foramina of the skull in the long-legged buzzard. Another purpose is providing a normal CT vision that is useful for diagnosis of abnormalities.
Materials & Methods: In this study, plain CT scans of the cephalic region of 2 long-legged buzzard were taken. All scans were obtained on a two detector scanner. In the anatomical study heads were dissected and skulls were cleaned.
Results & Conclusion: A big oval shape foremen was seen on the interorbital septum that named interorbital foramen. Two orbitocranium foramina were placed between temporal, frontal and ethmoid bones caudoventral to the orbit on the both sides. Two optic foraminaon the both sides were seen between temporal and ethmoid bones on the caudomedial part of the orbit. CT images were compared with the anatomical samples and were labeled according to anatomic assessment.The anatomy ofthe cranial nerves and associated skullforamina is one of the most complex in the body. Someof the 12 cranial nerves are of greater clinical importancethan others. The cranialnerves are of soft tissuedensity, making them impossibleto visualize on CT images; they can be visualizedwith MRI,because of the higher contrast resolution onMRI. Nevertheless, CT allows detailed identification of the skull foramina and thus allows indirectvisualization of the emergence of cranial nerves fromthe skull base.The described method of CT examination of long-legged buzzard, especially concerning positioning, orientation of scans, scan parameters, in combination with the documentation of the normal foramina by means of CT images shall provide a basis for future clinical use of CT when examining these birds.
Keywords: CT scan, Anatomy, Skull foramina, Long-legged buzzard

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Influence of dietary probiotic inclusion on post molt laying hen performance and egg quality

Mousavi SN[1]*, Ebrahimi MT[2], Jafari P[3]
[1]*Department of Animal Science, College of Agriculture, Varamin-Pishva Branch, Islamic Azad University, Varamin, Iran*
[2] *Department of Biology, College of Science, Tehran Central Branch, Islamic Azad University, Tehran, Iran*
[3]*Department of Microbiology, College of Science, Arak Branch, Islamic Azad University, Arak, Iran*
Corresponding author's email: snmousavi@hotmail.com

Objectives: Hens subjected to conventional methods of feed withdrawal molting experience stress. During stress-induced molting, gut microorganisms were commonly affected in birds. Probiotics have been shown to alleviate the stress and improve performance of laying hens. This study was conducted to evaluate the effect of dietary probiotics supplementation on performance and egg quality in postmolted White Leghorn hens.
Materials & Methods: A total of three hundred twenty 80-wk-old Hy-line W36 laying hens were subjected to induced molting by continuous feed withdrawal. The birds were allowed to lose around 30% of their initial body weight and then fed experimental diets. Experimental diets were corn-soybean meal based diet containing 0 (control), 150, 300 and 450 g/ton of a commercial probiotic. The commercial Probiotic (Dipro®, Takgen, Iran) used in this trial included $1.6x10^9$cfu/g of each *Bacillus subtilis* and *Bacillus licheniformis* spores as listed by the manufacturer. Each dietary treatment was assigned to 8 replicate in a randomized complete block design. Diets were fed as mash for 10 weeks. Egg production was recorded daily; feed consumption and egg weight were recorded weekly. Feed conversion (g feed/g egg) was calculated from egg production, egg weight and feed consumption. Two eggs from every replicate were collected at the last week of the experiment for measuring yolk, albumen and shell weight, egg shell quality and Haugh unit. Data were analyzed using the GLM procedure of SAS (2001). Differences among treatments were compared using a Duncan's multiple range tests.
Results and Conclusion: Hens fed probiotic-supplemented diets had significantly higher post molt egg production and egg mass compared to control diet ($P<0.01$). There was no significant difference in feed intake and egg weight between hens fed probiotic-supplemented diets and hens fed the control diet. The FCR was improved in hens fed diets containing 150 and 300 g/ton of the probiotic compared to hens fed control diet ($P<0.06$). The egg quality traits were not affected by dietary treatments, although there was up to 2.17% reduction in broken egg percentage for hens fed probiotic-supplemented diets compared to those fed control diet. The results of this study showed that post molt dietary supplementation of *Bacillus subtilis* and *Bacillus licheniformis* (Dipro®) improved egg production, egg mass and FCR with reduced trend in broken egg percentage.
Key words: laying hen, probiotic, molt, performance, egg quality

CT Scan-Anatomic Study of the Paranasal sinuses in the African Gray Parrot

Omid Zehtabvar[1*], Sarang Soroori[2], Zahra Tootian[1], Somaye Davudypoor[2], Mohammadreza Haddadmarandi[3]

[1]Department of Basic Science, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran.
[2]Department of Surgery and Radiology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran.
[3]Avian Diseases Research Center, School of Veterinary Medicine, Shiraz University, Shiraz, Iran.
Corresponding author's email: ozehtabvar@ut.ac.ir

Objectives: This study was done to give complete anatomic information and knowledge about the normal vision and position of the Para nasal sinuses in the African Gray Parrot by using Computed tomography (CT).Another purpose is providing a normal CT atlas of Para nasal sinuses that useful for diagnosis of abnormalities.
Materials & Methods: In this study, plain CT scans of the cephalic region of 10 African Gray Parrot (*Psittacuserithacus*) were taken. All scans were obtained on a two detector scanner.
Results & Conclusion: Infraorbital sinuswas particularly well developed and become superficial ventromedial to the orbit. It had numerous diverticula, which extend into the premaxilla, around the ear and rostral orbit, and into thelower beak. The right and left sinuses were communicated. Generally, there are large differences between the respiratory system of birds and mammals. Birds can breathe through their nose or mouth. The nasal cavity is compressed laterally and divided medially by a very thin septum. The main indications for performing a CT examination on an avian patient are currently; abnormalities in the skeletal system (cranium, spine) and respiratory tract (sinus, lung). In literature, documentation of the paranasal sinuses of parrots (*Psittacidae*) has been limited, but paranasal sinus is particularly well developed in psittacines and becomes superficial ventromedial to the orbit. In African grey parrot caudal part of the infra orbital sinus is larger. The described method of CT examination of African grey parrot, especially concerning positioning, orientation of scans, scan parameters, in combination with the documentation of the normal paranasal sinus by means of CT images shall provide a basis for future clinical use of CT when examining these birds. We found some important dissimilarities with other species. The measurement of the air-filled spaces in the cranium is useful in follow-up examinations to evaluate the treatment success in a patient suffering from upper respiratory disease. In such cases, conventional as well as reconstructive radiological methods can be combined with the use of contrast.
Keywords:CT Scan, Anatomy, Para nasal sinuses, African Gray Parrot

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Antioxidant status and immune system ofbroiler chicken fed with Ethanolic*Eucalyptus globulus* extract

Kheyri[1], M., Afzali[2], N., Hosseini-Vashan[2]*. S.J., Namaei[3], M.H.
1-Student of poultry production management and husbandry, Animal Science Department, University of Birjand, I.R. Iran
2- Animal Science Department, University of Birjand,Birjand, I.R. Iran.Email: Iran jhosseiniv@birjand.ac.ir
3-Laboratory Science, Birjand university of Medical Sciences,Birjand, I.R. Iran

Objectives: The purpose of this study was to investigate the effect of Ethanolic*Eucalyptusglobulus* extract (EEGE) on antioxidant status and immune system ofbroiler chicken.
Material & Methods: A total of 160 chicks were arranged into 16 experimental units with 4 treatments in a completely randomized design. The treatments were included control, 150, 300 and 450 ppm ethanolic extract of*Eucalyptus globulus* (EEGG). Two chicks from each pen were selected and taking blood. The plasma were extracted with centrifuging, and then frozen at -80 ^{o}C. To study the antioxidant status, the samples were used to determine the reactivity of it's with thiobarbituricacid or the concentration of malondialdehyde with method of Yoshika 1975. The immune system were evaluated by antibody titer against sheep red blood cells (SRBC) The data were analyzed by SAS software and the mean data were compared with the tukey test.
Results & Conclusions: The results were revealed that inclusion of EEEG to broiler diets were decreased the concentration of MDA in plasma of broiler. The MDA concentrations were least in birds that fed diets contained EEEG. The antibody titer against SRBS and IgG and IgM did not affected by dietary treatments. Therefore supplementation of EEEG to broiler diet may be improved the antioxidant status of broilers, without effect on immune system.
Key words:broiler,*Eucalyptus globulus*, Ethanolic, Antioxidant status

Effect ofEthanolic Eucalyptus*globulus* extract on antioxidantstatus and immune system ofbroiler chicken challenged with *Escherichia coli*

Kheyri[1], M., Afzali[2], N., Hosseini-Vashan[2]*. S.J., Namaei[3], M.H.
1-Student of poultry production management and husbandry, Animal Science Department, University of Birjand, I.R. Iran
2- Animal Science Department, University of Birjand,Birjand, I.R. Iran.Email: Iran jhosseiniv@birjand.ac.ir
3-Laboratory Science, Birjand university of Medical Sciences,Birjand, I.R. Iran

Objectives: The purpose of this study was to investigate the effect of Ethanolic*Eucalyptusglobulus* extract (EEGE) on antioxidant status and immune system ofbroiler chicken challenged with *Escherichia coli.*
Material & Methods: A total of 160 chicks were arranged into 16 experimental units with 4 treatments in a completely randomized design. The treatments were included control, 150, 300 and 450 ppm ethanolic extract of*Eucalyptus globulus* (EEGG). Two chicks from each pen were selected and taking blood. The plasma were extracted with centrifuging, and then frozen at -80 ^{o}C. To study the antioxidant status, the samples were used to determine the reactivity of it's with thiobarbituricacid or the concentration of malondialdehyde with method of Yoshika 1975. The immune system were evaluated by antibody titer against sheep red blood cells (SRBC) the data were analyzed by SAS software and the mean data were compared with the tukey test.
Results & Conclusions: The results were revealed that inclusion of EEEG to broiler diets were decreased the concentration of MDA in plasma of broiler. The MDA concentrations were least in birds that fed diets contained EEEG. The antibody titer against SRBS and IgG and IgM did not affected by dietary treatments. Therefore supplementation of EEEG to broiler diet may be improved the antioxidant status of broilers challenged with *Escherichia coli*, without effect on immune system.
Key words:broiler, *Escherichia coli*, *Eucalyptus globulus*, Ethanolic, Antioxidant status

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A survey on the parent stock humoral antibody and maternaly derived antibody against Newcastle disease in their progeny in different ages

Norouzzadeh J [1], Charkhkar S [2]* ,HaghbinNazarpak H [3]
[1]Graduated of Veterinary Medicine, Islamic Azad University, Garmsar Branch, Garmsar, Iran;[2]Department of Poultry Diseases, Faculty of Veterinary Sciences, Science and Research Branch, Islamic Azad University, Tehran, Iran;
[3]Clinical Sciences Department, Faculty of Veterinary Medicine, Islamic Azad University, Garmsar Branch, Garmsar, Iran
Corresponding author's email:charkhkar1@yahoo.com

Objectives: Newcastle disease to offspring transfer of maternal antibodies is important in raising chickens.
Materials & Methods: In this study, a Ross 308 broiler breeder farm in the mazandaran province, 5 times and each time within 5 weeks, blood samples were collected randomly from 20 breeders. The Newcastle disease antibody titres were measured byHaemagglutinationInhibition test(HI) in the laboratory. As well as 3 weeks later, the chickens at one day of age, blood samples were collected randomly in the incubator. The antibody titer of Newcastle disease was measured by the HI test.
Results & Conclusion: The results were evaluated which shows that the percentage of full-scale transfer of maternal antibodies to chicks Newcastle disease in healthy herd between 80 and 85 percent. Breeder flocks also increases with age, there was no significant change in the transmission.
Keywords: Newcastle disease, Maternal antibody, HaemagglutinationInhibition test(HI), chicken, broiler breeder

Effect of light emitting diodes with different wave length onimmune response in broiler chicken

Sharideh H*, Zaghari M
Department of Animal Science, University of Tehran, Karaj 31587-11167, Iran
Corresponding author's email:hosseinsharideh@ut.ac.ir

Objectives: Broiler houses are mainly lit by incandescent light bulb. With the expected continued increase in energy prices, the interest in less energy consuming light sources is growing. The light emitting diode (LED) is an energy-saving alternative. The aim of the present study was to evaluate the effects of the different wave length of the LEDs on broiler chicken health and performance compared toincandescent light bulb.
Materials & Methods: Three hundred sixty day old Ross 308 male chicks were used for 42days.Chicks were randomly distributed into threetreatment groups (neutral-white, warm-white, and incandescent light bulb) with six replicates each. The diets were similarfor all treatment groups. Indicesofhumoralimmunity[anti-sheep red blood cell (SRBC) titer, IgG,andIgM in 26 and 34 days of age], ND and FLUD-antibody responses (40 days of age) were measured.
Results & Conclusion: The effect of wave length of light on secondary titers of SRBC, and FLUD- antibody responses were measured.However, the different wave length of LEDs has a significant effect on primary SRBC and ND antibody titers. The highest primary SRBC and ND antibody titers were observed in warm-white light. We concluded from the results that of the 3 wave length examined, it seems thatthe most suitable to provide optimum level of immunity and energy-saving in commercial broiler housesis warm-white light.
Key words:broiler, different wave length, LED, immune responses, SRBC

Geographical distribution of mortality and infectious disease in broiler farms of Iran 2007-2014

Bokaei.S[1]* ,Mirzaian khamse.MR[2] , Sadrzadeh.A[3] , Haghbin nazarpak.H[3] ,
Amirhajlo.S[4] ,Zeinolabedin tehrani.F[4] , Rajab.A[4]
Department of Food Hygiene, Faculty of Veterinary Medicine, University of Tehran, Tehran-Iiran
Graduated from the Faculty of Veterinary Medicin University of Garsmmsar, Garmmsar-Iran
Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Garmmsar, Garmmsar-iran
Department of PultrySciences ,Iran veterinary Organization of Tehran, Tehran-Iran

Objectives: In the past few decades the poultry industry in Iran has enjoyed significant growth , the factors that influence the efficiency of the industry should be carefully evaluated .It was necessary to do a comprehensive study on the raw data of the occurrence of losses due to viral diseases .
Materials & Methods: For this purpose, referring to statistics in the Statistical Center of Iranand Iran Veterinary Organization ,these data were collected for statistical analysis and it was evaluated using Excel software and graphs based on the maximum cumulative incidence , mortality rate and a minimum cumulative case fatality rate linked to any climate and region , during the period of time in question (1386- 1393).
Result &Conclusion: The results indicate In the provincial review, the lowest and highest cumulative incidence (CI) is related to Gilan (81/5 %) and fars (62/40 %) , the lowest and highest cumulative mortality rate (CMR)is related to Mazandaran (12 / 0 %) and Yazd (88/5 %) and , finally, the least and most minimal case fatality rate (CFR) is in the provinces of Khorasan (63/7 %) and Qom (21/33 %)respectively. Also in the study of climate, lowest and highest cumulative incidence (CI)is related to climates Karanei and Paskaranei Caspian region (27/13 %) and climateregion of Eastern Zagros andazariiran(21/41 %) , the lowest and the highest mortality cumulative (CMR) are climates Kranei and Paskaranei Caspian region (18 / 0 %), and the regional District of Central Iran and large Sistan (1.33 %) and , finally, the least and most minimal case fatality rate (CFR) is related to regional climates Karanei and Paskaranhei Caspian (44/9 %) and climate Baluchi region (64/34 %) ,respectively.
Keywords: CRD - Complex , cumulative incidence , cumulative mortality rate , case fatality rate , *Mortality rate*

A septicemic caseof*Klebsiella pneumonia*in cockatiels (*Nymphicus hollandicus*)

Ramezan Ali Jafari[1*], Reza Zare[2]
[1]Department of Clinical Sciences,[2]Postgraduate student,Faculty of Veterinary Medicine, Shahid Chamran University, Ahvaz, Iran
[*]Corresponding author's email: jafari.ramezanali@scu.ac.ir

Objectives: Systemic bacterial infections are common causes of death in pet birds. Our objective was to determine the cause of mortality in a cockatiel aviary in Ahvaz, Iran.
Materials & Methods:A farmer referred to Clinic of Faculty of Veterinary Medicine of Shahid Chamran University of Ahvaz with complaints of some deaths among his cockatiels.On clinical examination, the morbid birds had anorexia, watery diarrhea and depression, and did not react to stimuli. After inspection of the aviary, any nutritional problem was ruled out. To make a decisive diagnosis, bacteriological samples were obtained from heart and liver of a dead bird,streaked onto both MacConkey and brilliant green (BG) agar plates and incubated at 37 °C for 24 hrs. Then,at least three colonies from each plate were picked up and identified using a panel of biochemical tests, including gas production and sugar fermentation reaction on triple sugar iron agar, indole production, motility, citrate fermentation, urease production, lysine decarboxylation, methyl red Voges-Proskauer and fermentation of maltose, mannitol, and sucrose.Furthermore, the antibiotic susceptibility of the isolate was performed on Muller-Hinton agar by disc diffusion method. The antibiotics were prepared from Padtan-Teb Co., Tehran-Iran, and were tetracycline (30 µg), fosfomycin (200 µg), florfenicol (30 µg),lincospectin (15/200 µg), trimethoprim/sulphadiazine (1.25/23.75 µg), enrofloxacin (5 µg),gentamycin (10 µg), doxycyclin (30 µg), ciprofloxacin (5 µg) and ceftriaxone (30 µg).
Results&Conclusion:A pure culture was obtained from the samples ofheart and liver with mucoid-pink colonies on MacConkey agar,and greenish-yellow colonies on BG agar. The isolate was identified to be *Klebsiella pneumonia*.It was susceptibleto sultrim and gentamycin, resistant to fosfomycin, lincospectin and ceftriaxone, and showed an intermediate susceptibilitytothe rest antibiotics.These resultsimply the role of intestinal flora of cockatielsin systemic infection, and also a high resistance to common antimicrobials.
Keywords:*Klebsiella*, cockatiel, antibiotic susceptibility,Iran

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Possibility of avian diseases detection using heart sound signals

Sadeghi M[1], Banakar A[1], Shoushtari A.Hamid[2]
[1]Department of Biosystems Engineering, Tarbiat Modares University, Tehran, Iran.
[2]Department of Poultry Diseases, Razi Serum and Vaccine Research Institute, Karaj, Iran.
Corresponding author's email: ah_banakar@modares.ac.ir

Objectives: In this study, the possibility of avian diseases detection has been considered based on their heart sound signals.
Materials & Methods: The 14-day-old chickens were divided into three groups. The first group was considered as control samples. The second and the third groups were infected by Newcastle Disease Virus (NDV) and Infection Bronchitis Virus (IBV) using eye drops (0.1cc for every eye).NDV and IBV infection were verified using the RT-PCR test and virus isolation from infected tissues simultaneously with clinical signs. In this paper, RT-PCR was done using protocol 2 which has been describes by Capua and Alexander in Avian Influenza and Newcastle Disease. Chicken heart sounds were recorded by a stethoscope and a computer. Cardiac time-domain sound signals were convertedto time-frequency domain signals by the means of second-order type-one Daubechies wavelets. Using data mining from signals of the approximation and details of wavelet coefficients,75 statistical features were extracted. Improved Distance Evaluation (IDE) method was used for selecting the best features and reducing the input space required for the classifier. Support Vector Machine (SVM) was used as the classifier.
Results & Conclusion: The results showed that the avian diseases can be detected using artificial intelligence methods and heart sound signals processing. The classifier could detect the NDV and IBV from the healthy chickens with accuracy of 91.10 and 85 percent. The proposed idea for diagnosing the mentioned diseases is considerable for that, it guides a nondestructive, fast and automatic instrument in diagnosis of avian diseases. For the further applications of this method, other common diseasescan also be evaluated.The results also show the potential of the suggested intelligent procedure for diagnosing other diseases in different species of animals.
Keywords: Chicken's heart sound signals, Newcastle Disease Virus (NDV), Infection Avian Bronchitis (IBV), Artificial intelligence, Signal processing, Support Vector Machine (SVM)

Prevalence Of Septic Arthritis Caused By Methicline – Resistant Staphylococcus areus (MRSA) In Refer Carcasses From Broiler Farm In Saqqez City Clinics In 2013-2015

Alizadeh H[1] , Kiani MH[2] , Azizian KH[3] , Vosoughi K[4], Amini S[5]

[1]Rooyana veterinary laboratory,Saqqez ,Kurdestan ,Iran ; [2]Young Researchers and Elites Club ,Science and Research Branch , Islamic Azad University,Tehran, Iran ; [3] Medical Bacteriology , Tabriz University Faculty Of Medical Sience; [4]Veterinary Clinic, Saqqez ,Kurdestan ,Iran ; [5]veterinary laboratory Center ,Saqqez ,Kurdestan ,Iran

Corresponding author's email : Rooyanavetlab@Yahoo.com

Objectives : Staphylococcus infections are commen in poultry.These infections are mainly caused by Staphylococcus areus , although other species are occasionally involved. (MRSA) has been detected in several species and animal-derived products In This Study We Investigated The Prevalence of Septic Arthritis Caused by Methicline – Resistant Staphylococcus areus (MRSA) in broiler farm and poultry attendants having frequent contacts with the chickens in Saqqez city.

Materials and Methods : After examination of carcasses in clinics , joints swabs were taken from (40 broiler flocks - 200 sample- 30-55 days) . Nasal swabs were taken from all the fourty (40) volunteered poultry attendants having frequent contacts with the chickens. Twenty-nine (29) of them had symptoms of catarrh and cough, and eleven showing no such symptoms. The swabs were first incubated in Brain heart infusion broth but without antibiotic supplements. After overnight incubation at 37oC, 1µL of the broth was streaked onto Mannitol salt agar , Baird Parker Agar , Blood agar, MacConkey agar and incubated for 48hours at 370C. colonies witch were circular , smooth , β hemolytic , 1-3 mm in diameter , which are often pigmented white to orange were selected and stain By Gram ʾs method and identified by biochemical test (especially calatase tests , tube Coagulase).Antibiotic sensitivity test using disk diffusion technique was performed with 24 antibiotics disks Obtained from Mast Group Ltd Merseysid,U.K.

Results & Conclusion : In present study , Ninety four percent (94%) and 72.5% Coagulase Positive , MRSA incidences were recorded in chickens with Septic Arthritis, and poultry attendants respectively. Only 6% *E. coli* was recorded in chickens with Septic Arthritis. 27.5% Coagulase Negative , MSSA were from the asymptomatic attendants. Antobiogram Test showed that all MRSA isolate were Resistant (Ordinal) to Oxacillin , Peniciline , cloxacillin , Amoxycillin , Ampicillin , Cefoperazone, Cefoxitin , Tetracycline , Tetracycline , Oxytetracyclin , Cholortetracyclin , Doxycline, Teicoplanin and were moderately sensitive (Intermediate),(Ordinal), to Chloramphenicole , Clindamycin , Lincomycin , Ceftriaxon , Erytthromycine and were sensitive (Ordinal) to Gentamycin , Co-trimoxazole, Rifampin , Ciprofloxacin , Augmentin ,Fusidic acid ,vancomycin .The high incidences of MRSA in chickens and attendants in this study suggest cross infection from chicken to the attendants having physical contact with the chickens and resistanse against a lot of current antibiotics showed that better to use antibiogran test befor any drug treatment and more studies (PCR mehode) are necessary. Therefor , biosecurity is recommended.

Keywords : Septic Arthritis , broiler , Staphylococcus areus , MRSA , MSSA , saqqez , kurdestan , Iran.

Determination of Replacement Share of Synthetic D-L Methionine with Herbal Methionine on Broiler Performance

[1]**Dr.Mahmud Shivazad**, *Full professor University of Tehran faculty of agriculture*
[2]**Sanaz Gholamrezazadeh,** *MSc graduated student University of Tehran faculty of agriculture*
[3]**Dr.Hossein Moravej**, *Associate professor University of Tehran faculty of agriculture*
[4]**Dr.Leyla Lotfi**, *PhD graduated student University of Tehran faculty of agriculture*
[5]**Omid Nuri***, MSc graduated student University of Tehran faculty of agriculture*
[6]***Dr.MinaKhodadadi**, *PhD student University of Tehran faculty of veterinary medicine physiology departmen*t.
Mina.khodadadi@ut.ac.ir

In order to determine the optimum replacement share of synthetic D-L methionine with herbal methionine on broiler performance, 200 day old male broiler chicks (ROS 308) were divided to 10 treatments with 4 blocks and each with 5 chicks randomly. Negative control treatment was formulated to meet all amino acids requirements except methionine and cysteine. Positive control treatment was formulated with adding synthetic D-L methionine to meet all methionine and cysteine requirements. Other treatments were formulated by gradual replacement of synthetic methionine with herbal methionine. Final weight gain, FCR, feed consumption, mortality rate and production index were measured. 25% herbal methionine plus 75% synthetic D-L methionine resulted in best combination of these two sources of methionine for maximum performance of broiler.

As a conclusion, 25% replacement of synthetic D-L methionine with organic and cheaper herbal methionine is recommended in broiler diet for maximum production index.

Keyword: Replacement Share, herbal Methionine, Synthetic D-L Methionine, Broilers

The effect of *Bacillus Licheniformis*andgrape vinegaron growth performanceand carcass characteristics in broiler chickens

MoazzenM[1], NajafiR[2*]
[1, 2] *Department of Animal Science, Faculty of Agriculture, Urmia University, Urmia, Iran*
Corresponding author's email: r.najafi@urmia.ac.ir

Objectives: The aim of this study was to investigate the effectof *Bacillus Lechniformis*and grape vinegar on growth performance and carcass characteristicsin broiler chickens.
Materials & Methods: A total of 280 day- old female broilers (Ross 308) were randomly divided into 4 treatments, 5 replicates with 14 birds in each. Experiment was done with two levels of *Bacillus Lechniformis* probiotic which isolated from intestine of local broiler chickens (0, 2 ml (6×10^8 bacteria) per 1 liter of drinking water) and two levelsofnatural grape vinegar (0, 3 kg per 100 kg feed) that used from first day until the end of the experiment. At the end of each week, the amount ofmean weight and feed intake in each pen were recorded. The body weight gain, feed conversion ratio (FCR) and feed intake were calculated. In 42 days, one bird from each pen was slaughtered to determine carcass characteristics (relative weights ofthighs, breast, wings, gizzard and abdominal fat to live body weight).
Results & Conclusion: The results of this experiment showed that broilers which received *Bacillus Lechniformis* in their drinking water hadhighestbody weight gain($p<0.05$) in 0-21 days and lowestfeed intake in 22-42 ($p<0.001$) and 0-42($p<0.05$) and lowest FCR ($p<0.001$) in both 22-42 and 0-42 periods. Results showed that use of three percentage ofgrape vinegar increasedbody weight gain($p<0.05$) and improved FCR($p<0.001$) in 0-21 days. Broilers that received *Bacillus Lechniformis* in their drinking water and grape vinegar in their feedhad highest body weight gain ($p<0.001$) in 0-21 daysand their FCR improved ($p<0.001$) in 0-21, 22-42 and 0-42periods.
Analyses of data for carcass characteristics showed thatuse of*Bacillus Lechniformis* + grape vinegar caused highest numericalrelative weights ofthighs and breast and significantly increased ($p<0.05$) relative weights of wings.Treatments have no significantly differences in relative weights of gizzardand abdominal fat (P□0.05).
Keywords: *Bacillus Licheniformis*, Broiler, Carcass Characteristics, Growth Performance,Vinegar

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Study of Chromium and Nanochromium on antibody titers againstIB & AI diseases in broiler chicken under heat stress

HajializadehParchloo F[1], Ghahri H[2*], Talebi A[3]
[1]*Graduate College of Veterinary Medicine,Urmia Branch, Islamic Azad University, Urmia, Iran*
[2]*Department of Animal Science, Urmia Branch, Islamic Azad University,Urmia, Iran*
[3]*Department of Poultry Health & Diseases, College of Veterinary Medicine, Urmia University, Urmia, Iran*
Corresponding author's email:gahri_hasan@yahoo.com

Objectives: The purpose of this study was to evaluate the effect of different levels of Chromium and Chromium nanoparticles on the immune systemunder heat stressed conditions of broilers (Ross-308). Heat stress decrease the growth factor and immune function. While, Heat stress conditions increase the infectious and metabolic diseases of broilers.
Materials & Methods: A total of 320 one-day old chicks were divided in 8 groups with 4 replicates (each 10 chicks). The experiment includes: 1) negative control group (thermal comfort and ration without Chromium), 2) positive control group (heat stress and diet without Chromium), 3,4 and 5 groups) respectively heat stress plus 500,1000 and 1500 ppb ofChromiumand 6,7 and 8groups) 500,1000 and 1500 ppb were fednanochromium. Blood samples were collected in 21, 28, 35 and 42 day and serum get by centrifuging. IBV antibody titer were measured using IBV ELISA kit (IDEXX, Westbrook, Maine, USA).AI antibody titer were measured by Haemagglutination inhibition test.
Results & Conclusion: The results of this study indicate a significant($P<0/05$) reduction in heat stress effect on the immune function.Chromium and Chromium nanoparticles 1000 ppb was provided better level.Totally the addition ofChromium and Chromium nanoparticles on different levelsto the diet in broiler significantly($P<0/05$) improved antibody titers against IB and AI diseases in heat stress condition.
Keywords: Chromium, Nanochromium, Infectious bronchitis, Avian influenza, Broiler, heat stress

The effect of *Bacillus Licheniformis*on growth performance andcarcass characteristics of broiler chickens in heat stress condition

MoazzenM[1], NajafiR[2*]
[1, 2] *Department of Animal Science, Faculty of Agriculture, Urmia University, Urmia, Iran*
Corresponding author's email: r.najafi@urmia.ac.ir

Objectives: The aim of this study was to examine the effectof *Bacillus Lechniformis*on growth performance and carcass characteristics of broiler chickens in heat stress condition.
Materials & Methods: A total of 280 day-old female broilers (Ross 308) were randomly divided into 4 treatments, 5 replicates with 14 birds in each. Experiment was done in two separated rooms with two levels of *Bacillus Lechniformis* probiotic which isolated from intestine of local broiler chickens (0, 2 ml (6×10^8 bacteria) per 1 liter of drinking water) and two levelsof temperatures (normal and heat stresscondition) that used from first day until the end of the experiment. The temperature in heat stress room was 34-36°C and other room has normal temperature. At the end of each week, the amount ofmean weight and feed intake in each pen were recorded. The body weight gain, feed conversion ratio (FCR) and feed intake were calculated. In 42 days, one bird from each pen was slaughtered to determine carcass characteristics (relative weights of thighs, breast, wings, gizzard and abdominal fat to live body weight).
Results & Conclusion: The results of this examine showed that broilers which were grown in heat stress condition have lowest body weight gain ($p<0.001$) and feed intake ($p<0.001$) and highest FCR ($p<0.001$) in 0-21, 22-42 and 0-42 periods. The *Bacillus Lechniformis*improved FCR ($p<0.05$) in 0-42 days in heat stress condition. Birds which received*Bacillus Lechniformis* in their drinking water had highest body weight gain($p<0.001$) and feed intake($p<0.05$) and lowest FCR ($p<0.001$) in 0-21 days in normal condition.
Analyses of data for carcass characteristics showed that lowestrelative weight of the breastwere observed in heat stress ($p<0.001$) and heat stress+ *Bacillus Lechniformis* ($p<0.05$) treatments. The highest relative weight of wings were observed in heat stress and heat stress+ *Bacillus Lechniformis* ($p<0.05$) treatments. Heat stress treatment has significantly highest gizzard's relative weight ($p<0.001$). While treatments have no significantly differences in relative weights ofthighs and abdominal fat (P 0.05).
Keywords: *Bacillus Licheniformis*, Broiler, Carcass Characteristics, Growth Performance,Heat Stress

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Chronic toxicity assessment of nanosilver particles on weight gain and liver pathology in Japanese quail

Razmjoo M.[1]* ,SiavashHaghighi Z. M.[2], Nikosefat Z.[1] ,Mahmmodi A.
[1]Department of Clinical Scienes,[2]Department of Pathobiology ,Faculty of Veterinary Medicine, Razi University, Kermanshah, Iran
Corresponding author's email: razmjoo.mostafa@gmail.com

Objective: In this studythe effect of chronic toxicity of various doses of colloidal nanosilver particles on weight gain and liver histopathology in Japanese quail was evaluated.
Materials and Methods: One thousand 55-day old Japanese quails with 220 gram mean body weight were daily fed with 10,50 and 100 ppm of nanosilver particles for a period of four months, using a feeding tube.The control group received 1 ml deionized water.Body weight was weekly recorded and body weight changes were comparedin four test group at the end of study. Histopathology ofliver sections were determined at 1, 2 and 4 months post exposure.
Results & Conclusion:10,50 and 100 ppm of nanosilver particles exert had adverse effect on weight gain during quails growing period.Central vein and sinusoids were congested with red blood cells, degeneration and necrosis of hepatocytes and focal infiltration of inflammatory cells along with billiary hyperplasia and fibrosis were demonstrated in liver. The severity of the lesions follows a dose and time dependent manner. The findings suggest that long termorally administered nanosilver particles in Japanese quail could cause chronic liver toxicity, which may along with other factors, underlie weight gain decrease during growing period.
Key words: Japanese quail, Nanosilverparticles, Weight gain, Liver pathology, Toxicity

Study of long term oral administration ofnanosilver particles on biochemical and hematological factors in Japanese quail

Razmjoo M.[1]* ,Nikousefat Z.[1],SiavashHaghighi Z. M.[2],Emamizad J.

[1]Department of Clinical Scienes,[2]Department of Pathobiology ,Faculty of Veterinary Medicine, Razi University, Kermanshah, Iran

Corresponding author's email: razmjoo.mostafa@gmail.com

Objective: In this study we assessed the toxic effects of 30-50 nanometer, noncoated nanosilver particles in Japanesequail .

Materials and Methods: One thousand of 55-day old Japanese quails with 220 gram mean body weight, divided randomly into four group: control, low dose(10 ppm), Mid-dose(50 ppm) and high dose(100 ppm). The control group received 1 ml deionized water andnanosilver test groups were received 1 ml nanosilver (10, 50 and 100ppm) by gavage tube for 120 days orally. After one, two and four month of exposure, 5 quail from each group were bleed and hematological and biochemical parameters evaluated.

Results & Conclusion: The results of this study showed that application of nanosilver particles caused dose and time dependent increase in RBC and time dependent increase in WBC count. There was an augment in heterophil count and decrease in lymphocyte count gradually. PVC value found time dependent and increasedso that the maximum level belonged to the second month. Hemoglobin value decreased in all concentrations. Glucose value revealed dose and time dependent decreased in 100 ppm group. There were no remarkable change in AST value but ALT showed a dose and time dependent increase in 10 ppm group. There were no significant change in total protein and globulines, but albumin showed an increase in 4th month of assay. According to the finding at this study, nanosilver particles had toxic effects on Japanese quails in different concentration.

Key words: Japanese quail,Nanosilver particles, Toxicity, Hematological Factors

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Detection of infectious laryngotracheitis in a backyard rooster in Mazandaran provinceof Iran

Tahmasebi M[1], Hosseini SM[2], Rohani S[3], Ramezanpour S[4]

1. *Young Researchersand Elite Club, Faculty of Veterinary Medicine, IslamicAzad University, Babol Branch, Babol, Iran*

2. Department of Veterinary Pathobiology, Islamic Azad University, Babol branch, Babol, Iran

3. veterinary clinician, Babol, Mazandaran, Iran

4. . Department of Veterinary Pathobiology, veterinary faculty of university of Tehran, Iran

Corresponding author's email: tahmasebimehran@yahoo.com

Objective:Avian infectious laryngotracheitis virus (ILTV) is an alphaherpesvirus of poultry that is spread worldwide. ILTV enters its host via the respiratory tract and the eyes.Aim of this study is demonstration of a case report about detection ofInfectious Laryngotracheitis in a backyard rooster.

Material and method: A dead adult backyard rooster were submitted to the veterinary clinic in Babol city of Mazandaran. The carcasses were carefully dissected and trachea and larynx tissue samples were taken. The tissues were fixed and following routine processing, sections were stained with hematoxylin and eosin.

Results and conclusion: At necropsymucoid exudate with blood in trachea with severe hemorrhages in larynx were present. Histopathologic examinations revealed severe edema, hyperemia and mild infiltration by mononuclear cells in submucosa; and edema, hyperemia and heavy infiltration by mononuclear and polymorphonuclear cells in lamina properia. Laryngeal and tracheal epithelia were sloughed off, and causing occlusion of larynx and trachea. Inthe epithelial cells of the trachea eosinophilic (H&E staining) intranuclear inclusion bodies were seen.However, in northern Iran there is no vaccination program for Infectious Laryngotracheitis in breeder and broiler flocks.

Comparison of physicochemical properties and antibacterial activity of two promising tilmicosin-loaded delivery systems: solid-lipid nanoparticles and lipid-core nanocapsules

Background and Aim: Tilmicosin (TLM) is one of the important antibiotics in veterinary medicine especially in the treatment of respiratory diseases in poultry and cattle. The problems with its poor absorption and side effects warrant for development of new delivery systems.This study aimed to formulate two TLM-loaded lipid nanoparticles (TLM-LNPs) including solid lipid nanoparticles (SLNs) and lipid-core nanocapsules (LNCs) and compare their physicochemical properties, and in-vitro antibacterial activities against certain pathogenic bacteria of poultry isolates.
Methods:TLM-SLNs were formulated by hot homogenization method and TLM-LNCs were prepared using interfacial deposition technique. Particle size- mean diameter (MD), polydispersity index (PDI), zeta potential (ZP), drug encapsulation efficiency (EE)%, and loading capacity (LC)%, were measured and compared as well as morphology examination by scanning electron microscopy (SEM). The effect of various cryoprotectants (mannitol, sucrose, lactose and sorbitol) during lyophilizationand storage at 4°C and 25°C for 8 weeks were studied. In-vitro TLM release profiles (at pH 7.4 and 1.2) and antibacterial activities of these TLM-LNPs suspensions (against *Escherichia coli*and *Staphylococcus aureus*) evaluated and compared with their lyophilized powders.
Results:TLM-LNPs suspensions were in nano scale range. Their MD values were 85.0, and 186.3 nm; ZP values were -17.3, and -18.9 mv and EE% values were; 94.3, and 69.1% for TLM-LNCs and TLM-SLNs, respectively, but these values were significantly changed after lyophilization. Mannitol proved to be the most effective agent in preservation of the characteristics of different TLM-LNPs.
The release profiles were biphasic (burst following by sustained release) for all tested formulations. In general, time courses of release were longer at pH 7.4 vs. 1.2 and TLM-LNP lyophilized powders vs. suspensions. *S. aureus was* more sensitive to prepared formulations, and TLM-LNC preparations exhibited better activities.*E. coli* was less sensitive (8-16 fold).
Conclusions:TLM can be effectively loaded in LNPs, the better properties achieved by loading it in LNCs. Mannitol as a cryoprotectant, kept the LNPs properties with lowest changes. TLM-LNPs suggest more efficient medications compared with the free TLM, however, more studies are needed in this regard.

Keywords: Tilmicosin; Lipid nanoparticles; Stability; Poultry; Antibacterial activity

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A case report of Klebsiellosis in Canary

Mayahi M[1*], Gharibi D[2], Arazi S[3]

[1]*Department of Clinical Sciences, Faculty of Veterinary Medicine, ShahidChamran University of Ahvaz, Iran*
[2]*Department of Pathobiology, Faculty of Veterinary Medicine, ShahidChamran University of Ahvaz, Iran*
[3]*DVSc student of avian health and diseases,Faculty of Veterinary Medicine, ShahidChamran University of Ahvaz, Ahwaz, Iran*

Corresponding author's email:Saeed_arazi@yahoo.com

Klebsiella Pneumoniae is a non-motileentrobacteriaceae, and most members of the genus are encapsulated. Specific information on the transmission, pathogenesis and incubation period for *Klebsiella* spp. in birds is not available. Present case report describes the *klebsiellosis in canacry.*
A canary breeder with 5 dead canaries was referred to the clinic of Veterinary Medicine, University of ShahidChamran of Ahvaz- Iran. The flock size was 200 and canariesshowed clinical signs like lethargy, weakness, lack of appetite and weight loss. According to the history taken, the birds showed the clinical signs about 5 days before death. The only necropsy finding observed was haemorrhagic enteritis. No drugs were used recently by the breeder. According to the history taken, and assessment of the flock condition, management problems or nutritional causeswere eliminated. Samples of heart and liver were taken and referred to microbiology laboratory of the university. Culture and biochemical tests were performed for isolation and identification, and*Klebsiella pneumonia* was isolated as causative agent. To assess antibiotic sensitivity, antibiogram test was also performed for Neomycin, Fosfomycin, Lincospectin, Sultrim and Florfenicol.
Results showed that the Isolated *Klebsiella pneumonia* was sensitive only to Lincospectin. So according to the isolation and Antibiogram results, Lincospectin and Multivitamine were prescribed and used for 5 days. After the administration of the antibiotic no more clinical sings or mortality were observed.
Keywords: canary, *Klebsiella Pneumoniae*, antibiogram, Lincospectin

A case report of acute death in Canary due to Pseudomonas aeruginosa

Mayahi M[1*], Gharibi D[2], Arazi S[3]

[1]Department of Clinical Sciences, Faculty of Veterinary Medicine, ShahidChamran University of Ahvaz, Iran
[2]Department of Pathobiology, Faculty of Veterinary Medicine, ShahidChamran University of Ahvaz, Iran
[3]DVSc student of avian health and diseases, Faculty of Veterinary Medicine, ShahidChamran University of Ahvaz, Iran

Corresponding author's email:Saeed_arazi@yahoo.com

Virulent strains of *Pseudomonas aeruginosa* can cause septicemia. Present case report describes the acute death of 4 canaries due to *Ps.Aeruginosa*in a canary breeding center.
A canary breeder with 4 dead canaries was referred to the clinic of Faculty of Veterinary Medicine, University of ShahidChamran Ahvaz, Iran.The flock size was 150 and canaries showed clinical signs like conjunctivitis and diarrhea and acute death. No drugs were used recently by the breeder. According to the history taken and assessment of the flock condition, management problems or nutritional causeswere eliminated.Samples of heart and liver were taken and referred to microbiology laboratory. Culture and biochemical tests were performed and*Ps. Aeruginosa*was isolated as causative agent. To assess antibiotic sensitivity, antibiogram test was also performed for Ampicillin, Amoxycillin, Enrofloxacin, Florfenicol, Fosfomycin, Flumequin, Lincomycin, Gentamycin, Lincospectin, Neomycin, Oxytetracycline, Sulfadimidin, Trimethoprime+sulfadiazine, Trimethoprime+sulfadimetoxin, Tylosin, Penicillin, Kanamycin, Chloramphenicol and Ciprofloxacin. Results showed that the Isolated*Ps.Aeruginosa*was sensitive to Gentamycin, Fosfomycin and Neomycin.After treatment the bird recovered and no more clinical sings or mortality were observed.
Keywords: canary, *Pseudomonas aeruginosa*, antibiogram

Occurrence of clostridial and staphylococcalinfection in an ostrich farm in Fars province

A.Asl Najjari[1*], N. Mosleh[1], H. Shafiei Bafti[1], A.Z. Fatemi[2]
1- Department OfClinical Science, School Of Veterinary Medicine, Shiraz, Iran
2- Department Of Pathobiology, School Of Veterinary Medicine, Shiraz, Iran
Corresponding Author: Aslnajjari@shirazu.ac.ir

The present case report describes 20 percent mortality in an ostrich farm in Fars province.The affected and dead birds were referred to the poultry diseases section,school of veterinary medicine, Shiraz University. The claim of client was total mortality in young(2-3 month) birds` pen, listlessness andinappetence. In clinical examination watery green discharges from mouth and watery dropping, depression were observed. At necropsy, in gastrointestinal tract petechial hemorrhage was most predominant finding in small intestine especially at duodenum and in some cases the hemorrhage was present at pancreas. In cardiovascular system there were petechial hemorrhages on epicardium and ecchymotic hemorrhage on base of pedicles. In respiratory system there was air saculitis and caseous puson airsacs. In cerebrospinal system, there was hyperemia and hemorrhages on cerebellum. The kidneys in urinary system were swollen and hyperemic. Paraclinical evaluation included wet smear and gram staining from small intestine and microbial culture from liver and heart. The results showed presence of clostridial bacilli in gram staining and wet smear, and pure staphilococcos was isolated from heart and liver. The isolated staphylococcos was not hemolyticin blood agar culture media and was resistant to penicillin antibiotic. The antibiogram test showed sensitivity to gentamycin and lincospectin antibiotics. In conclusion, some predisposing factors caused development of opportunistic bacteria such as clostridium spp. and staphylococcusspp., which in this case report the role of staphylococcal infection in mortality rate was notable.
Keywords: Staphylococcus, Clostridium, Gastrointestinal tract, Ostrich

Seromonitoring of some Parrots for AI and ND 2013-2014

Abdolreza Nabinejad
Isfahan research and education center of agriculture ,Vet. Dept
Nabinejad@yahoo.com

Parrots are one of the birds with most popularity in new civil social and locations, in current study some different strains of parrots which were referred to the Isfahan birds clinic will be reported , Due to a close relationship between parrots and the owners also regarding to some clinical signs and epidemiological reports the study have been done.

More than 400 parrots included small parrots(Budgies , Parrotlets , Lovebirds Small Conures, Cockatiels) and large parrots (Grass Parakeets, King Parrots, Mula Parrots, Ring-neck Parakeets, Princess Parrots, Rosella, Aras and African gray parrots) were studied, Blood samples were mostly prepared using wing vein ,the sera were tested for AI and ND by HI in the period of 2013 to 2014.

Regarding to the results the ND titer were ranged from 0 to 9, with the average of 5.5 and CV of 137%, The titer of the sera for H5N1 were 0 but for H9N2 were ranged from 0 to 10 and the mean titer were 7 with C.V. of 187.

Evaluation of thehealing of bone defects induced byNano-calciumphosphate combined withsodium alginate inGolden Eagle :a radiographic study

Rahimzadeh R[1]*,JahangiriSh[2]
1.Department of Clinical Siences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanadaj, Iran
2.DVM Student,Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanadaj.
***Corresponding author's email: drrahimzadeh@iausdj.ac.ir**

Objectives: Bone grafting is a surgical procedure that is used to restore the function of bony structures. The ideal bone graft contains osteoinductive, osteoconductive, and osteogenicproperties. Corticocancellous grafts are effective for new bone formation in birds.Fracture repair in birds is challenging, and bone defects remain a major clinical problem. If fracture complications are not managed properly, bone healing will not occur.Many materials are synthetic and spread out, so now the materials such as nano-calcium phosphate alone and in combination with other stimulants can be effective in bone healing.

Materials & Methods: To evaluate the efficacy of bone grafts for defect healing in Golden Eagle (*Aquila chrysaetos*)calciumphospate combined with sodim alginate were investigated in the healing of a bone defect in the right ulna, and the fracture was stabilized with external skeletal fixation (ESF).The healing was evaluated at 5 endpoints: 0, 15, 30, 45and 60days after surgery by radiography.

Results & Conclusion: Between 15 and 30 response callus formation with no signs of absorption scaffolding is visible, on 30 biomaterial link during the process of absorption of all four sides, and radiographs showed replace it with new bone has grown, on 60 cortex in the deficit in along the longitudinal axis to bridging through the formation of new bone tissue and the process of healing is organized, the full bridge and create a callus between the cortex on day 45 with a density similar to bone can be seen in place.These results suggest that bone defect healing can be achieved by a combination of
osteoinductive and osteoconductive bone graft materials for clinical union and new bone regeneration in Golden Eagle.From the results of this study, we conclude that Nano-calciumphosphate combined with sodium alginate bone grafts, with external skeletal fixation is suitable and safe for bone defect and fracture treatment in Eagles.

Keywords: Nano-calciumphosphate, Sodium alginate,Radiographic, Golden Eagle ,Bone defects.

Evaluation of microbiological quality of poultry meat on the slaughterhouse

Koohdar, V. Tahmasebi, A.
Coresponding Author: dr.koohdar@gmil.com

Food safety and shelf-life are both important microbial concerns in relation to broiler meat production. Focus is mainly placed on the absence or control of potentially pathogenic microbes such as Salmonella and Campylobacter but, from commercial point of view, other spoilage bacteria also play a great role. Regarding food safety, the primary target should be the production of pathogen-free live animals, thereby allowing slaughter plants to keep the processing line free of those micro-organisms. Interventions in the slaughter plant cannot always completely remove pathogens. However there are some measures of control available, including separation of flocks, carcass decontamination and implementing a balanced and operational HACCP system.
Shelf-life is closely linked to food safety during processing. The developments towards in-line processing, including chilling, washing and cooling, allows optimal control. It minimizes processing time and product to product contact, and thus increases shelf-life and limits cross contamination. This study consists of an assessment of the microbiological quality of poultry carcasses for the consumption. A total of 50 samples collected from slaughterhouse have been microbiological analyzed. Total bacterial count and enumeration of fecal Coli forms, Staphylococcus aureus and E coli were done in this study. These analyzes were made according to the Iranian National Organization for Standardization. Results showed that the prevalence of infection by E coli and Staphylococcus aureus was 60% and 56% respectively. The average contamination for total bacteria, fecal coli forms and Staphylococcus aureus is about 5.0 , 2.18 and 1.08 log10 CFU / g, respectively. According to the results, total bacterial count in 20%, Staphylococcus aureus in 23% and E coli in 25% of samples were higher than the standard rate.
Key words: Total bacterial count, Staphylococcus aureus, E coli, Coli form, Chicken meat

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Evaluation of Coccidiosis prevalence rate in native chickens of Saghez

Kawan Mahmoodi
Corresponding author's Email: kawanmahmoodi@gmail.com

Objectives: The purpose of this Study is to Evaluate Coccidiosis prevalence rate in native chickens of Saghez city, Kordestan province, Iran.

Materials & Methods: In this study we used oocyst size method to detect parasite species. 200 fecal sample by randomize cluster sampling in 4 zones of Kordestan and from each zone 50 numbers of samples were taken by clayton lain method and then were examined. oocyst shape and form, the size, measurement of sporulation period, pathological studies were performed
on Eimeria species.

Results & Conclusion: Finally, 4 *Eimeria* species (*Eimeria Tellena, Eimeria Necatrix, Eimeria Acervulina, Eimeria Maxima*) were achieved. According to the results in all of the Saghez zones, *Eimeria Acervulina* had the most percentage (50. 02%) and *Eimeria tellena* had the less occurrence percentage (9. 56%) of infection in comparison with other *Eimeria* species in native poultry. also *Eimeria Necatrix* and *Eimeria maxima* with 21. 27% and 19. 09% respectively occupied in the second and third places.

Keywords: Coccidiosis, Eimeria, oocyst, native chickens

Effects of Different Levels of Aloe-Vera on Morphology of Small Intestine in broiler chicken

Ali Mahdavi[1], SeyedJavad Ahmadpanahi[1], Gholamali Jelodar[2],Morteza Saberi[3], Mohammad Sadegh Ghodrati[4,*],Ehsan Pourafshar[3], Saeed Omidbakhsh[4], Mohsen Taherdost[4], Farshid Raeisi[4]
1Assistant professor, Faculty of veterinary medicine, Semnan university, Semnan, Iran
2Assistant professor, Faculty of veterinary medicine, Shiraz university, Shiraz, Iran
3Laboratory technician, Faculty of veterinary medicine, Semnan university, Semnan, Iran
4DVM student, Assistant professor, faculty of veterinary medicine; Semnan university, Semnan, Iran
Corresponding author E-mail: m.sadegh.ghodrati@semnan.ac.ir

Objects: Chicken is one of the most popular food sources in Iran and the rest of the world. In other hand population of the world has jumped in the past few decades and has an increasing trend. Therefore researchers are focusing to solve the poultry industry problems and enhance the quality and quantity of production. Also use of diverse compounds such as antibiotics are unavoidable but it goes without saying some of these compounds has some side effects on the humans. Thus, find an alternative, cheaper and safer compound seems to be necessary in order to increase chicken performance. Thus this study carried out to evaluate the effects of Aloe-Vera gel on the morphology of the small intestine.
Materials & Methods: This study was conducted in completely randomized design by using 240 (one-day-old Ross 308) broiler chicken. Chickens were divided into 5 groups and 6 replicate, each group contained 48 chickens (Control group, treatment 1 received virginiamycin (T1), treatment 2 (T2), 3 (T3) and 4 (T4) received 1%, 2% and 3% Aloe-Vera gel respectively). On the day 42 animals were slaughtered and intestine samples were taken and fixed. The slides were observed and imaged by using an optical microscope, and Villus height, Crypt depth, and villus height/crypt depth ratio (V/D) was determined. The data were analyzed by GLM procedure using the SAS software (SAS, 2000).
Results & Conclusion: Regarding result of duodenum indicated that the highest villus height, deepest crypt depth and V/D were observed in T4 such that the V/D ratio had a significant difference with the control group and T1 ($P<0.05$). In the jejunum and ileum the lowest villus height and crypt depth belong to T1 and this lowest amount cause the most V/D in jejunum. Also it is noticeable that all experimental treatment which received Aloe-Vera had statistically significance higher villus height and deeper in crypt depth in jejunum and ileum($P<0.05$). The obtained results indicate that using virginiamycin in the poultry diet decrease villus height and crypt depth whereas using Aloe-Vera in the diet can increase or modified them. better morphological parameter in the small intestine could lead to better diet absorbance and finally the best performance and weight gain. Therefore adding Aloe-Vera in the poultry diet can be proposed as an alternative for virginiamycin.
Keywords: Poultry, Chicken, Aloe Vera, Morphology, Small intestine, Virginiamycin.

Effects of copper-methionine on performance and ascites in cold-stressed broiler chickens

BagheriVarzaneh M [*], Rahmani H,Jahanian R,Mahdavi A
Department of Animal Sciences, Isfahan University of Technology, Isfahan, Iran, 84156-83111
Corresponding author's email: Mina_b641028@yahoo.com

Objective: This study aimed to investigatethe effect ofdietary copper-methinione on the performance and ascites incidence in broiler chickens thatwere grown in cold temperature.
Materials & Methods: Two ambient temperatures (normal and cold) and three levels of copper- methionine (0, 100, 200 mg/kg of diet)were evaluated for their effects on growthperformance : total ventricle ratio (RV:TV) as index for ascites detectionin broiler chickens in a 2×3 factorial arrangement.Half the birds were kept in a cold temperature (15 19 ºC) from 28 to 45 days. 480 one-day-old broiler chickens (*Ross 308*)were randomly assigned to 6 treatments (normal temperature and 0 mg/kg of copper-methionine (N0), normal temperature and 100 mg/kg of copper-methionine (N100), normal temperature and 200 mg/kg of copper-methionine (N200), low temperature and 0 mg/kg of copper-methionine (C0), low temperature and 100 mg/kg of copper-methionine (C100), and low temperature and 200 mg/kg of copper-methionine (C200)) and four replicates.Feed conversion ratio(FCR) were determined at 14, 28 and 45 days of age. RV:TV was calculated at 38 and 45 days of age.Data were compared by the Least Significant Difference testand GLM procedure of SAS software (1998) and$P< 0.05$ was significant.
Results & Conclusion: The results of this experiment showed that treatments did not affect FCR values from day 1 to 14. From day 14 to 28, dietarycopper-methionine decreased significantlyFCR values. The highest FCR value and RV:TV were determined in ascitic broilers in (C0) at 45 days of age. Cold temperature and different levels of copper-methionine had no significant effect on RV:TV at 38 days of age. In conclusion, it appears that copper-methionineprevent ascites incidence and had beneficial effects on growth performance.
Key Words: Broiler Chickens, ascites, copper-methionine, right: total ventricle ratio, Performance

Isolation and Identification of Enterococcus gallinarum from Panophthalmitis lesion in a Guineafowl, a case report

Mayahi M,Gharibi D,Nejaty A*,Keshavarz V
Department of Avian Diseases, Faculty of Veterinary Medicine, University of shahidchamran, ahvaz, Iran
Corresponding author's email:a-nejaty@phdstu.scu.ac.ir

Objectives: A guineafowl with signs of reduced growth and feed intake, reduced egg production, depression and lethargy,fine head tremors,Diarrhea, increased body temperature, Panophthalmitis(inflammation of all coats of the eye), *Hypopyon* (inflammatory cells in the anterior chamber of the eye) Was referred to the clinic birds Veterinary Medicine ShahidChamran.
Materials & Methods: To investigate,A sterile swab of the eye from the infected guineafowl was preparedand was sent tothe Laboratory of Bacteriology, Faculty of Veterinary Medicine, University ofShahidChamran. The results of colony morphology on blood agar colonies are circular, convex, smooth and non-hemolytic showed.The lack of pigment production, lack of movement and results of various sugars fermentation, due to the possible presence of Enterococcusgallinarum in clinical samples.
Results & Conclusion: Then purified bacterial DNA was extracted and ribosomal RNA sequences was amplified using primers of ribosomal RNA .The purified PCR products, determined the nucleotide sequence. As a result of sequencing and comparison (nucleotide blast) with nucleotide sequences in NCBI presence of Enterococcus gallinarum confirmed.Based on the results of drug sensitivity tests, birds with penicillin G procaine at a dose of 12,000 international units per kg bird (the equivalent of 2 to 3 ml for every 50 kg body weight) every 24 hours for 2 days was treated.Finally, after a month of the bird returned to normal *situation*.
Keywords: Guineafowl,Enterococcus gallinarum, Panophthalmitis,Identification

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Effects of native probiotic (Dipro®) on performance growth, digestive enzyme Activities and intestinal morphology in broiler chickens

Karimzadeh S *, Seify M, Rezaei M
Department of Animal Sciences, Faculty of Animal Science and Fisheries, Sari Agricultural Sciences & Natural Resources University, Sari, Iran
***Corresponding authors email: Journal_ap@yahoo.com**

The aim of this study was to determine the effects of native probiotic (Dipro®) on body weight gain, feed conversion ratio, feed intake, digestive enzyme activities and intestinal morphology in broiler chicks.
In this study, total of 500 one-day-old male broilers of Ross 308 were randomly allocated to 5 dietary treatments with 5 replicates of 20 birds each replicate. Birds were fed on basal diets (Control) or basal diets supplemented with antibiotic (0.02 %), probiotic (0.02 %), probiotic, (0.03 %) and probiotic (0.04 %) for a 42 d feeding trial. All diets were iso-caloric and iso-nitrogenous. Feed and water were supplied ad libitum throughout the experiment. Assays for Amylase, Lipase and protease activity were determined using the method of Somogyi (1960), Tietz and Fiereck (1966) and Lynn and Clevette-Radford (1984) . Morphological indices were measured using image processing and analysis system (Version 1, Leica Imaging System Ltd, Cambridge, UK). The experimental data were analyzed using General Linear Model (GLM) procedure of SAS Institute (SAS, 2004). Means of treatments were compared by Duncan's multiple range tests (1995). Differences were considered significant at $P<0.05$.
The results showed that the group received 0.04 % probiotic had significantly higher body weight gain and better feed conversion ratio than those of the control group and some of other groups ($P<0.05$). However, feed intake and mortality percentage was not significantly affected by treatments. Results showed that addition of 0.04 % probiotic in diets improved amylase, lipase and protease activity of small intestine as compared with the other group ($P<0.05$). Also, adding 0.04 % probiotic to dietary significantly improved villus height and crypt depth of duodenum and ileum compared to other treatments ($P<0.05$). In conclusion, the result of the present study indicated that use of Dipro® up to 0.04 % can be improved the body weight gain, feed conversion ratio, amylase, lipase and protease activity of intestine and villus height and crypt depth of duodenum and ileum in broiler chickens.
Keywords: probiotic, antibiotic, digestive enzyme activities, intestinal morphology, growth performance, broiler chicken.

Effects of probiotic and prebiotic on growth performance, intestinal bacteria population and carcass chemical composition in broiler chickens

Karimzadeh S*, Seify M, Rezaei M

Department of Animal Sciences, Faculty of Animal Science and Fisheries, Sari Agricultural Sciences & Natural Resources University, Sari, Iran

***Corresponding authors email: Journal_ap@yahoo.com**

The objective of this study was to investigate the effect of different levels of Bctocell® probiotic (containing Pedicococcus acidilactic ۱۰10 cfu/g) and Agrimos® prebiotic (containing Beta-glucan and Mannan-oligosaccharides) supplementation on growth performance, intestinal bacteria population and carcass chemical composition in broiler chicks.

A total number of 320 male broiler chicks (Ross 308) were randomly distributed to 16 pens. There were 4 replicates in each treatments with 20 chicks in each replicate. Broiler chicks were fed with basal diets (Control) or basal diets supplemented with probiotic 0.1 %, prebiotic 0.1 % and probiotic 0.05 % + prebiotic 0.05 %. for 42 days. Nutrient composition of feedstuff in diets were based on National Research Council (NRC, 1994) and Nutrient requirement of broiler chicks in each period of rearing was based on Ross 308 recommendations. All diets were isocaloric and isonitrogenous. During of the experiment, Feed intake, Body weight and feed conversion ratio were measured. At the end of the experiments, carcass chemical composition (protein %, fat %, ash % and moisture %) were measured. Samples of intestinal digesta were collected from 4 chicks in each pen. All data were analyzed according to GLM procedure by the SAS software (SAS Institute Inc, 2004). Differences were considered significant at $P<0.05$.

There were no significant differences among experimental treatments for feed intake. Obtained results showed that the addition of probiotic + prebiotic in diets improved body weight gain and feed conversion ratio as compared with the other group ($P<0.05$). Addition of probiotic + prebiotic decreased the mortality compared to the control ($P<0.05$). There were not significant differences among treatments for protein %, fat %, ash % and moisture % of carcass. Number of intestinal gram-positive bacteria increased in treatments contains probiotic + prebiotic of diet ($P<0.05$). In conclusion, the result of the present indicated that use of combination probiotic + prebiotic can improve the body weight gain, feed conversion ratio and intestinal gram positive bacteria counts in broiler chicks.

Keywords: probiotic, prebiotic, intestinal bacteria population, carcass chemical composition, growth performance, broilers.

Parasites of domestic pigeons (*Columba liviadomestica*) in Iranshahr

DavoodAnvari [1], Saba Sargol Hosseinzadeh [2] *

[1] *Doctor of Veterinary Medicine ,Iranshahr , Iran*

[2] *Student of Veterinary Medicine, Faculty of Veterinary Medicine, University of Zabol, Zabol, Iran*

Corresponding author's Email:sabasargol@yahoo.com

Objective: Pigeons are distributed everywhere and the relationship between pigeons and human is so close. The pigeons have been domesticated for hundreds of years. They have been used for a long time as a food resource, pet or cultural and religious symbols. Pigeons act as reservoirs or carrier, so they are an important source of infection for other avian, which share the common parasitic fauna. The aim of this study was to determine the prevalence of *Haemoproteus Columbia*, *Trichomonas gallinae* and Ectoparasites in pigeons (*Columba domestica*) in Iranshahr.

Material &Methods: This Study was done on 20 pigeons from June 2015 to September 2015 in Iranshahr located in south-east of Iran. Oropharyngeal swabs were taken from allthe birds. Also blood samples were obtained from wing vein and thin smears were prepared for them. All smears were stained withGiemsa and were examined by immersion. Chewing lice and *Pseudolynchiacanariensis*were collected by visual examination.

Results: In20Oropharyngeal swab smears,7 samples (35%) were positive for T. gallinae. In Blood smears*Haemoproteus gallinae*was detected in 8 pigeons (40%), infection with *Pseudolynchia* and chewing lice were Respectively 3 (15%) and 4(20%). Infestation rate to theses parasite in the world are very different. These differences were probably linked to geographical variations and differences in the feeding habitat.

Key words: Parasites, pigeons, Iranshahr

Haemoproteus infection in pigeon referred to veterinary azad university of Sanandaj

***Kosar Shabestari Ghazaaleh Adhami**

DVM Student,veterinary medicine, Islamic Azad university ,Sanandaj branch,Iran

Department of parasitology,Islamic Azad university,Sanandaj branch,Iran

kosar.shab1994@gmail.com

Objectives: protozoan parasite haemoproteus belongs the family of plasmodia that have been reported from birds. Biting of hippoboscidea and creatopogonidae transmit the parasite. Haemoproteus can cause reduced growth rate, weight loss, and lower egg and meat production and in some cases lead to death. On November 5,2015 we received pigeon that was referred to parasitology department of veterinary azad university of Sanandaj. Lethargy and anemia was typical in observation.

Materials & methods:1 ml of blood was taken from the wing vein and blood smear were stained with gimsa .Slides were observed under light microscope.

Results & conclusion: The gametocyte of haemoproteus in red blood cells were seen. The infected pigeon treated by sulfadiazine and trimethoprim.

Keywords: Haemoproteus, pigeon, Sanandaj,blood smear

Evaluation the Clinical Utility of Potassium and Aldestrone Measurement in Ascitic broiler.

Barimani MJ[1*], Haghbin Nazarpak H[1], Tehrani Sharif M[1], Moradi A[1],Qorbaniun E[1], Abdollahi M[1], Mahmoodi SA[1].

[1]Department of Clinical Sciences, Faculty of Veterinary Medicine, Islamic Azad University- Garmsar branch, Garmsar, Iran;

***Corresponding author's email: mohammadjavad.barimani@gmail.com**

Objectives: Ascites in many countries has become a major concern for the poultry industry.This syndrome causesseriouseconomic loss in the poultry industry in many countries of the word.This is not only because of the high mortality,but also because of thereduced growth and carcass quality that leads to carcass condemnation at slaughterhouse.The aim of this study was to determine the concentrate of Aldesterone and Potassium in ascitic broilers&evaluate the clinical accuracy of Aldesterone and Potassium as a diagnostic tool in ascites.

Materials & Methods: Total 440 one day broiler chicken included in this study. They were randomly divided in two groups.Groups ۱was control&kept at a different place.Group2was assumed as ascetic. Every group was split to 6 pen.Ascites induced by in group ۲.In order to define ascites, RV/TV ratio weredetermined.

Results & Conclusion:the results of this study showed that aldosterone and potassium are not valid tool in diagnosis of ascites.

Keywords:RV/TV,ALDESTERONE,POTASSIUM, ascites,broiler chicken

Coccidiosis in Japanese Quails (*Coturnixcoturnix japonica*): Characterization and treatment of a Naturally Occurring Infection in a Commercial Rearing Farm

Monireh Khordadmehr[1], Roya Shahbazi[1*], Vahid Reza Ranjbar[2]
[1] Department of Pathology, Faculty of Veterinary Medicine,University of Tabriz
Razi Vaccine and Serum Research Institute, Marand, Iran

Corresponding author's email: R.shahbazi91@ms.tabrizu.ac.ir

Objectives: Coccidiosis is a common protozoan disease in domestic birds and other fowl, characterized by enteritis and bloody diarrhea. Several factors influence the severity of infection. Some of these include: The number of oocysts eaten, strain of coccidia , environmental factors affecting the survival of the oocysts, site of development within the host and age of the bird. In the present paper, an acute naturel coccidiosis with 80% morbidity and 3% mortality rate was diagnosed in Japanese quails *(Coturnixcoturnix japonica)*.
Materials and methods: In the affected birds, Clinical signs included brown to red diarrhea, weakness and pale face. Fecal examination was performed, besides necropsy and histopathology to confirm diagnosis. Therefore, ten new dead bird carcasses were chosen for postmortem inspection. Histological examination was carried out to confirm the presence of developing stages of parasites within the intestine. Section of 2 cm were excised from the formaldehyde solution, processed and stained by hematoxilin-eosin. According to the necropsy, the treatment was performed by sulfaclozine with 1 gr/lit for 3 days which appear to be an effective treatment.
Results and conclusion: At fecal examination, a large number of *Eimeria* oocytes were found. At necropsy, there were moderate hemorrhage in the small intestine. Also, in pathological studies, endogenous stages of the parasites were observed in the small intestine. These were usually located in the villi. Pathological changes were also observed in the mucosa of the small intestine. The colonization of the gastrointestinal tract causes structural and functional changes, since the presence of parasites induced both general and local disturbances. A common feature of the infection is a severe depression of the digestive and absorptive capabilities of the mucosa. In the present study, according to the clinical symptoms, fecal and histopathological examination, final diagnosis was an acute coccidiosis which is preventable and treatable in Japanese quails.
Key words: Coccidiosis, Japanese quails, Oocyst, Natural infection

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Diagnosis and treatment of Aspergillosis in an ostrich farm

Karimi I[1] , Rajabi M[2*] , Hatami A[2],Abbasi H[2]
[1]Department of pathobiology ,Faculty of Veterinary Medicine, University of Shahrekord, Shahrekord, Iran;
[2]Veterinary student at Faculty of Veterinary Medicine ,University of Shahrekord, Shahrekord, Iran
[*] **Corresponding author's email:*milad.vet91@gmail.com***

Objectives: Aspergillosis is a fungal infection caused mainly by Aspergillus fumigatus and A. flavus, recognized as an avian disease since 1815, which generally involves the respiratory tract. Several Aspergillus infections have been reported in the respiratory tract of the ostrich . The aim of present study is to reporting the necropsy finding of Aspergillosis in an ostrich and the following treatment evaluation.
Materials and Methods: On September 2013, four dead ostriches (7 months) from an ostrich farm with 150 ostriches were presented to the department of poultry disease of the Shahrekord University, Shahrekord, Iran. History and clinical signs of the case were hair loss over head and around eyes, long term faintness, recumbency and death. Some of crows that lived around the farm had similar symptoms. At necropsy there was a mould 3-4 cm in diameter in the left air sac, grayish white nodules about 1-2 mm in diameter on the left lung and pleura, left air sac thickening and enteritis. In direct examination active form of mycelia were seen by KOH. Samples of plural membrane, lung, air sac and jejunum were fixed in 10% buffered formalin and transmitted to the histopathology lab of the Shahrekord University for routine histological examination.
Results and conclusion: for histopathological examination tissue sections were stained with hematoxylin and eosin as well as with the periodic acid-schiff (PAS) staining method. Under light microscope, there were leakage of fibrin, infiltration of heterophils and mononuclear cells and organization of fibrin exudate in the air sac. Also severe hyperemia in the lung and small size granules were seen on the pleura. Granules had central caseous necrosis surrounded by giant cells, macrophages, lymphocytes and plasma cells. Formation of connective tissue was seen around the necrotic foci. Transverse sections of mycelia were seen in necrotic area with PAS staining technique. According to the case history, necropsy findings and histopathplogical examinations the lesions were diagnosed as a respiratory aspergillosis. Itraconazole (10 mg/kg) for one week were recommended for birds that have the same clinical symptoms in the farm. The response of the treatment procedure was very well.
Keywords: Aspergillosis, Ostrich, PAS

Natural infection of domestic fantail pigeons (*Columba livia*) with *Sarcocystis spp.*in Iran

Monireh Khordadmehr[1], MoeinZehtab- Najafi[1*], Vahid Reza Ranjbar[2], Parisa Shahbazi[1]
[1] *Department of Pathobiology, Faculty of Veterinary Medicine,University of Tabriz*
[2]*Razi Vaccine and Serum Research Institute, Marand, Iran*
Corresponding author's email:moein.zehtab91@ms.tabrizu.ac.ir

Objective: A large number of *Sarcocystis spp*. may infect birds as intermediate hosts, but wild *Columbiformes*, which include pigeons, are rarely affected.To date, little research has been done in this area. Recently, some researchers reported an emerging neurologic disease with lethal outcome for domestic pigeons (*Columba livia*f. *domestica*) in Berlin, Germany, caused by a novel *Sarcocystisspp.*. In the present paper, is described natural infection of two pigeon flocks (with 94 pigeons) with sarcocystosis which had neurological clinical signs.
Materials and methods: The owner of two fan tail pigeon (*Columbia livia*) flocks complained of a neurological disease- despite the use of Newcastle disease vaccine- manifested by progressive depression, torticollis, paralysis, trembling, and 23.4% mortality. Six new dead bird carcasses were chosen for postmortem inspection. According to the clinical signs, we suspected to neurotropic velogenic form of Newcastle disease at first. For this reason, the viscera and trachea were removed and opened for macroscopic examination. Interestingly, all of the visceral organs were normal, macroscopically. For more confirmation, tissue samples collected from various organs for pathological studies which were processed by conventional methods for preparation of paraffin wax sections. The sections were stained with haematoxylin and eosin and studied with light microscope.
Results and discussion: At pathological study, a large number of microscopic *sarcocystis* cysts were observed in tunica muscularis mucosa of gizzard (specially) and pectoral muscles. There were a large number of mononuclear inflammatory cells, hyaline degeneration and necrosis around degenerated cysts. In non- degenerated cysts, the cyst wall seemed smooth or slightly wavy by light microscope. Earlier literature recently was reported an emerging neurologic disease with lethal outcome for domestic pigeons (*Columba livia*f. *domestica*) in Berlin, Germany, caused by a novel *Sarcocystis*sp. Clinical signs in naturally infected pigeons, which were similar to those caused by *Paramyxovirus*-1 or *Salmonella typhimurium*infection, were depression, polyuria, torticollis, opisthotonus, paralysis, trembling, and death. In the present paper, the results of pathological examination suggested that the muscles of the gizzard could be a convenient place for future research of *sarcocystis sp.* in the pigeons. Because of the knowledge about this parasite is scare, more research in these fields is needed.
Key words: Natural infection; Pigeons; Sarcocystosis; Neurological signs

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Comparison of two measurement methods in determination of albumin values in peritoneal ascites of broilers

Taherian M[1 *], Nikousefat Z[2], Rahimi M[2]
Faculty of Veterinary Medicine, Razi University, Kermanshah, Iran
Department of Clinical Sciences, Faculty of Veterinary Medicine, Razi University, Kermanshah, Iran
Corresponding author's email: mostafataheryan@yahoo.com

Objectives: Nowadays, enhancing growth index in fowl industry lead to peritoneal ascites which caused a huge burgeon in our country. Therefore, evaluation of biochemical values in peritoneal cavity considered important in monitoring health status derived from albumin/globulin index.
Materials & Methods:70 numbers of chicken broilers affected with ascites were selected from different herds for abdominocenthesis before tissue necropsy. Cytology evaluation and biochemical analysis were performed with Hitachi 717 autoanalyzerconcurrently with protein electrophoresis (Panso- S method) on the aspirated fluids.
Results & Conclusion: Results showed that the etiology of ascites varied from modified transudate to bacterial exudate in cases with complex CRD. However, cellular debris, hemocidrophages, many segmented heterophils macrophages and few mesothelial cells were evident accompany with intracellular bacterial infection in severe exudates. Protein values obtained from autoanalyser were not compatible with estimated fractions in protein electrophoresis. Biochemical autoanalyser results were based on BCG (Brom Cresol Green) method for evaluation of albumin values. In avian with increased immunoglobulin, the performed color showed cross reaction with wave length recommended for albumin in mentioned method and showed false rise in determination of albumin value. However, protein electrophoresis considered abnormal only if albumin is low or alpha-1 or alph-2 globulin fractions were greater than 0.8 g/dL or beta or gamma globulin fractions were greater than 0.57 g/dL. Conclusively, protein electrophoresis found as a reliable method in evaluation of albumin values in broiler chickens.
Keywords: Albumin, Ascites, BCG, Protein electrophoresis, Broiler

Detection of motile *Salmonella* spp. from broiler flocks in Khorasan Razavi and determination of serogroup and antibiotic susceptibility of the strains.

[1]Alireza Koochakzadeh, [2]majid kazemnezhad*, [3]mehran noorafar, [4]masood akbari sultan abad, [5]Reza ghafourzadehYazdi, [6]Amin Abbasijanatabadi, [7]Hosein jahanian, [8]Nima farhadifar, [9]ebrahim faramarzi

Salmonella spp. are zoonotic enteric bacteria able to infect poultry, humans and livestock. The aim of this study was to investigate the prevalence of *Salmonella* (spp.) and to determine antibiotic susceptibility, serogrouping of the isolates. The fecal samples of 90 broiler flocks in Khorasan Razavi were collected during the year (2012-2013), the samples were cultured in enrichment and selective media and the serogroup and antibiotic susceptibility of the detected strains were obtained. Results indicated that *Salmonella* was detected in 38.8% (n=35) of broiler flocks. Strains of serogroup D, which accounted for 65.7% of total isolates, were the most common isolates. and 34.2 % were belonged to C serogroup. In vitro antibiotic activities of 15 antibiotic substances against the isolates were determined by disc diffusion test. the resistance to Amoxicillin, Lincospectin, Tetracycline, oxytetracycline, Doxycycline, chlortetracycline and Neomycin was observed in 94.2, 88.5, 85.7, 85.7, 80, 77.1 and 71,4% of the isolates, respectively. The most effective antibacterials were Furazolidone, Trimethoprim-Sulfamethoxazole, Ceftriaxone and Gentamicin with the susceptibility rates of 100, 94.2, 94.2, and 85.7%, respectively. Noticeably, intermediate susceptibility to Florfenicol, Ciprofloxacin, Difloxacin and Enrofloxacin was observed in majority of the isolates. All strains showed multiple resistance. In this study, *Salmonella* were detected from 38.8% of broiler flocks in Khorasan Razavi.And according to various antibiotic resistant *Salmonella*, antibiogram seems essential for effective treatment. To conclude more precisely about the excretion status of *Salmonella* strains in broiler flocks a more perfect study with more samples in different parts Iran should be conducted.

Key words: *Salmonella*, serogroup, broiler flocks, antibiogram, detection

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Preparation and Production of Polyclonal Antibody against Infectious Bursal Disease Virus

Amir Shabdini Pashaki[1], Mehdi Aminafshar[1], Mohammadreza Safarnejad[2], Seyyeddavood Hoseini[3], Aliasghar Sadeghi[1], Meisam Tabatabaei[4]

[1]Department of Animal Science,Faculty of Agriculture and Natural Resources,Tehran Science and Research Branch, Islamic Azad University, Tehran, Iran, [2]Department of Plant Viruses, Iranian Research Institute of Plant Protection, Tehran, Iran, [3]Razi Vaccine and Serum Research Institute, Arak, Iran, [4]Agricultural biotechnology research institute of Iran(ABRII)

Objective: This project aimed to obtain polyclonal serum against IBDV fromimmunized rabbits with infectious bursal disease vaccine. And after labeling, this antibody could use in several serological assays to detect infectious bursal disease.

Material & methods: The virus emulsified with oil vaccine were prepared for inoculation in rabbits. The titration of serum raised after 1st injection and 4 additional injections were performed. Then antibody extracted from total blood and purified with affinity chromatography using protein A column. The purified immunoglobulin was conjugated with alkaline phosphatase enzyme. The purified antibodies and conjugates were applied for efficient detection of infected animals in double antibody sandwich enzyme-linked immunosorbent assay (DAS-ELISA) and dot immunosorbent assay (DIBA).

Results & Conclusion: Complementary DIBA analysis performed to evaluate the specificity of the prepared antibody against vaccine, purified virus and virus extracted from bursa. The results proved binding ability of antibody against purified vaccine better than vaccine. Applying DAS-ELISA proved the ability of prepared antibodies for successful detection and differentiation of infected samples from the healthy ones at a dilution of 1:250. Serial dilutions of prepared polyclonal antibody proved that the dilution of 1:1000 could be applied for further diagnostic purposes. This antibody was proven to be very powerful tools to detect the infectious bursal disease virus in chickens.

Keywords: ELISA, Infectious Bursal Disease (IBD), DIBA, Polyclonal Antibody

Impact of of Phytic acidon performance, enzyme activities and antibody titres againstNewcastle diseaseinbroilers fed bynutritionally marginal diets

Zandieh MA[1]*,Ghahri H[2]
[1]*YoungResearchersClub,UrmiaBranch,IslamicAzadUniversity,Urmia,Iran*
[2]*Faculty of veterinary medicine, Urmia Branch, Islamic Azad University, Urmia, Iran*
Correspondingauthor'semail:**ma.zandieh@gmail.com**

Objectives: Anexperimentwasconductedtostudytheeffectofmicrobialphytase(Natuphos10000) supplementation in chicks fed by Nutritionally Marginal Diets on performance, plasma minerals, serum enzyme activities and humoral immunity.
Materials&Methods: Treatments were replicatedwith4 pensof12chickseach.Dietswere Corn-wheat-soybean meal based with the same nutritional specifications, differing only in the concentration of Ca and nonphytate P (Ca-nPP). The treatments were: 1) adequate-Ca-nPP diets (CTL+); 2) Low-Ca-nPP diets (CTL-); 3 to 5 = diet 2 plus 600, 800, or 1000 phytase units (FTU) /kg of diet from Natuphos.
Results&Conclusion: The low-Ca-nPPdiets caused a negative effect on feed consumption compared to the CTL+ diet. Performances of chicks fed with low-Ca-nPP diets and phytase were comparable to those obtained with the low-Ca-nPP and adequate-Ca-nPP diets. By decreasing Ca-nPP levels in the diet, plasma Ca concentrations, aspartate aminotransferase (AST) and lactate dehydrogenase (LDH) activity were reduced and alkaline phosphatase (ALP) activity increased. Phytase supplementation increased plasma Ca level and serum AST activity and reduced ALT, ALP and LDH activities.
Antibodies against Newcastle disease virus vaccine were enhanced of 14 to 42-d-old broilers in the low Ca-nPP diets with phytase addition. Increasing the phytase dose to 1,000 FTU /kg did not improve immune function further than 800 FTU /kg. The results suggest that application of phytase in nutritionally marginal diets could enhance antibody titer of 14- to 42-d-old broilers, suggesting that both deficient in Ca-nPP and phytase may have a role in immune competence.
Key words: Phytic acid, Performance, Enzyme Activities, Newcastle disease, Broiler

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Effects of Different Levels of Aloe-Vera on Some Blood Biochemical parameters in broiler chicken

Ali Mahdavi[1], Gholamali Jelodar[2],Morteza Saberi[3],Ehsan Pourafshar[3], Mohammad Sadegh Ghodrati[4,*], Mohsen Taherdost[4], Saeed Omidbakhsh[4], Farshid Raeisi[4]

1Assistant professor, Faculty of veterinary medicine, Semnan university, Semnan, Iran
2Assistant professor, Faculty of veterinary medicine, Shiraz university, Shiraz, Iran
3Laboratory technician, Faculty of veterinary medicine, Semnan university, Semnan, Iran
4DVM student, Assistant professor, faculty of veterinary medicine; Semnan university, Semnan, Iran
Corresponding author E-mail: m.sadegh.ghodrati@semnan.ac.ir

Objects: Blood work is a very important diagnostic tool that provides a significant amount of information about body health.A biochemical profile is a blood test that assesses the function of internal organs. Understanding the biochemical profile can be difficult but reveals a wealth of information.In other hands because of side effects and residual compounds in the carcass from the past few decades veterinarians are trying to use different herbal plants in the diet instead of chemical compounds and drugs. There aredifferent kinds of plants which have unknown effects on biochemical parameters which can lead to misinterpretation therefore study on the effect of these plants sound to be necessary. Thus, this study carried out to evaluate the effects of Aloe-Vera gel on some of the biochemical parameters in broilers chickens.
Materials & Methods: This study was conducted in completely randomized design by using 240 (one-day-old Ross 308) broiler chicken. Chickens were divided into 5 groups and 6 replicate, each group was contained 48 chickens (Control group, treatment 1 received virginiamycin (T1), treatment 2 (T2), 3 (T3) and 4 (T4) received 1%, 2% and 3% Aloe-Vera gel respectively). Blood samples were collected in 14, 24 and 42 days and serumseparated. Total protein (TP), Albumin, Globulin, glucose and Alkaline Phosphatase (ALP) were measured by using Pars Azmoon kites. Finally data were analyzed by GLM procedure using the SAS software (SAS, 2000).
Results & Conclusion:obtained results indicated that TP have no significant differences in 28 and 42 days and only statistically significant difference was observed in 14 days such that T4 have the highest TP value ($P<0.05$). Albumin and ALP values in all of the three days did not indicate any significant difference in comparison with control group ($P>0.05$) while glucose values in all three days shown a significant difference ($P<0.05$). Regarding result to globulin demonstrated that the only significant difference was seen in day 14 and belonged to T4 ($P<0.05$). In the past few decades scientist reveals that the majority of the herbal plants have anti-anxiety activities. On other hand poultry farms have extremely quiet and without stress environment so plant could not leave its effectiveness because anti-anxiety plants can affect in a stressful circumstance. Totally obtained results indicate that Aloe-Vera cannot do a significant effect on biochemical of broilers chickens but further studies need to crystalize the effect of Aloe-Vera on the biochemical profile of broilers chicken.
Keywords: Poultry, Broilers Chicken, Aloe-Vera, biochemical profile, Virginiamycin.

Selenium in water of poultry farms in Garmsarcityby HG-AAS

[1-1-] **Vida Pirzamani[1], Amir Rabiei[2],Iman Salamatian[3*],S. Omid Babaei[4]**

[1]Assistant Professor,Department of quality control and food hygiene,Faculty of Veterinary Medicine, Islamic Azad University, Garmsar Branch, Iran;[2]Graduate student of Veterinary Medicine, Faculty of Veterinary Medicine, Islamic Azad University, Garmsar Branch, Iran;[3]Undergraduate student of Veterinary Medicine, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Iran;[4]undergraduate student of Veterinary Medicine, Faculty of Veterinary Medicine, Islamic Azad University, Garmsar Branch, Iran

Corresponding author's email: iman.salamatian@gmail.com

Objectives: Selenium is an element of environmental, biological and toxicological importance. The importance of selenium is directly related to the issue that this element shows only a marginal range between the nutritious and toxic effects upon exposure. In estimation of selenium requirements in the diet, water selenium content is seldom, if at all, taken into consideration. This cross-sectional study was done to determinate selenium content in water samples from wells and taps of Garmsarpoultry farms.

Materials & Methods: In this study, a cross-sectional research was conducted in 1393. Garmsar city divided into 5 blocks (north, south, west, east and central) and then randomly water sampling of 55 wells and 25 taps was done. Determination of selenium content was performed by hydride generation atomic absorption spectrometry (HG-AAS) and finally all results were analyzed by one-way analysis of variance (ANOVA).

Results & Conclusion: In samples from wells and taps, selenium concentration averaged 0.482 and 0.326 ppm, respectively. Results showed that selenium contents detected in 22.5 percent of poultry farm water samples are within standard range (0.2-0.3 ppm).Thus, it is necessary for nutritious requirement calculations to notice selenium level in both water and other diet elements together, in order to avoid toxicity and gain physiological advantages of this essential trace element.

Keywords:selenium, water, hydride generation atomic absorption spectrometry, poultry farm

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The impact ofinulinand phytase ongut morphology,characteristics and growth performance in broiler chickens

Zandieh MA[1]*, Habibi M[2]

[1] Young Researchers Club, Urmia Branch, Islamic Azad University, Urmia, Iran
[2] Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran

Corresponding author's email: ma.zandieh@gmail.com

Objectives: Phytic acid is present in grains and seeds as a mixed salt, phytate, which refers to the phytic acid molecule chelated to mineral cations, proteins, starch, lipids, or both starch and lipids. Chickens have insufficient or limited phytase, the enzyme necessary for breaking down of the phytate molecule and subsequent release of phytate-bound phosphorus in plant feedstuffs. Inulin generally is a mixture of linear polymers and oligomers of fructose linked by a β (2–1) glycosidic linkage with a glucose terminal unit. Use of inulin-type fractals in poultry feeding may stimulate the growth or activity of beneficial intestinal bacteria. The aim of this study was to investigate the effects of inulin and phytase on gut morphology, characteristics and growth performance in broiler chickens.

Materials & Methods:200 one-d-old broiler chicks were randomly assigned to 1 of 5 dietary treatments with 4 replicate for 42 days. Treatments were: 1) control [basal diets supplemented]; 2, 3) basal diets supplemented plus 600 and 1000 phytase units/kg of diet respectively; 4, 5) basal diets supplemented with 10 and 20 inulin g/kg of diet respectively. On d 42, 8 birds per treatment were sacrificed to evaluate gut morphology. Performances of broilers were measured by weighting body organs, feed intake rate and body weight gain of broilers and finally feed conversion ratio (FCR) and, villus height:crypt depth ratio in the jejunum of broiler chickens at 35 d of age were calculated.

Results & Conclusion: The results of this study showed that inclusion of phytase and inulin had significant effects on body weight gain, feed intake and gut morphology but their effects on FCR and body organs weight (such as crop, proventriculus and spleen) were not totally significant.The results from the current study demonstrated that dietary inulin had little effect on jejunalhistomorphology.Inulin and phytase may beneficially affect the host by improving the survival and implantation of live microbial dietary supplements in the gastrointestinal tract which cause better performance as in our study. It could also be due to a possible increaseof starch digestibilityortoanincreasedavailabilityofprotein. Finally, we concluded that inclusion of phytase and inulin both could improve performance and gut morphology of broilers.

Keywords: Inulin, Phytase, Broiler, Antibody titters, Gut morphology

The impact of phytase andinulinon antibody titres against Newcastle disease oninbroilerchickens

ZandiehMA[1]*,HabibiM[2]
[1]*YoungResearchersClub,Urmia Branch,Islamic Azad University,Urmia,Iran*
[2]*Faculty of Veterinary Medicine,University of Tehran,Tehran,Iran*
Correspondingauthor'semail:ma.zandieh@gmail.com

Objectives: The aim of this study was to investigate the effects of the impact of inulin and phytase on antibody titres against Newcastle disease in broiler chickens. Inulins are a group of naturally occurring polysaccharides produced by many types of plants, industrially most often extracted from chicory. The inulins belong to a class of dietary fibers known as fructans. Phytic acid is present in grains and seeds as a mixed salt, phytate, which refers to the phytic acid molecule chelated to mineral cations, proteins, starch, lipids, or both starch and lipids. Chickens are lacking or limited in phytase, the enzyme necessary for breakdown of the phytate molecule and subsequent release of phytate-bound phosphorus in plant feedstuffs.
Materials&Methods:200 one-d-old broiler chicks were randomly assigned to 1 of 5 dietary treatments with 4 replicate for 42 days. Treatments were: 1) control [basal diets supplemented]; 2, 3) basal diets supplemented plus 600and 1000 phytase units/kg of diet respectively; 4, 5) basal diets supplemented with 10 and 20 inulin g/kg of diet respectively. Broilers were vaccinated with Newcastle disease vaccine by eye drop on d 7 and 28, then growth performance and antibody titer was determined weekly.At the age of 9 days, all chicks were vaccinated withHitcherB1NDVvaccinebyeyedropperandkilled vaccine (NDV). Blood samples were collected chickens in all groupsand their sera were separated and inactivated at 56°C for30 min and kept at -20°C until analysis for the level ofNDVantibody.SerumAntibodytiter wasmeasuredbyhemagglutination-inhibitionteston d7, 14, 21, 28, 35 and 42.
Results&Conclusion: The results of this study showed tha**t** inclusion of inulin and phytase had significant effects on anti-body titers against Newcastle disease. Since the primary role of a diet is not only to provide enough nutrients,antibody titer against lots of diseases such Newcastle disease is affected using phytase and inulin as in our study antibody titer rate showed significant differences from third week until the end of study among treated and control groups. Inulin and phytase are substrates that facilitate the growth. A way of potentiating the efficacy inulin and phytase may be beneficially affects the host by improving the survival and implantation of live microbial dietary supplements in the gastrointestinal tract.
Keywords: Inulin, Phytase, Broiler, Antibody titters, Newcastle disease

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The Effect Of Different Levels Of Energy And Protein With Constant Ratio On Performance, Carcass Characteristics And Serum Lipids On Broiler Chickens From 27- 42 Days Of Age

M. Mousavi[1]*, M, Chaji[2]
1,2. Department of Animal Science, Ramin (Khuzestan) Agricultural and Natural Resources University, Mollassani, Khuzestan, Iran
Corresponding Authors email:mona.moosavi61@gmail.com

This study was carried out to determine the effect of different levels of energy and protein with constant ratio on performance, carcass characteristics and serum lipids on broiler chickens from 27- 42 days of age. A total 120 broilers of Ross 308 strain were reared for 42 days. The broilers divided in to 3 equal treatment groups and each treatment had replicate with 12 chickens per replicate at random. Diets were formulated according to national research council (NRC, 1994). . Three experimental diets were formulated to have 3 levels of ME and CP, respectively in each phase: 23%, 21% and 20% CP with 3031.6, 2768 and 2636 *kcal/kg* in the starter phase; 22%, 20% and 19% CP with 3174.3, 2886 and 2742 *kcal/kg* in the grower phase; and 20%, 18% and 17% CP with 3224, 3063 and 2902 *kcal/kg* in the finisher phase; The ratio between CP and ME was maintained at 131.8, 144.3 and 161.2 in the starter, grower and finisher respectively. Wight gain was linearly decreased ($p<0.05$), whereas the feed intake and feed conversation ratio were increased ($p</0.05$), linearly as dietary protein and energy decreased in grower, finisher and overall experimental periods. Protein efficiency ratio and Energy efficiency ratio were decreased ($p<0/05$), when protein and energy reduced in grower, finisher and whole of experimental diets. But Use of different levels of energy and protein with constant ratio on carcass weight (CW), percentage of carcass, breast and thigh and other parameters of carcass such as liver, heart weight and abdominal fat had no significant effect ($p>0.05$). Feeding broiler chickens low ME and low CP with ME:CP ratio has adversely affected the growth performance, but carcass parameter not affected without any increase in liver weights and abdominal fat content. Different levels of energy and protein with constant ratio caused no significant influence in blood concentration of cholesterol, LDL and VLDL ($p>0.05$). But there was significant influence on triglycerids and HDL concentrations.
Key words: *Energy, Protein, Constant ratio, Broiler, Serum lipid*

Unusual cutaneous fowl pox outbreak in a commercial layer farm

Amir Ali Amiri[1], Nava Eram[2]
1- Poultry Specialist Clinician, Mehr Poultry Clinic
2- PhD student of Avian Diseases, University of Tehran
Corresponding author: a2_amiri@yahoo.com

Objective: Pox is a common viral disease of commercial poultry as well as pet and wild birds.This disease can cause significant economic losses associated with decreased egg production, reduced growth and increase mortality. Pox is a slow spreading disease characterized by the development of the discrete nodular proliferative skin lesions on the non feathered parts of the body (cutaneous form) or fibrinonecrotic and proliferative lesions in the mucous membrane of the upper respiratory tract, mouth, and esophagus (Diphtheritic form) or concurrent systemic form.
Material and method: We report an outbreak of fowl pox disease in a large commercial layer farm in Varamin, Iran. The flock was 60 week LSL, which consisted of 50000 layers in 4 houses.One of four houses was affected. The discrete nodular proliferative skin lesions of whole bodies except both legs were seen. Mortality rate was between 30 to 50 hens each day. The egg production rate was reduced 10 percents. Another problem of the flock was high loads of poultry red mites in the houses especially in the house with the lesions. Also the flock had been vaccinated against pox virus once at 12 week of age.
Conclusion and result: A diagnosis of fowl pox was achieved by histopathology and PCR. The interesting point was positive PCR test for the red mites samples of the farm. So red mites are considered to be an important vector for the spread of fowl pox virus in this flock. It is an unusual manifestation of the disease. Samples showed hyperplasia of epidermis and Bollinger bodies were seen in the pathology examination. Some strains of fowl pox virus can affect the birds in spite of proper vaccination. Age may not be important in regard to resistance. Because of the important role of *Dermanyssusgallinae* in transmission of this disease red mite control is essential. And also it appears that we will need new vaccines from new strains of fowl pox viruses.
Keywords: Fowl pox, *Dermanyssusgallinae*, PCR, Histopathology, Layers

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Prevalence of *Extended-Spectrum Beta-Lactamase(TEM)* producing *Escherichia Coli* in poultry Colibacillosis by polymerase chain reaction

KafshdouzanKh*[1], Pazhand O[2], Moradi Z[1]
[1]Department of Microbiology, Faculty of Veterinary Medicine, university of Semnan, Iran*
[2]Department of Microbiology,Faculty of Medicine, semnan, Iran
Corresponding author's email:kafshdouzan@semnan.ac.ir

Objectives: presence of *Extended-Spectrum β-lactamase (ESBL)* such as *TEM (Temoneria)* is a major reason for resistance of *Enterobacteriaceae* to β-lactam antibiotics in poultry industry. Since there is no detailed description in prevalence of TEM in *Escherichia coli* isolates in *Semnan,Iran*, the purpose of this study was determination of prevalence of *ESBL* producing *Escherichia coli* and bla_{TEM} type gene in broiler chicken farms in Semnan.
Materials and methods: In this study, Of 186 isolates collected from poultry farms and veterinary laboratory, 50 *E. coli* isolated from cloac of apparently healthy broilers and 50 *E. coli* isolated from viscera of broilers suspected colibacillosis. After identification of isolated by differential biochemical tests, the Combined disk method according to *CLSI*(*Clinical and Laboratory Standards Institute 2014)* guidelines (by MAST® $D67C^5$ set) was carried out for detection of *ESBL* production. bla_{TEM} gene was determined by PCR amplification.
Results & Conclusion: the results of this study showed that 32% of strains produced *ESBLs*(n=17cloacal, n=15 visceral group). The frequency of bla_{TEM} among *ESBL* producing isolates was 40.6%. According to the results, the prevalence of *ESBL* producing *E. coli* is relatively high in both studied groups. This finding provides evidence that healthy broilers in Semnan poultry farms could be as an important reservoir for dissemination of antimicrobial resistance by contaminating food chain. Therefore it is essential to plan on continuous surveillance of livestock-rearing and our food industries to monitor the *ESBLs* producing microorganisms.
Keywords: antimicrobial resistance, combined disk method, *Escherichia coli*, *Extended-spectrum β- lactamase (ESBLs)*, PCR

Prevalence of Extended-Spectrum Beta-Lactamase(CTX-M) producing Escherichia Coli in poultry Colibacillosis by polymerase chain reaction

Kafshdouzan Kh*, Staji H, Sahafi E
Department of Microbiology, Faculty of Veterinary Medicine, university of Semnan, Iran
Corresponding author's email: kafshdouzan@semnan.ac.ir

Objective: Presence of Extended Spectrum Beta-lactamase (ESBL) like CTX-M gene plays an important role in spreading beta-lactam antibiotic resistance in the Enterobacteriaceae family. The resistance of gram-negative bacteria, such *as Escherichia coli*, to different antimicrobial agents especially beta-lactams, has increasingly been reported. Antibiotic resistance can cause the lack of response to treatment and it is transmissible by MGEs **.**This study was conducted to determine the prevalence of ESBL in poultry *Escherichia coli* isolates.
Material and methods: In this study, Of 186 isolates collected from poultry farms and veterinary laboratory, 50 *E. coli* isolated from cloac of apparently healthy broilers and 50 *E. coli* isolated from viscera of broilers suspected colibacillosis. After identification of isolated by differential biochemical tests, the Combined disk method according to *CLSI*(*Clinical and Laboratory Standards Institute 2014)* guidelines (by MAST® D67C[5] set) was carried out for detection of *ESBL* production. bla_{TEM} gene was determined by PCR amplification.
Results & Conclusion:: The results showed 27% of isolates were ESBL producerand 18% contained CTX-M gene. The frequency of ESBLs in visceral samples (28%) were significantly higher than cloac samples (26%), but frequency of ESBLs were statistically equal in both visceral and cecal samples.
The higher prevalence rate of CTX-M gene compared to ESBLs in this study can relate to presence of other genes that coding beta-lactamase enzymes. The rate of ESBLs producing strains is highly increasing, therefore, using an appropriate treatment protocol based on the antibiogram pattern of the strains is highly recommended.
Keywords: Extended Spectrum Beta-lactamases, *E coli*, CTX-M, Combined disk test

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Influence of Diets Supplemented with Silver Nanoparticles Coated on Oxidative enzymes of Broiler Chickens Zeolite on

Smaili M[1], Hashemi SR[1], Davoodi D[2], Jafari ahangari Y[1], Hassani S[1] & Shabani A[1]
[1]*Faculty of Animal Science, Gorgan University of Agricultural Sciences and Natural Resources, Gorgan, Iran.*
[2]*Nanotechnology Department, Agricultural Biotechnology Research Institute of Iran, Karaj, Iran.*
Corresponding author email: hashemi711@yahoo.co.uk

Objective: Silver nanoparticles and other forms of silver are widely used nowadays for their antibacterial activity. Then, this study was carried out to evaluate the effect of different levels of silver nanoparticles coated on zeolit on Oxidative enzymes.
Materials & Methods: A total of 375 one-day old broilers (Cobb 500) were randomly divided into 5 treatments and 5 replicates of 15 birds which were kept on the floor pens. Treatments were: 1) control diet, 2) control diet supplemented with 1% zeolit and 3, 4, and 5) control diet supplemented with 1% zeolit coated with %0.25, %0.5 and %0.75 nanosilver. To evaluate the level of oxidative enzyme, on day 42 of production, two chickens were selected randomly and 3 mL blood samples were taken from wing vein. Blood samples were centrifuged at 3000 rpm for 10 min. Determinations of oxidative enzymes such as the superoxide dismutase (SOD), glutathione peroxidase **(**GPX) and malondialdehyde (MDA) were performed using an automated biochemical analyzer (Mindray, BS-200, Mainland, China) and industrial kits of Randos company used for each oxidative enzyme (GPX and SOD). Malondialdehyde (MDA) were measured manually.
Results & Conclusion: Results showed that the use of silver nanoparticles coated on zeolit at %0.5 increase the superoxide dismutase level compared to the control treatment and diet supplemented with 1% zeolit and silver nanoparticles coated on zeolit at %0.75 (P<0/05). There were no significant differences among treatments on malondialdehyde (P>0/05) and glutathione peroxidase (P>0/05). In conclusion, results showed that the silver nanoparticles coated on zeolit can improved the oxidative enzymesin broiler chickens.
Keywords*:* Broiler chickens, zeolit, oxidative enzymes, silver nanoparticles.

A comparativestudyofdifferentbreeds and routes of administration on antibody response against Newcastle disease in commercial turkeys by ELISA and HI tests

Eshaghnia SAR[1], Sadrzadeh A[1]*, CharkhkarS[2], VaziriSH[1], Tahanchi R[1]

[1]Department of Clinical Sciences, Faculty of Veterinary Medicine, Islamic Azad University, Garmsar Branch, , Iran

[2]Department of Clinical Sciences, Faculty of Veterinary Medicine, Islamic Azad University, Science and Research Branch, Tehran, Iran

Corresponding author's email: avestasadr@yahoo.com

Objectives: Newcastle disease is a highly contagiousviral infection affecting many species of domestic and wild birds worldwide. Vaccination is the only way to deal with it. The amount of immunity depends on the vaccination program and method of administration.In addition, there is some evidence that the breed of turkey effects on the vaccination results. The aim of the present study is to evaluatethe effects of the various breeds and routes of administration on antibody response againstNewcastledisease**.**In this study two breeds (Grade Maker and BUT Premium) of turkey and two routes (intraocular and spray) of vaccination againstNewcastledisease have been compared**.**

Materials & Methods: 160 turkey chicks ofeachbreeds (Grade Maker and BUT Premium) were randomly divided intothree major groupsi.e. A, B and C. Then chicks of former three groups were subdivided into A1, A2, A3, B1, B2, B3, C1 and C2 containing 20 birds each. Birds in A1, A2 and A3 were vaccinated with ND vaccine Vitapestintraocularly on the first day while birds in B1, B2 and B3 were vaccinated spray. Groups C1 and C2 were as the vaccine control group.At days 1, 7, 14, 21, 28, 35, 42, 49, and 56, serum samples were collected from the turkeys and used to estimate the antibody levels against Newcastle Disease virus by using Haemagglutination Inhibition (HI) and ELISA tests.

Results & conclusion: Theresults showed higher antibody level in Grade Maker breed vaccinated intraocularly when compared with those vaccinated spray. There was significant difference ($p < 0.05$) between titers of turkeysin two methods of vaccination (intraocular and spray) on days 7 and 14.While the results of BUT Premium breed showed that spray applicationhas responded better than eye drop,although it did not differ significantly. This study indicated thatthe type of breed and the route of vaccination are an effective on antibody response against Newcastle disease. It was concluded that two various breeds of turkey have different responsesto the same vaccination program, as well as the results of two various methods of vaccination in a commercial breed of turkey are different.

Key words: Newcastle disease, Intraocular, Spray, HI, ELISA,Turkey

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Isolation and identification of *Ornithobacterium rhinotracheale* in slaughtering broiler chicken flocks of Khoozestan province

Mayahi M[1*], Gharibi D[2], Talazadeh F[1], Ghadimipour R[2,3]

[1]Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Iran;

[2]Department of Pathobiology, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Iran;

[3]Department of Research and Development, Razi Vaccine and Serum Research Institute, Ahwaz, Iran

Corresponding author's email: ftalazade@gmail.com

Objectives: *Ornithobacterium rhinotracheale* (ORT) is a recently described species of bacterium associated with respiratory disease, growth retardation, mortality and decreased egg production in chickens and turkeys. It can cause a highly contagious disease in poultry, although the severity of clinical signs, duration of the disease and mortality have been found to be extremely variable. The aim of this study was to isolate of ORT and to characterize of this bacterium in slaughtering broiler flocks of Khoozestan province, southwest of Iran.

Materials & Methods: Tracheal swab samples were collected from 21 broiler flocks at an slaughterhouses. All of 210 tracheal samples were examined for the presence of ORT using bacterial cultures. After isolation and detection of microorganisms by cultural and morphological tests, the bacteria were identified on the basis of biochemical criteria.

Results & Conclusion: Twenty-three isolates from tracheal swabs of 4 flocks (19.04% out of 21 broiler flocks and 10.95% out of 210 tracheal swabs) were identified as ORT by bacteriological and biochemical tests. Statistically, there was significant difference between the rate of ORT isolation from various areas of the province ($P>0.01$). Results of present study indicated the presence of this organism in broiler chicken flocks, especially in the northern regions of the Khoozestan province.

Keywords: Isolation, Identification, *Ornithobacterium rhinotracheale*, ORT, Broiler chicken flocks

Determination of Chemical Composition and Mineral Contents of Kilka Fish Meal

Jahanian Najafabadi H*
Department of Animal Science, Faculty of Agriculture, Bu- Ali Sina University, Hamedan, Iran
Corresponding author's email: hjahanian@yahoo.com

Objectives: One of the most important problems of Kilka Fish meal (KFM) utilization in poultry diets is its variable nutritional value especially in protein and fat contents. The purpose of this study was to determine the chemical composition and mineral contents of KFM.
Materials & Methods: 10 composed samples of KFM were provided during two months sampling from rendering units of two industrial fish meal plants in Gilan province. Each composed samples of KFM were stored in -20°C until they were analyzed for chemical composition and mineral contents. The data were analyzed in a completely randomized design. Each sample was examined in 6 replication. Comparison of means was conducted by Duncan's multiple range test. The comparison of the average of chemical composition and mineral contents of the KFM samples with NRC (1994) data was conducted using two-sided t-test.
Results & Conclusion: The results of proximate analysis showed that the dry matter, ether extract, crude protein, crude fiber and ash contents had highly significant ($P<0.01$) differences among the KFM samples and their average values were 94.9, 24.2, 57.6, 0.78 and 15.1 percent, respectively. The gross energy value showed highly significant ($P<0.01$) differences among the KFM samples and its average value was 5496 Kcal/Kg. The values of major elements including Ca, P, Na, K, Cl, Mg and S had highly significant ($P<0.01$) differences among the KFM samples and their average values were 4.63, 2.77, 0.94, 0.61, 0.72, 0.35 and 0.52 percent, respectively. The values for minor elements including Fe, Cu, Mn, Zn and Se showed highly significant ($P<0.01$) differences among the KFM samples and their average values were 267.4, 7.8, 4.3, 88.6 and 1.75 mg/kg, respectively. According to the results of this study, it seems that the chemical composition and mineral contents of KFM is highly variable and must be evaluated continuously before its use in poultry diets.
Keywords: Kilka fish meal, chemical composition, mineral contents, diet, poultry, Iran

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Evaluation of Chemical Composition and Mineral Contents of Meat and Bone Meal

Jahanian Najafabadi H*
Department of Animal Science, Faculty of Agriculture, Bu- Ali Sina University, Hamedan, Iran
Corresponding author's email: hjahanian@yahoo.com

Objectives: One of the most important problems of meat and bone meal (MBM) utilization in poultry diets is its variable nutritional value especially in protein, calcium and phosphorus contents. The purpose of this study was to evaluate the chemical composition and mineral contents of MBM.
Materials & Methods: 10 composed samples of MBM were provided during two months sampling from rendering unit of one industrial animal slaughter-house in Fars province. Each composed samples of MBM were stored in -20°C until they were analyzed for chemical composition and mineral contents. The data were analyzed in a completely randomized design. Each sample was examined in 6 replication. Comparison of means was conducted by Duncan's multiple range test. The comparison of the average of chemical composition and mineral contents of the MBM samples with NRC (1994) data was conducted using two-sided t-test.
Results & Conclusion: The results of proximate analysis showed that the dry matter, ether extract, crude protein, crude fiber and ash contents had highly significant ($P<0.01$) differences among the MBM samples and their average values were 94.3, 22.4, 36.8, 5.6 and 24.2 percent, respectively. The gross energy value showed highly significant ($P<0.01$) differences among the MBM samples and its average value was 5347 Kcal/Kg. The values of major elements including Ca, P, Na, K, Cl, Mg and S had highly significant ($P<0.01$) differences among the MBM samples and their average values were 6.58, 3.91, 2.44, 0.76, 2.57, 0.83 and 0.96 percent, respectively. The values for minor elements including Fe, Cu, Mn, Zn and Se showed highly significant ($P<0.01$) differences among the MBM samples and their average values were 875.2, 76.9, 49.1, 78.4 and 0.28 mg/kg, respectively. According to the results of this study, it seems that the chemical composition and mineral contents of MBM is highly variable and must be evaluated continuously before its use in poultry diets.
Keywords: Meat and bone meal, chemical composition, mineral contents, diet, poultry, Iran

Survey of prevalence of class 1 and class 2 Integrons in E. coli isolated from poultry Colibacillosis in zabol

reza esmailzadeh dizaji, mohammad Jahantigh, younes Teymoori
jonah.t88@gmail.com

Escherichia coli is a commensal bacterium of the normal intestinal flora of humans and animals. In poultry, pathogenic strains of *E. coli,* known as Avian Pathogenic *Escherichia Coli* (APEC), can cause localized or systemic infections. Several authors suggest that the selective pressure consequent to the use of antimicrobials in humans and animals may promote resistance in both commensal and pathogenic bacteria, including *E. coli*. Integrons areone of resources to transferring Multidrug resistance gens among bacteria's. The aim of this study was Survey of prevalence of class 1 and class 2 Integrons in *E. coli* isolated from poultry Colibacillosis. In this survey a total 144 samples were collected form poultry suspected to Colibacillosis from 8 broiler farms and were transferred to laboratory of veterinary faculty of Zabol university in TSB. After applying some common biochemistry tests a total 100 *E. coli* were isolated. NuclearDNA of All isolates were extracted by boiling method and were screened for the presence of class 1 and 2 integrons with the related primers by PCR. In this survey 97 % (97/100) of isolates and 93% (93/100) isolates contained Integron class 1 and 2 respectively. In this survey prevalence of both class 1 and 2 integrons were significantly higher rather than other studies.

Phylogenetic typing of Escherichia coli isolates collected from broilers with Collibacillosis in Zabol

Younes teymoori , ahmad rashki, reza esmailzade dizaji
jonah.t88@gmail.com

Escherichia coli is an opportunistic organism which can cause Colibacillosis syndromes (colisepticemia, pericarditis, perihepathitis, salpingitis and …). *E.coli* has four phylogenetic groups including A, B1, B2 and D. Phylotyping is an adequate method to surveying the type of phylogenetic groups' dissipation of *E.coli* isolates in different regions. Present study was conducted to determine the groups of phylogenetic of *E.coli* in Zabolcity, So in order to determine frequency phylogenetic groups of *E.coli* in Zabol, 144 broilers suspected to Colibacillosis were sampled and samples were transferred to laboratory in TSB. After culturing and applying some common biochemistry tests, a total 100 *E.coli* were isolated. DNA of all isolates was extracted by boiling method and phylogenetic groups were determined by triplex PCR procedure. In this study 36 %, 27 %, 23 % and 14 % of 100 *E.coli* isolates were belonged to B1, D, A and B2 phylogenetic group respectively. Present study concluded that almost of *E.coli* which were collected from Colibacillosis in Zabol were belonged to B1 phylogenetic group
Key word: *Escherichia coli,* Phylogenetic, Colibacillosis, Zabol, Broiler

Comparisonof force molting methodson productionindex and eggquality of Japanese Quail (*Coturnix japonica)*

Falsafimanesh M[1], ZamaniMoghaddam A.K[2], Khajali F[3],Mehraei M.H[4],Heidari A[5*]
[1]Isfahan Veterinary Organization member, Isfahan, Iran; [2]Department of Clinical Sciences, University of Shahrekord, Shahrekord, Iran; [3]Department of animal Sciences, University of Shahrekord, Shahrekord, Iran;[4]Poultry Diseases resident, Shahrekord University, Shahrekord, Iran[5]Graduated DVM, Faculty of Veterinary Medicine, Shahrekord University, Shahrekord, Iran
Corresponding author's email:aliheidariiri@gmail.com

Objectives : Japanese quail(Coturnix japonica)is one of the most important commercial poultry worldwidewithanexcellent performancein egg production. Molting is natural process thatrefersto feather replacement in a periodic duration. Althoughincentivemechanismremains unclear, various effectivefactors, such as shortening thelength ofday, dietary changesandlimitedfood and waterhave been known. Force molting has been done solely foreconomic purposesandtoprolongthecycle ofreproductive inlayingpulletsduring the secondcycle of laywithout any replacement.We decided to compare three different methods offorce molting based onproduction, eggs andmeat qualityin comparison withtraditional method of feed deprivation.
Materials &Methods: For this purpose weused seventy two 70-day old femaleJapanesequails,withthe average weight of270±10g inthis study.Quailswere randomly divided into4 groups(molting methods). Each treatment group consists ofthreereplicates and in each replicate6 birds were housed.Treatment1: wheat brandiet; treatments 2: feed deprivation without waterrestrictions, treatments 3:90%alfalfa powder in basal dietandtreatments 4: 15000 ppmzinc oxide(ZNO)in basal diet. in all fourmethods, the period ofstress continueduntil25 to 30percent body weight loss(up to fourdays), and was followedby free basal diet.
Results &Conclusion :By comparing thefour different methods of force molting, the results show thatindices ofday egg production, egg weight, feed efficiency, egg qualityand etc. expressedbetter resultsorat leastthe same asfeed deprivation, especially intreatment 4. Significantdifferences($P<0/05$) was seen in the case oftheweight loss of reproductive system and oviductweightin birdswas observedamong thefeed deprivations treatmentandother treatments.Accordingtoourresearchandtheobtained results, it can be concludedthat force molting based on nutritionalstrategies, could be performed instead of conventional molting methods inorder to achieve animal welfare andthe desired resultsin qualityandefficiency.
Key words: Japanesequail,Force molting, feed deprivation, zinc oxide, alfalfa powder, wheat bran.

Comparison of two Bromhexine medication available on the market

Haghbinnazarpak H[1]*, Ranjbarbahadori SH[2], Ghasemi H[3]
[1]Department of clinical sciences, Faculty of Veterinary Medicine, Garmsar branch, Islamic Azad university, Garmsar, Iran, [2]Department of pathobiology, Faculty of Veterinary Medicine, Garmsar branch, Islamic Azad university, Garmsar, Iran, [3]Dvm student of veterinary medicine faculaty, Garmsar branch, Islamic Azad university, Garmsar, Iran
Corresponding author's email: hhaghbinn@yahoo.com

Objective: Bromhexine is a dilator of respiratory tract and diluted mucus, it reduces mucus viscosity likely due to stimulating lysosomal enzyme activity and breaking the fibers of mucopolysaccharide protein. Secretion of the diluted mucus increases the level of antibodies IgA and IgG in the respiratory tract which is very effective in the symptomatic treatment of respiratory infectious diseases.
Materials & methods: The aim of this study was to assess 1% water-soluble Bromhexine of company A and compare its performance with that of company B. The study was conducted in a poultry farm included 30000chickens which were kept in 4 separate sheds. In each shed, 200 chicken were considered as control. The sheds had the same condition and management. In addition, the chickens were similar in age, nutrition, and other factors. The farm birds showed respiratory diseases from 30th day. From the 31st day, a shed of the farm was delivered drug A and another shed was delivered drug B. The treatment lasted up to 35th day. Next, we compared clinical signs and autopsy, the average weight, feed consumption, and feed conversion of treatment and control groups.Feed conversion rate respectively in days 32,35,38,42,46 was 1.71, 1.79, 1.82, 1.97, 2in shed delivered drug A,and in the control group 1: 1.71, 1.81, 1.92, 2.05, 2.09.in the shed delivered drug B feed conversion rate respectively in days 32,35,38,42, 46 was 1.7, 1.76, 1.8,1.95, 1.99 and in the control group 2 was 1.7, 1.82, 1.92, 2.07, 2.11.
Results & conclusion: The results of weight, feed conversion, and mortality showed that the groups treated by 1% Bromhexine had better condition compared to those were not treated by 1% Bromhexine. Although these differences were not statistically significant, compared to the control group, respiratory improvement was evident in the treatment group clinically. According to the results of the study, 1% Bromhexine of company A had similar treatment effects to that of company B in terms of controlling clinical conditions and respiratory diseases of the studied birds.
Keywords: Bromhexine, dilator of respiratory tract, diluted mucus, feed conversion, mortality

Comparison of two Enrofloxacin medication available on the market

Haghbinnazarpak H[1]*, Ranjbarbahadori SH[2], Sharifi A[3], Solbi Y[3], Ghasemi H[4]

[1]Department of clinical sciences, Faculty of Veterinary Medicine, Garmsar branch, Islamic Azad university, Garmsar, Iran, [2]Department of pathobiology, Faculty of Veterinary Medicine, Garmsar branch, Islamic Azad university, Garmsar, Iran, [3]Postgraduate of veterinary medicine faculaty, Garmsar branch, Islamic Azad university, Garmsar, Iran, [4]Dvm student of veterinary medicine faculaty, Garmsar branch, Islamic Azad university, Garmsar, Iran

Corresponding author's email: hhaghbinn@yahoo.com

Objective: Enrofloxacin is a bactericide and broad-spectrum drug of fluoroquinolone group that stops DNA replication through inhibition of DNA gyrase enzyme action and causes bacterial death. This drug is used for treatment and control of diseases caused by bacillus, aerobic gram-negative cocci, and gram-positive bacteria.

Materials & methods: The aim of this study was to assess 10% water-soluble Enrofloxacin sodium of company A and compare its performance with that of company B.The study wasconducted in a poultry farm included 70000 chickens which were kept in8 separate sheds.In each shed, 200 chicken were considered as control. The sheds had the same condition and management.In addition,the chickens were similar in age, nutrition, and other factors.The birds infected with colibacillosis from 34th day.From the 36st day, a shed of the farm was delivered drug A and another shed was delivered drug B. The treatment lasted up to 40th day.Next, we compared clinical signs and autopsy, the average weight, feed consumption, and feed conversion of treatment and control groups.Feed conversion rate respectively in days 36,38,40,42,44,46 was 1.68,1.74,1.79,1.83,1.9,1.98in shed delivered drug A,and in the control group 1: 1.68, 1.72, 1.76,1.81, 1.93, 2.1.in the shed delivered drug B feed conversion rate respectively in days 36,38,40,42,44,46 was 1.65, 1.73, 1.77, 1.81, 1.89, 1.96 and in the control group 2 was 1.65, 1.72, 1.77, 1.80, 1.91.

Results & conclusion: The results of weight, feed conversion, and mortality showed that the groups treated by Enrofloxacin had better condition compared to control groups. Although these differences were not statistically significant, compared to the control group,but the clinical sign was improvement in the treatment group.According to the results of the study, 10% water-soluble Enrofloxacin sodium of company A had similar treatment effects to that of company B in terms of controlling clinical conditions of the studied birds.

Keywords: Enrofloxacin**,** colibacillosis, DNA replication, average daily gain, feed conversion

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Comparison of two Tiamulinmedication available on the market

Haghbinnazarpak H[1]*,Ranjbarbahadori SH[2],Ghasemi H[3]

[1]Department of clinical sciences, Faculty of Veterinary Medicine, Garmsar branch, Islamic Azad university, Garmsar, Iran, [2]Department of pathobiology, Faculty of Veterinary Medicine, Garmsar branch, Islamic Azad university, Garmsar, Iran, [3]Dvm student of veterinary medicine faculaty, Garmsar branch, Islamic Azad university, Garmsar, Iran

Corresponding author's email: hhaghbinn@yahoo.com

Objective: Tiamulin is a semi-synthetic antibiotic of bacteriostatic antibiotics group which inhibits protein synthesis by bacteria and is used against gram-positive and gram-negative bacteria. This drug has very high affinity for binding to 50s unit of bacteria's ribosome; hence, causes a break in the chain of peptide synthesized by bacteria and exerts its bacteriostatic effect by inhibiting bacterial protein synthesis.

Materials & methods: The aim of this study was to assess 12.5% water-soluble Tiamulin of company A and compare its performance with that of company B. The study was conducted in a poultry farm included 30000chickens which were kept in 4 separate sheds.In each shed, 200 chicken were considered as control. The sheds had the same condition and management. In addition, the chickens were similar in age, nutrition, and other factors. The farm birds showed respiratory diseases from31th day. In this day, a shed of the farm was delivered drug A and another shed was delivered drug B. The treatment lasted up to 34th day. Next, we compared clinical signs and autopsy, the average weight, feed consumption, and feed conversion of treatment and control groups.Average daily gain, respectively in days 31,32,33,34,39,46 was 1358, 1484, 1540, 1678, 1994, 2525 in shed delivered drug A,and in the shed delivered drug B 1363,1500,1550,1680,1990,2501,in the control group 1375, 1472, 1532, 1620, 1907, 2388.Feed conversion rate respectively in days 31,34,38,42,46 was 1.72, 1.76, 1.78, 1.92, 2.09in shed delivered drug A, and in the sheddelivered drug B 1.7, 1.77, 1.8, 1.95, 2.15,in the control group ---, ---, 2.09, 2.23, 2.35.

Results & conclusion: The results of weight, feed conversion, and mortality showed that the groups treated by Tiamulin had better condition compared to those were not treated by 12.5% water-soluble Tiamulin. These differences were statistically significant, compared to the control group, respiratory improvement was evident in the treatment group clinicallyaccording to the results of the study, Tiamulin of company A had similar treatment effects to that of company B in terms of controlling clinical conditions and respiratory diseases of the studied birds.

Keywords: Tiamulin, poultry, respiratory diseases, average daily gain, feed conversion

Comparison of two Trimethoprim 4% +Sulfadimethoxine 20% medication available on the market

Haghbinnazarpak H[1]*, Kafshdouzan KH[2],Ghasemi H[3]

[1]Department of clinical sciences, Faculty of Veterinary Medicine, Garmsar branch, Islamic Azad university, Garmsar, Iran, [2]Department of microbiology, Faculty of Veterinary Medicine, Semnanuniversity, Semnan, Iran, [3]Dvm student of veterinary medicine faculaty, Garmsar branch, Islamic Azad university, Garmsar, Iran

Corresponding author's email: hhaghbinn@yahoo.com

Objective: Trimethoprim 4% +Sulfadimethoxine 20% prevent synthesis of folic acid through inhibition of PABA enzyme. Hence, essential activity of bacteria stops. By strengthening the effect of each other, the above combination prevents DNA synthesis in bacteria and results in bacteria death. This drug is used in the treatment of coryza and the diseases caused by gram-positive and gram-negative bacteria in hens and turkeys.

Materials & methods: The aim of this study was to assess Trimethoprim 4% +Sulfadimethoxine 20% of company A and compare its performance with that of company B. The study was conducted in a poultry farm included 30000 hens which were kept in 4 separate sheds. The sheds had the same management. In addition, the chickens were similar in age, race, nutrition, and other factors the birds infected with colibacillose. Average daily gain, respectively in days 32, 36, 40, 44, 48 was 1180.33, 1434.67, 1732.67, 2169.33, 2364 in shed delivered drug A, and in the control group 1 was 1178, 1400, 1620, 1925, 2210. in the shed delivered drug B average daily gain, respectively in days 32, 36, 40, 44, 48 was 1157.67, 1425.33, 1652.33, 1941, 2294, and in the control group 2 was 1157, 1405, 1605, 1910, 2150. Feed conversion rate respectively in days 32, 36, 40, 44, 48 was 1.68, 1.773, 1.90, 1.956, 2.08 in shed delivered drug A, and in the control group 1: 1.68, 1.81, 1.98, 2.15, 2.21. in the shed delivered drug B feed conversion rate respectively in days 32, 36, 40, 44, 48was 1.69, 1.786, 1.906, 2.01, 2.12 and in the control group 2 was 1.69, 1.82, 1.98, 2.19, 2.25.

Results & conclusion: The results of weight, feed conversion, and mortality showed that the groups treated by Trimethoprim 4% + Sulfadimethoxine 20% had better condition compared to control groups. According to the results of the study,Trimethoprim 4% +Sulfadimethoxine 20% of company A had similar treatment effects to that of company B in terms of controlling clinical conditions of the studied birds.

Keywords: Sulfadimethoxine, Trimethoprim, DNA replication, average daily gain, feed conversion rate

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Pathological and Molecular Characterization of Avian Adenovirus with Inclusion Body Hepatitis (IBH) in Commercial Broiler Farms, in Northeast Iran

Mehran Tahmasebi [1*], Seyed Mohammad Hoseini[2], Hadi Haghbin Nazarpak[3].

1. Young Researchers Club, DVM student, Faculty of Veterinary Medicine, Islamic Azad University, Babol branch, Babol, Iran.*

2- Departmant of Pathobiology, Faculty of Veterinary Medicine, Islamic Azad University Babol branch, Babol, Iran.

3. Department of Clinical Sciences, Faculty of Veterinary Medicine, Islamic Azad University, garmsar branch, garmsar, Iran.

***CORRESPONDENCE: M.Tahmasebi, Email: mehran.mt61@gmail.com**

***Background*:** Avian adenoviruses (AAV) were found to be an important pathogen which could cause inclusion body hepatitis (IBH) in chickens worldwide. Adenovirus infections are mostly subclinical and appear to have little economic or welfare importance in several countries. In contrast, IBH/HPS and secondary infections due to immunosuppression in chickens may exhibit high mortality rates with economic significance. This preliminary study was conducted to molecular detection of avian adenoviruses in broiler flocks showing IBH growth lesion in their liver and kidneys in Northeast Iran.

***Materials, Methods & Results*:** Samples were collected from an outbreak in 12000, 16000 and 25000 broiler flocks from Babol - Mazandaran with sudden high mortality initiated from 10 days of age. 20 samples suspected to IBH and liver lesions were collected for histopathological and molecular examination. PCR products with specific size, confirmed avian adenoviruse infection. All samples collected from liver lesions IBH cases were positive. This preliminary investigation do only confirms the presence of avian adenoviruses in broiler flocks in Iran.

***Discussion*:** To show the prevalence and the significance of avian adenoviruses in clinical and subclinical syndromes, more works are needed.

Key words: Avian Adenovirus, Inclusion body, Hepatitis, Broiler, babol.

Significance and New Control Methods for *Dermanyssusgallinae*in laying hens

Amir Ali Amiri[1], Nava Eram[2]
1- Poultry Specialist Clinician, Mehr Poultry Clinic
2- PhD student of Avian Diseases, University of Tehran
Corresponding author: a2_amiri@yahoo.com

Objective: *Dermanyssusgallinae*, the poultry red mite (PRM), is a blood-feeding ectoparasitic capable of causing pathology in birds, among other animals. It is an increasingly important pathogen in egg layers and poses a significant threat to egg-laying hens in many parts of the world, including the United States, Europe, Japan and China. An infestation of these mites can reduce poultry welfare, increase mortality, disease transmission, and even cause allergic reactions in poultry facility workers. Economic costs associated with both control and production losses due to *Dermanyssusgallinae* have been estimated 130€ million per year for the EU egg industry, with similarity large sums in other regions.
Material and Method: Control can be divided into two parts: conventional methods and alternative methods. Conventional methods mostly focus on killing poultry red mite or preventing infestations. Alternative methods included using light, predatory mites, fungus, odors and vaccines. Natural acaricides include essential oils, herbs or plant extracts or plant derived products like garlic based acaricide, thyme, burdock and tansy.
Results and conclusion: Poultry red mite probably causes more damage than envisaged.*Dermanyssusgallinae*is a serious threat to laying hens and egg production in many parts of the world. The rapid emergence of acaricidal resistance, suggests that poultry red mite will continue to be a major problem to the global egg laying industry. Much is still unknown about red mite. Approach knowledge from different researches will help to identify effective new control or eradication methods.
Keywords: *Dermanyssusgallinae*, red mite,ectoparasite, Layers, egg production

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Effects of slaughter operations on the microbiological contamination of broiler carcasses

Koohdar, V. SHaygan Mansori, A.
Department of Food Hygiene and Quality Control, Faculty of Veterinary Medicine, Karaj Branch, Islamic Azad University, Karaj, Iran
Coresponding Author: dr.koohdar@gmil.com

Poultry is one of the world's fastest sources of human protein production, so that one-fourth of the total meat production in the world comes from poultry, and due to its high nutritional value, it is highly recommended. On the other hand, this valuable protein food can cause illness in human if contaminated with pathogenic organisms and also is highly perishable and if not properly packaged and stored, it will soon be rotted. One way to protection of poultry meat from contamination is good production and operation in slaughterhouses. In terms of meat production, strict adherence to good practices of slaughter hygiene, along with risk-based preventive measures (HACCP approach), is crucial to ensure public health protection and meat quality. For assessment of slaughter process performance, operations increasing or decreasing microbial loads on carcasses must be identified. The modern poultry's slaughterhouse is a complex, rapid and highly automated process. With regard to slaughtered broilers, contamination of carcasses with *E coli* poses a major challenge. *E coli* is an indicator to detect and estimate the level of fecal contamination of poultry meat. Handling and consumption of poultry is thereby considered a major source for human disease. Healthy broilers are often carriers of *Enterobacteriaceae* and carcasses might become contaminated during slaughter.

30 broiler carcasses from poultry abattoirs were examined at selected stages of slaughter (before and after scalding, after plucking, after evisceration and chilling) for microbial analysis. Before scalding, total Bacterial and *E coli* counts from carcasses were 8.1 log CFU/g and 3.2 log CFU/g, respectively. After scalding, mean values were 6.9 log CFU/g for TBC and 2.8 log CFU/g for *E coli*. Plucking can reduce about 1.5 log CFU/g TBC, whereas *E coli* counts slightly (2.4 log CFU/g) decreased. After evisceration, TBC and E coli count were 6.5 and 2.3 log CFU/g, respectively. After chilling, major changes occurred, the mean of TBC and *E. coli* count were 4.2 and 1.9 log CFU/g, respectively. Obtained results show that current operations used in poultry slaughterhouse are effective in reduce of TBC and *E coli* count.
Keywords: Poultry, slaughterhouse, Broiler carcasses, Slaughter process, Total Bacterial count, *Escherichia coli* count

Isolation, Genotyping, Partial Sequence Analysis and Phylogeneitc tree of Newcastle disease virus isolated from recent outbreak of VelogenicViscerotropic Newcastle Disease in Ilam Province

Bassami M[1*], SadrzadehA[1] ,Bassami MR[2]

[1]Department of Avian Diseases,Faculty of Vet Med,Islamic Azad University Garmsar Branch ,[2]Department of Avian Diseases , Faculty of Veterinary Medicine, University of Ferdowsi, Mashhad, Iran

Corresponding author's email : bassami.dvm@gmail.com

Objectives:Newcastle disease is one of the most important viral diseases of avian species, causing considerable economic losses in poultry industry worldwide, including Iran. The disease is caused by avian paramyxovirus type-1 (PMV-1). During the last 2-3 years, frequent and extensive outbreaks of Newcastle disease were reported all around the country. Ilam province, located in western part of Iran, was among the provinces with frequent outbreaks of the disease.

Materials & Methods: After clinical diagnosis, brain tissues were used for virus isolation. The supernatant of homogenate was inoculated into the allantoic sac of embryonated eggs at age of nine. The virus isolates were passaged twice. The presence of NDV in allantoic fluids were examined by HA assay. The specificity of the haemagglutinin was assessed by HI assay using standard anti serum against NDV. RNA from the allantoic fluids was extracted, followed by cDNA synthesis and PCR amplification using specific primers amplifying the cleavage site of the F gene. RT-PCR products were purified from agarose gel and submitted for DNA sequencing analysis. Phylogenetic analysis was performed on the nucleotide and deduced amino acid sequences obtained. Virus- isolation confirmation was assessed by HA and HI and RT-PCR assays.

Results & Conclusion:HA and HI and RT-PCR assays confirmed that the isolated virus was NDV.Analysis of nucleotide and deduced amino acid sequences of the cleavage site (112-RRQKRF-117) revealed that the Ilam isolate was a velogenicpathotype. The phylogenetic analysis showed that the isolate belongs to Class II, Genotype VII and sub-genotype VIId. This investigation proved that genotype VIId of vvNDV was responsible for ND outbreak in Ilam province. The Ilam isolate, together with Khorasan and Semnan province isolates were clustered in genotype VIId along with foreignisolates from Saudi Arabia, South Korea, China, Indonesia and Taiwan. This findings indicate that recent outbreaks of ND in Iran and the region may originated from South-East Asia. This claim needs more evidences to be confirmed.

Keywords:Newcastle disease virus, RT-PCR, Fusion protein, Phylogenetic Tree,Ilam

Blockade of Peripheral Nociceptin Receptors Modulates Glutamate Induced Feed Consumption in Japanese quail

Hajian SH Hajinezhad MR *,

Department of Basic Sciences, Faculty of Veterinary Medicine, University of Zabol,Zabol,Iran

Corresponding author's email:Hajinezhad@gmail.com

Objectives:[Nphe[1]]NC (1–13) NH2, a potent and selective antagonist for the Nociceptin/orphanin FQ (N/OFQ) receptor, exhibits appetite-suppressing properties in normal conditions. The effect of peripheral nociceptin receptors blockade on glutamate induced anorexia in food-restricted quails (15g/day/quail) was investigated.

Materials & Methods: 40 birds were used in each experiment. All solutions were injected on the same day during 09:00–12:00 in replicates of 10 birds. Fresh food was supplied at the time of injection, and cumulative feed intake (grams) was recorded at 180, 360 and 540 min. Cumulative feed intake is presented as mean ± SD and analyzed using a one-way analysis of variance (ANOVA) at each time period.

Results & Conclusion: The obtained data indicated that 80 mmolglutamatemicroinjection, induced hypophagic effect in food-restricted quails. The intraperitoneal (ip) injection of selective Nociceptin/orphanin FQ (N/OFQ) receptor antagonist decreased food intake in food-deprived quails; the effect was statistically significant at the three doses tested (15, 30 or 60 µg/kg). The most efficacious dose appeared to be (60 µg/kg). Latency time to feeding decreased following microinjections of glutamate and N/OFQ antagonist. To examine whether this anorectic effect involves Nociceptin/orphanin FQ (N/OFQ) receptor blockade, birds received intraperitoneal co-injection of nociceptin receptor antagonist and glutamate. Submaximal dose of nociceptin antagonist (2mg/Kg) significantly increased glutamate -induced anorexia. Our results showed that nociceptin antagonist significantly increased the anorectic effect of glutamate, and provide evidence that the anorexia induced by glutamate is mediated by reduction in the brain N/OFQ content.

Key Words: nociceptin, Japanese quails, glutamate, food intake

Effect of peripheral CB1 ReceptorBlokade on Nociceptin/orphanin FQ induced feeding In Japanese Quail

Hajian SH[1],Hajinezhad MR[1] *Vaezi E[1]Mokhtar pour[2] A
[1]Department of Basic Sciences, Faculty of Veterinary Medicine, University of Zabol,Zabol, Iran
[2]Research Centre of Special Domestic Animal, University of Zabol, Zabol, Iran
Corresponding author's email:Hajinezhad@gmail.com

Objectives: [Nphe[1]]NC (1–13) NH2, a potent and selective antagonist for the Nociceptin/orphanin FQ (N/OFQ) receptor, exhibits appetite-suppressing properties in normal conditions. The effect of peripheral CB1 receptor Blockade onNociceptin/orphanin FQ induced food consumption in food-restricted quails was investigated.
Materials & Methods: 40 birds were used in each experiment. All solutions were injected on the same day during 09:00–12:00 in replicates of 10 birds. Fresh food was supplied at the time of injection, and cumulative feed intake (grams) was recorded at 180, 360 and 540 min. Cumulative feed intake is presented as mean ± SD and analyzed using a one-way analysis of variance (ANOVA) at each time period.
Results & Conclusion: The obtained data indicated thatadministration of CB1 receptor antagonist (AM281)at 2.5 mg/kg, induced hypophagic effect in food-restricted quails. The intraperitoneal (ip) injection of selective Nociceptin/orphanin FQ (N/OFQ) receptor agonist increased food intake in food-deprived quails; the effect was statistically significant at the three doses tested (4, 8 and 16 mg/kg). The most efficacious dose appeared to be (16 mg/kg). Food consumption and latency time to feeding decreased following ip injectionof (AM281). To examine whether this anorectic effect involves Nociceptin/orphanin FQ (N/OFQ) receptor blockade, birds received intraperitoneal co-injection of nociceptin receptor antagonist and AM281. Submaximal dose of nociceptin antagonist [Nphe1]NC (1–13) NH2 (3mg/kg) significantly increased CB1 antagonist -induced anorexia. Our results showed that nociceptin antagonist significantly increased the anorectic effect of CB1 antagonist, and provide evidence that the anorexia induced by AM281might be mediated by interaction with N/OFQ receptors.
Key Words: nociceptin, Japanese quails, CB1, food intake

Mycobacteriosis in a Flock of Domestic Pigeons Diagnosed by Necropsy Findings, Microbiology and Histopathology: Case Report

Hassan Mirarab Razi*[1], Sina Faghihzadeh[1], Peyman Nakhaee[1], Mohaddese Manzari Tavakoli[1], Bahman Abdi-Hachesoo[2]
[1] Resident of Avian Diseases, Faculty of Veterinary Medicine, Shiraz University, Iran
[2] Department of Avian Diseases, Faculty of Veterinary Medicine, Shiraz University, Iran
Hassan.mirarab@gmail.com

Objectives: Avian mycobacteriosis is an important disease related to all species of birds, most commonly caused by *Mycobacterium avium*. However, pigeons have been found to be highly resistant to *M. avium* infections and classic tubercles rarely developed in Columbiformes.
Material & Methods: This report describes an outbreak of avian mycobacteriosis in a flock of 120 pigeons with various age ranges. Over a three-month period, the sick pigeons showed Depression and poor appetite followed by cachexia and muscular atrophy. In addition to granulomatous nodular lesions in various sizes in the internal organs, the affected pigeons also showed external lesions on wings and legs. The internal nodular lesions were observed in the liver, intestine, gizzard, kidney, mesenteric membrane and testicles. According to this observations we suspected to the Mycobacteriosis (or tuberclosis) infections and samples taken from lesions of foregoing organs for microbiology (Ziehl-Neelsen staining) and histopathology examination.
Results & Conclusion: Histopathology examination of these organs showed large numbers of multiple granulomatous lesions with central caseous necrosis surrounded by epithelioid cells, giant cells and thick layer of lymphocytes. In the Ziehl-Neelsen-stained sections, numerous intracellular and extracellular acid-fast bacilli were detected in the above organs. It was thought that infection could be by fecal-oral route due to the locations of the granulomas. According to the zoonotic significance of tuberculosis, especially for people with immunodeficiency problems, it is recommended to eliminate the affected birds instead of treatment.
Key words: Mycobacteriosis, Mycobacterium avium, pigeon, nodular lesions

Consequence of Free Choice Feeding of Wet and Dry Whole Wheat on Performance , Immune Responses and Carcass Traits of Broiler Chicks

Hamed Dadgar[1*], Hassan Kermanshahi[2] ,Faeze Fazel[3]

[1]PhD Student of Animal Nurtion, Ferdowsi University, Mashhad, Iran
[2]Department of Animal Science, Ferdowsiuniversity, Mashhad, Iran
[3]PhD Student of Animal Nutrition, Islamic Azad University,Science and Research Branch,Tehran.Iran
***Corresponding author: Nahr1362@yahoo.com**

This experiment was conducted on 432 day old broiler chicks to investigate the effects of feeding ground whole-wheat through a mixed feeding or free choice feeding of dry and wet whole-wheat on the Performance,Immune responses and Carcass traits of broiler chicks. The following four treatments, based on wheat and soybean meal, were employed: ground-wheat diet with 50, 100 and 150 g wheat per kg respectively in starter, grower and finisher diet; ground wheat diet with free access to dry or wet whole-wheat in separate feeders. Each diet was fed to four pens of 12 birds each from 1 to 42 days of age. Body weight, feed intake and feed conversion were recorded at 14, 28 and 42 d. Antibody titer against Newcastle and Avian Influenza(H9 N2) disease viruses at 26d (14 d post immunization), sheep red blood cell (SRBC) at 32 d (5 d post immunization) and heterophil to lymphocyte ratio at 42 d were measured. On days 42 blood samples were collected from the wing vein of eight birds per treatment. In over all growth period (1-42 d) feed intake and weight gain of broilers had free access to dry and wet whole-wheat significantly decreased ($P<0.05$). Broilers in free access to wet whole-wheat had the lowest feed intake ($P<0.05$) and feed conversion tended to improve. The consumption of whole wheat significantly was the highest in broilers had free access to dry whole-wheat ($P<0.01$). Carcass yield, liver and pancreas were not affected significantly by treatments. Both dry and wet whole-wheat treatments increased ($P<0.05$) the relative abdominal fat and gizzard weights. Relative intestine and ceca weights were the highest and the lowest respectively in broiler had free access to wet and dry whole-wheat ($P<0.05$) and also results showed that antibody production against Avian Influenza and SRBC not significantly tended to wet and dry wheat in all of treatments. Heterophil to lymphocyte ratio tended to decrease in the all of dietary treatments in comparison with control. The results of this study indicated that free access to dry and wet whole-wheat may not be appropriate for broilers feeding although free access to wet whole-wheat improved feed efficiency.

Keywords: Broiler chicks; Whole wheat; Wet; Free choice; Performance, Carcass traits

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Detection of two virulence genes in *E.coli* isolates from commercial chickens using by multiplex PCR in Tabriz

Hasani, Bahram; Banani, Mansour; Nouri, Abbas; Goudarzi, Hossein; Mahmoodzadeh, Mohsen; Hasani, Mehran and Niroumand, Mohieddin

Objectives: Colibacillosis refers to any localized or systemic infection caused entirely or partly by avian pathogenic *Escherichia coli* (APEC). Mortality rates of this disease vary from 5 to 50% in chickens, turkeys and ducks. The aim of this study was to detect the two virulence genes in *E.coli* bacteria isolated from diseased broilers in Tabriz area using by polymerase chain reaction (PCR).
Materials & Methods: In this study 70 *E. coli* bacteria were isolated from commercial chickens suspected to colibacillosis. These birds had been submitted to veterinary clinics of Tabriz. Bacterial isolation was done according to the standard bacteriologic methods. At first the swab sample was cultured onto the MacConkey agar and then subcultured onto the EMB agar. Biochemical properties such as imvic tests were used for identification of the isolates. For molecular detection of two virulence genes the DNAs of the *E.coli* isolates were extracted by phenol and chloroform method. Then the virulence genes including *papc(* targeting genes for P-fimbriaeand *irp2(*iron-repressible protein) were detected using by specific published primers and multiplex PCR method.
Results & Conclusion: Thirty four and 24 isolates out of total 70 isolates, showed *irp2* and *papc, genes* respectively and in 25 isolates there was no *irp2* and *papc* genes. In 21 isolates only *irp2* gene and in 11 isolates only *papc* gene were detected. In 13 isolates the 2 genes were detected simultaneously. 45 out of 70 isolates (64.3%) showed at least one of these two virulence associated genes. Although to date, APEC is known to only infect poultry including chickens, turkeys, ducks etc., recent studies suggest the possibility of APEC being implicated in extraintestinal infections in humans as well. Upon the results it seems that those *E.coli* isolates from birds with more virulence associated genes show more pathogenicity for birds and humans. Further studies are needed to assess the relationship between virulence factors and pahtogenicity of the avian isolates. This research was supported by Razi vaccine and serum reaearch inatitute project number 2-18-18-92110.
Key words: virulence gene, E.coli, chickens, colibacillosis, multiplex PCR, Tabriz.

Evaluation of the effect of Livacox Q and Eimeriavax 4m in an Iranian broiler breeder flock located in Khorasan.

Bozorgmehri Fard MH [1], Charkhkar S [1], Abbaszadeh E[2, *]
[1]*Department of Poultry Diseases, Faculty of Specialized Veterinary Science, Islamic Azad University, Science and Research Branch, Tehran, Iran*
[2] *Department of Avian Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran*
Corresponding author's email: elyaabbaszadeh@ut.ac.ir

Objectives: Coccidiosis is an intestinal disease in poultry caused by parasitic protozoan of the genus Eimeria, which is one of the most important diseases in the poultry industry. The aim of this study was to evaluate the effect of two available vaccines in Iran with the commercial name of Livacox Q and Eimeriavax 4m in a broiler breeder flock.
Material & Methods: Thirty six thousand 7 day chicks of a Ross 308 broiler breeder flock, located in Khorasan province in the Northeast of Iran, were vaccinated against coccidiosis. Two coccidiosis vaccines, Livacox Q andEimeriavax 4m, were used in different houses of this flock. The mortality rate, weight gain and other performance factors, were measured according to the common program of the flock in a weekly basis. The losses from one to seven days and from seven days to fifteen weeks in different houses of the flock were calculated and compared using T-test method. The efficacy of two vaccines were analyzed based on the oocyst per gram (OPG) count of fecal contents obtained from the flock litter from both treatment and control houses and were compared using T-test method.
Results & Conclusion: The results of this study showed that the mortality and cull rates of both vaccinated groups showed no significant differences by means of the chi-square test. The production rate of two groups were also showed no significant differences up to 32 weeks of age and all 4 houses of the flock were reached their maximum production rates at the approximately same time. OPG analysis of both treatment and control groups showed no observation of oocyst up to 5 days of age. The analysis of intestinal lesion scoring index also showed no significant differences between the vaccinated treatment and control groups compared to non-vaccinated control group. Neither statistically significant mortality nor clinical symptoms were observed in the vaccinated challenge groups compare to non-vaccinated challenge group, which is an indicator of a resistance to clinical coccidiosis which is caused by the use of both vaccines. In conclusion, overall performance of both treatment and control groups from the time of vaccination during the production period until the onset of the peak of egg production, including the mortality and production rates, showed no significant differences. Hence, the efficacy of Livacox Q and Eimeriavax 4m in the two treatment groups and also the control group in this study showed no statistically significant differences.
Keywords: Coccidiosis, Eimeria, Livacox Q, Eimeriavax 4m, Iran

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Effects of herbal drugs (parsley, pomegranate juice), on healing of experimental atherosclerosis in broiler

mohammadsadegh madadi[1*],faeze roostaei shalmani[2], javad ashrafi helan[3], amir nikkar mokaram[4]
1.Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Tabriz ,Tabriz, Iran
2. Doctor of veterinary medicine, Faculty of Veterinary Medicine, University of Tabriz ,Tabriz, Iran
3.Department of pathobiology , Faculty of Veterinary Medicine, University of Tabriz ,Tabriz, Iran
4.DVM student,Faculty of Veterinary Medicine, University of Tabriz,Tabriz, Iran
Corresponding author's email: madadi@tabrizu.ac.ir

objective: Metabolic diseases are the most important diseases in poultry industry which cause a lot of economic losses to the industry. In this regard, the healing effects of herbal medicines on experimental atherosclerosis were studied.
Materials & Methods: The study was conducted in a completely randomized design in an experiment, which included 90 chickens, was performed in two phase. Inthe first phase, 2 treatments were conducted. The first treatment diet containing lard until day 42 and the second group which was considered as the control group received diet without oil.In first treatment with the increase of age, the amount of fat was increased from 2% in the first phase to 6% in the last phase. On the 42 days of rearing time, 3 chickens from each treatment were slaughtered and remainednumber were entered into the second phase of the study.In the second phase, 3 treatments were conducted. None of 3 treatments had received oil starting from the day 42. In the first treatment parsley and in the second treatment pomegranate juice was used as herbal medicine from the 37th day to the 50th day, and the third group was considered as the positive control group received diet without herbal medicine.
Results & Conclusion: The results from this group indicated that the lard caused a severe atherosclerosis, while in the control group no atherosclerosis was observed. Using parsley herbal drug,decreased the lesions of atherosclerosis obviously, but pomegranate juice had no remarkable effects on atherosclerosis.
keywords: Broiler chicken, Atherosclerosis, Lard, Parsley, Pomegranate juice

Effects of saturated and unsaturated fatty acids onexperimental atherosclerosis in broilers

mohammadsadegh madadi[1]*, faezeroostaei shalmani[2], javad ashrafi helan[3], amirnik kar mokaram[4]

1.Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Tabriz ,Tabriz, Iran 2. Doctor of veterinary medicine, Faculty of Veterinary Medicine, University of Tabriz ,Tabriz, Iran 3.Department of pathobiology , Faculty of Veterinary Medicine, University of Tabriz ,Tabriz, Iran
4. DVM student, Faculty of Veterinary Medicine, University of Tabriz,Tabriz, Iran
Corresponding author's email: madadi@tabrizu.ac.ir

objective: Metabolic diseases are the most important diseases which cause a lot of economic losses to the poultry industry. In this regard, the effects of saturated and unsaturated fatty acids, on experimental atherosclerosis were studied.
Materials & Methods: The study was conducted in a completely randomized design in an experiment, which included 90 chickens, was performed with 3 treatments. The first and second treatment diets contained soybean and lard oil, was fed to chickens, and the third group which was considered as the control group received diet without oil. In both first and second treatments with the increase of age, the amount of fat was increased from 2% in the first phase to 6% in the last phase
Results & Conclusion: The results from this group showed that the lard caused a severe and soybean oil caused moderated atherosclerosis, while in the control group no atherosclerosis was observed.
keywords: Broiler chicken, Atherosclerosis, Saturated fatty acid, Unsaturated fatty acid

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Detection of Astrovirus in Broiler flocks of rodsar city

Hossein khojaste Gazafroudi[1]Hadi haghbin nazarpak[2] Hossein hosseini[3]
1-DVM. Young Researchers and Elite club ,garmsar Branch ,Islamic Azad university,garmsar,iran
2-Department of Clinical Sciences, Faculty of Veterinary Medicine,Garmsar Branch,Islamic Azad University,Garmsar,Iran
3- Department of Clinical Sciences, Faculty of Veterinary Medicine,Karaj Branch,Islamic Azad University, Alborz,Iran
Corresponding Author Email : Hossein.khojaste.g@gmail.com

Introduction: Astroviruses of the family are Astroviridae,small round.non-enveloped, with 28 to 30 nm in diameter and are released naturally through the oral- fecal route.a positive sense RNA and genome 6/5-7/5 kb has been and include 3 ORF(Open Reading Frames).
Astrovirus diarrhea poultry from 1 to 3 weeks are separating.severity of infection by diarrhea and anorexia and appetite cut neurological symptoms apper.Although mortality is low,but is often the risk of disease prevalence.
Materials and Methods: The most important complication of the disease decrease growth and the most important issue,it is.In this study,30 flocks of broilers tested race and 5 samples were sent to laboratory for testing RT-PCR.After centrifugation the upper part is removed and the solution was used for RNA extraction using viral genomic RNX extraction solution and then cDNA synthesis was performed using random HEXMER PRIMER and finaly by the presence or absence of specific primers was examined Astrovirus.
Results: According to the results obtained in 27/1 % of samples were positive..
Discussion:According to the results obtained in 27/1 % of samples were positive it should be noted that the poultry industry is the second of craft important and economically valuable in iran as a result of problems caused by Astrovirus and economic damages are very important and necessity of this research and subsequent studies will double.
Key word: Astrovirus, broiler, RT-PCR, HEXMER PRIMER

The study on effect of *Vitamin E and C* on humoral immune response in broiler vaccinated against Infection *Bursal*disease

RezaeiM[1*] .,HajizadehB[2]
1. Department of clinical sciences, Faculty of Veterinary Medicine,Urmia Branch, Islamic Azad University, Urmia,iran. 2. Graguate of Veterinary Medicine, Islamic Azad University Urmia Branch, ,Urmia, Iran.
Corresponding Author email:mehdi217mr@yahoo.com

Objectives:*Infection Bursal disease(IBD)* as a factors immune suppressive system which causes financial loss poultry industry. Punctual vaccination is one of the major prevention methods. The aim of this study is the effect of stimulating and reinforcement of*Vitamin E and C*on the immune system of broilers vaccinated against Infection Bursal disease
Materials & Methods:A total of 300 broiler chicken (ROSS 308), 4 negatives in a completely randomized design with10 treatments and three replicates for each group, a total of 30 groups considering 10 chicken were tested in each box. turbo tox administer from day one with dosage of 2 gr/kg vit E (group 1), 0/5gr/kg vit E (group2),1 gr/kg vit E (group 3), 2gr/kg vit C(group4), 0/5gr/kgvit C (Group 5), 1 gr/kg vitC (group 6) , 2 gr/kg vit E+C (group 7) ,0/5 gr/kg vit E+C (group 8) ,1 gr/kg vit E+C (group 9)of feed and in group 10(control) took no vitamin E and C . Blood samples were taken on 1, 19 , 29 , 40 days old chicken to count lymphocyte and detect maternal anti-body and production anti – body after vaccination against IBD examined based on ELISA testusing IDEXX standard kit.
Results & Conclusion: The results of ELISA testand lymphocyte count showed that administration of vitamin E and Cincreasedanti-body response against IBD in broiler chicken ($P<0.05$).In conclusion administration vitamin E and Ctogether had highest response against IBD in broiler chicken .
Keywords:vitamin E and C, chickens, ELISA,lymphocyte

Shell and egg yolk contamination with Escherichia coli, Salmonella and Staphylococcus aureus fields hens

Pirzamani V[1], Kooshki M[2*], Davarzani MA[2], Hasan nia H[2]
1.Department of The food hygiene and quality control, Islamic azad University of Garmsar, , Iran
2. Student of veterinary medicine, Islamic Azad University of Garmsar, Garmsar, Iran
Corresponding author's email: kooshki1371@gmail.com

Among the foods of animal origin such as eggs for use in food products, sauces, food dressing, ice cream and a variety of foods that can be used raw or cooked can always potentially a source of contamination and transmission disease to humans.
In the present study Sampling,four steps ,from the center of poultry farming broiler breeder total of 124 eggs (62 eggs and 62 eggs contaminated with fecal matter, gas disinfection with formalin) was performed.
Each samples placed in a sterile nylon bag and in the shortest time were sent to the microbiology laboratory of Veterinary Medicine, University of Shahrekord.
The surface of eggimmersed in 10cc PBSthen 1cc were cultured on MAC and TSA thenincubated at 37.5 ° C for 24 h .
Colonies were selected based on form properties, thenwere purified on nutrient agar (NA)at 37.5 ° C for 24 h .In staining gram, they were observed gram negative bacilli and gram-positive cocci.
The results showed Escherichia coli, Staphylococcus aureus and Salmonellabacteriain eggs yolks from ۲groups (contaminated and clean) was isolated.
3 egg yolks contaminated with the bacteria had infected the other. Shell of 62 (100%) samples contaminated shell eggs were contaminated with fecal coliform and E. coli.
Staphylococcus aureus was 42(67.7%)sampleswere isolated of contaminated shell eggs. Escherichia coli and Staphylococcus aureus, respectively, in the shell 7(11.2%), 4 (6.4%) and9 (14.7%) of shell eggs clean (disinfected) was observed.
Keywords: eggs, Escherichia coli, Salmonella, Staphylococcus aureus, broiler breeder

The study of attenuated live vaccine power and changes in humoral antibody in presence maternal antibody

Pourmahmood A[1], Solbi Y[2], Haghbin nazarpak H[3]

1supervisor of integration IMF CO, TEHRAN, Iran, 2 consultant of IMF CO

3Department of Veterinary Poultry Diseases, Faculty of Veterinary Medicine, Islamic Azad University of Garmsar,

Corresponding author's email: amin_pourmahmood@yahoo.com

Objectives: One of the important diseas in poultry is Newcastle which can be damaged in short time. Newcastle is an infection and disease which based on investigation of responsible, the amount of damage is over than million dollar.

Materials & Methods: Two halls of broiler farm has selected which has 30000 capacity with the same nutrition management. The collate against Newcastle in first time VITABRON vaccine in method of spray with injection to killed vaccine of AI&ND in one day and second time B1 the way of eye drop on 8th day and third time on 18th day with CLONE vaccine and fourth time with CLONE vaccine on 25th day.

In the research, two maker companies of ILB1 vaccine was used .according to analysis the impact of vaccine operation, three groups of 200 bird (totally 600 birds and in the same condition to another group) was considered.

The first control group (C) was the ovojero company vaccine group and just vaccinated Spanish company Newcastle vaccine with eye drop method on 8th day which called as a positive control group .the second control group (D) or razi positive control group vaccinated B1 Newcastle vaccine of serum research institute and razi vaccine production to investigate the non attendance of Newcastle wild virus , the third negative control group (E) considered without any Newcastle vaccination .bleed bled in average 10-15 birds from 5 groups aged 1-7-15-21-30-40- days and at the end of the rearing period (45th days) and then sent to pastor laboratory to test HI and ELISA (symbiotic kit) to study the research subject, we have drown a plan that investigate here .bleed plan in aged 8th day is as following :

Bleed 6 hours before vaccinate on 8th day, same time with vaccinate on 8th day, 6 hours after vaccinate, 12 hours after vaccinate, 24 hours after vaccinate and 48 hours after vaccinate according study .

Results & Conclusion: We can conclude that Hemoral Anti-body Titr decrease until 20th day with vaccinating and thereafter show the increasing process According to consider and measure the different aspects consist of average changing process in HI test and ELISA for different group of studying and the conclusions which received base on field trial.

According to consider and measure the different aspects consist of average c
different group of studying and the conclusions which received base on field
body Titr decreases until 20th day with vaccinating and thereafter shows the increasing process .

Keywords: Newcastle disease virus, NDV, Maternal antibody, Vaccanation

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A study on pasteurellosis in layer and broiler breeder in mazandaran and khorasan in recent years

2013-2015

Kiani MH[1*], Nazemi Sh[2], Bozorgmehri fard MH[2], Charkhkar S[2],Pouri M[2]

[1]Young researchers and Elites club,Science and Research Branch, Islamic Azad University, Tehran, Iran;

[2]Faculty of Specialized Veterinary Medicine,Science and Research Branch, Islamic Azad University, Tehran, Iran

Corresponding author's email: hadi_kiani_vet@yahoo.com

Objective: Pasteurellosis is a contagious respiratory infectious disease of domestic and wild birds that sometimes acute blood infection and high mortality so sometimes chronic infection with swellen wattle.Fowl cholera occurs globally with a wide variety of manifestations ranging from peracute/acute systemic disease dominated by high mortality to relatively mild,chronic localized infections. The disease is considered to be of economic signifi cance to mosttypes of poultry and control of fowl cholera throughout the world depends mainly on appropriatebiosecurity and vaccination

Materials &Methods: The study of 10 commercial flocks of laying hen and broiler breeder flocks of mazandaran and khorasan done.

This flocks were under the care of the 20 weekly age.while that high losses and signs includes : swellen wattle, infectious of respiratory system ,torticollis , pharyngeal infection , conjunctivit with low losses in flocks were observe, beginning the study of body dead birds and since the necropsy of bodies , the sampling from liver , lung , eye and ear with Aseptic method then this samples culture on blood agar and macconkey agar and incubation for 24 hours that suspicious colonies were incubated based on the microscopic and biochemical characterities were identified.

Results & Conclusion: of the 6 cases suspected from 10 commercial laying flocks 2 samples and from 10 flocks of broiler breeder 5 samples separated that in the end of sample 7 flocks was isolated pasteurella multocida.

Keywords: Pasteurellosis,Fowl cholera, Broiler breeder, Layer,mazandaran, khorasan

The study on effect of *Turbo tox* on humoral immune response in broiler vaccinated against infectious*Bronchitis*

RezaeiM[1*] .,Azizi S[2] ., PanahiN [3]

1. Department of clinical sciences, Faculty of Veterinary Medicine,Urmia Branch, Islamic Azad University, Urmia,iran. 2,3. Graguate of Veterinary Medicine, Islamic Azad University Urmia Branch, ,Urmia, Iran.

Corresponding Author email:mehdi217mr@yahoo.com

Objectives:*Infectious bronchitis* as a viral disease serious damage to the poultry industry with respiratory sign, renal and reproductive losses in flockappears. Biosecurity conditions are essential to prevent disease sign and mortality is necessary.One way to prevention disease in the field is vaccination. The aim of this study was to evaluate the effects of *Turbotox*stimulate and strengthen the antibodies titer resulting from vaccination in broiler chicken is bronchitis.

Materials & Methods:A total of 144 broiler chicken (ROSS 308), 4 negatives in a completely randomized design with 6 treatments and three replicates for each group, a total of 18 groups considering 8 chicken were tested in each box. Turbo tox administer from day one with dosage of 250 gr (group 1), 500gr (group2), 750 gr (group 3), 1 kg(group4), 2 kg (Group 5) of 1000 kg feed and in group 6(control) took no drug. Blood samples were taken from each group in 24 and 34 days after vaccinationexamined based on ELISA testusing IDEXX standard kit.Lymphoid organs (bursa of Fabricius,spleen) weight were recorded.

Results & Conclusion: The results of this study showed that there were significant differences between groups ($P<0.05$) and groups of 250 , 500 and 750 gr Strengthening and stimulating effects the impact of Infectious bronchitis after vaccination titer elevation had a better performance.

Keywords:bronchitis, Turbotox, chickens, ELISA

Influence of Diets Supplemented with Silver Nanoparticles Coated on Oxidative enzymes of Broiler Chickens Zeolite

Smaili M[1], Hashemi SR[1], Davoodi D[2], Jafari ahangari Y[1], Hassani S[1] & Shabani A[1]

[1]Faculty of Animal Science, Gorgan University of Agricultural Sciences and Natural Resources, Gorgan, Iran.

[2]Nanotechnology Department, Agricultural Biotechnology Research Institute of Iran, Karaj, Iran.

Corresponding author email: hashemi711@yahoo.co.uk

Objective: Silver nanoparticles and other forms of silver are widely used nowadays for their antibacterial activity. Then, this study was carried out to evaluate the effect of different levels of silver nanoparticles coated on zeolit on Oxidative enzymes.

Materials & Methods: A total of 375 one-day old broilers (Cobb 500) were randomly divided into 5 treatments and 5 replicates of 15 birds which were kept on the floor pens. Treatments were: 1) control diet, 2) control diet supplemented with 1% zeolit and 3, 4, and 5) control diet supplemented with 1% zeolit coated with %0.25, %0.5 and %0.75 nanosilver. To evaluate the level of oxidative enzyme, on day 42 of production, two chickens were selected randomly and 3 mL blood samples were taken from wing vein. Blood samples were centrifuged at 3000 rpm for 10 min. Determinations of oxidative enzymes such as **the** superoxide dismutase (SOD), glutathione peroxidase **(**GPX) and malondialdehyde (MDA) were performed using an automated biochemical analyzer (Mindray, BS-200, Mainland, China) and industrial kits of Randos company used for each oxidative enzyme (GPX and SOD). Malondialdehyde (MDA) were measured manually.

Results & Conclusion: Results showed that the use of silver nanoparticles coated on zeolit at %0.5 increase the superoxide dismutase level compared to the control treatment and diet supplemented with 1% zeolit and silver nanoparticles coated on zeolit at %0.75 ($P<0/05$). There were no significant differences among treatments on malondialdehyde ($P>0/05$) and glutathione peroxidase ($P>0/05$). In conclusion, results showed that the silver nanoparticles coated on zeolit can improved the oxidative enzymesin broiler chickens.

Keywords: Broiler chickens, zeolit, oxidative enzymes, silver nanoparticles.

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Methionine could be partly replaced with betaine and choline in heat stressed broiler chicken's diet

Mahmoudi M[1*], Azarfar A[1], Khosravinia H[1]

[1] *Department of animal science, faculty of agriculture, Lorestan University, Khorramabad, Iran*

Corresponding author's email: mohammad.mahmoudi59@gmail.com

Objectives: It is shown that heat stress increases the need of birds to methyl group donors such as Met due to negative energy balance occurring when birds exposed to heat stress. Therefore, it would be expected that heat-stressed broilers cope with a shortage of Met that has to be supplemented via either a natural or a synthetic source of Met. We hypothesized that in heat-stressed broilers Met could be partly be replaced by other methyl donor compounds such as betaine and choline which are cheaper than Met without having any detrimental effect on production performance.

Materials & Methods: 288 1d old chicks (Ross 308) were randomly assigned to 1 of the 6 experimental treatments including control (1400 mg/kg Met deficient), control+ (without deficient), 280 mg/kg choline, 560 mg/kg choline, 320 mg/kg betaine and 640 mg/kg betaine as methyl group equivalent with 4 replicate pens of 12 birds each. In order to expose birds to HS, after d21 temperature was risen to 32-38 ^{0}C by an electrical heater hanging above each pen. Production performance parameters were including weight gain, feed intake and feed conversion ratio were recorded weekly. At d42 two bird of each pen were randomly selected and slaughtered, and the weight of their internal organs including proventriculus, gizzard, liver, spleen, heart, bursa of fabricius were recorded.

Results & Conclusion: Overall feed conversion ratio (0-42 d) and relative weights of proventriculus, liver and thigh were affected by dietary treatments ($P<0.05$). Dietary treatments had no effect on average daily gain on of d 0-21, d 21-42, d 0-42, feed intake of d 0-21- d 21-42, d 0-42 and feed conversion ratios of d 0-21, d 21-42, overall mortality rate (d 0-42), European efficiency factor and relative weight of carcass, breast, gizzard, spleen, heart, bursa of fabricius and the lengths of small intestine segments ($P>0.05$). In conclusion, except for dietary treatment containing 640 mg/kg of betaine, feeding heat-stressed broiler chickens with diets in which Met was partly replaced by betaine or choline resulted the similar production performance to birds fed with no Met deficient diet.

Keywords: betaine, choline, heat stress, methionine deficient, broilers.

Choline and beatine are promising substitutes for methionine in heat-stressed broiler chickens

Mahmoudi M[1*], Azarfar A[1], Khosravinia H[1]

[1] *Department of animal science, faculty of agriculture, Lorestan University, Khorramabad, Iran*

Corresponding author's email:mohammad.mahmoudi59@gmail.com

Objectives: It has been shownthat heat stress elevatesmethionine (Met) requirement of broiler chickens as it is involved in some energy yielding reactions in body. Therefore, heat-stressed broiler chickens might be at the risk of Met deficiency. Choline provides labile methyl groups necessary for the formation of Metfrom homocysteine, by being oxidized to betaine. We hypothesized that in heat-stressed broilersMet could be partly be replaced bya combination of dietary betaine and choline.Then we conducted this study to evaluate the effects of replacing Met with combination of betaine and choline in heat stressed broilers on production performance and weight of internal organs.

Materials & Methods:288 1d old chicks (Ross 308) were randomly assigned to 1 of the 6 experimental treatments including control (1400 mg/kg Met deficient), control+ (without deficient), 140 mg/kgcholine+ 160 mg/kgbetaine, 280 mg/kgcholine + 160 mg/kgbetaine, 140 mg/kgcholine + 320 mg/kgbetaine, 280 mg/kgcholine + 320 mg/kgbetaine as 1, 1.5 and 2 fold methyl group equivalent with 4 replicate pens of 12 birds each.In order to expose birds to HS, after d21 temperature was increasedto 32-38 ^{0}C usingelectrical heaterswhich were hungabove each pen. Production performance parameters including weight gain, feed intake and feed conversion ratio were recorded weekly. At d42 two birdsfromeach pen were randomly selected and slaughtered, and the weight of their internal organs including proventriculus, gizzard, liver, spleen, heart, bursa of fabricius and small intestine segments were recorded.

Results & Conclusion: Feed conversion ratio 0-21 d and 0-42 d, European efficiency factor and relative weights of gizzard, bursa of fabricius and length of duodenum and ilium were affected by dietary treatments ($P<0.05$).Dietary treatments had no effect on average daily gain on of d 0-21, d 21-42, d 0-42, feed intake of d 0-21- d 21-42, d 0-42 and feed conversion ratios of d 21-42, overall mortality rate (d 0-42)and relative weight of carcass, breast, liver, proventriculus, spleen, heartand the lengths of jejunum ($P>0.05$).In conclusion, except for dietary treatment containing140 mg/kgcholine + 320 mg/kgbetaine, feeding heat-stressed broiler chickens with diets in which Met was partly replaced by a combination ofbetaine and choline resulted tosimilar production performance to birds fed no Met-deficient diet.

Keywords: betaine, choline, heat stress, methionine deficient, broilers.

Dietary yeast cell wall (*Saccharomyces cerevisiae*) and nucleotides source combination for reducing enteral colonization of *Salmonella* Heidelbergin broilers

Bonato MA[1*], Ferreira AJP[2], Astolfi-FerreiraCS[2], Freire FL[1]

[1]ICCIndustrial Comércio Exportação e Importação Ltda, São Paulo,Brazil;[2]Departamento de Patologia, Faculdade de Medicina Veterinária e Zootecnia, Universidade de São Paulo, São Paulo, Brazil.

Corresponding author's email: melina.bonato@iccbrazil.com.br

Objective: The objective of this study was to verify the effectiveness of association of yeast cell wall and nucleotides source in the reduction of *Salmonella* Heidelberg in broilers and its performance.

Materials & Methods:160 one-day-old Ross-Aviagen males were distributed in a completely randomized design with 4 treatments and 4 replicate pens of 10 birds each: T1- Negative control (no additives/not infected); T2–Positive control (no additives/infected with *Salmonella* Heidelberg); T3– Diet with Hilyses® (10 kg/MT up to 10 days) + ImmunoGen® (0.5 kg/MT from 11 to 35 days; and 2 kg/MT from 36 to 42 days) + infected with *Salmonella* Heidelberg; T4– Diet with Hilyses® (10 kg/MT up to 10 days) + ImmunoGen® (0.5 kg/MT from 11 to 35 days; and 2 kg/MT from 36 to 42 days) - not infected.The birds from treatments 2 and 3 were infected with *Salmonella* Heidelberg orally (0.1 mL with $3x10^5$cfu per bird) directly into bird's crop at 3 days of age. Built-up (recycled) litter was used. Study criteria included body weight, body weight gain, feed intake and feed/gain at 42 days. Litter was collected weekly to detect the presence of *Salmonella* Heidelberg (re-isolation), and the crop and cecum of birds were analyzed for the same purpose (necropsy at 42 days).The data were analyzed using the GLM procedure of SAS (2002), and means were compared by Tukey's test at 5% probability. The nonparametric Kruskal-Wallis test in Minitab software 16 (2010) was used to analyze the values obtained from re-isolation of *Salmonella* Heidelberg.

Results & Conclusion: There were no statistical differences ($P>0.05$) between treatments in performance parameters. Considering the re-isolation of *Salmonella* Heidelberg values from litter, crop, and cecum, there were significant effects ($P<0.05$) for contamination. The litter of groups infected with *Salmonella* Heidelberg had the presence of the pathogen (continuous presence weekly in the litter during the trial period). However, when the birds were treated with Hilyses® + ImmunoGen® program there was a reduction of 52.6% and 12.5% in the crop and cecum of the birds, respectively. This reduction in contamination by *Salmonella* Heidelbergin the crop and cecum is important to help avoid carcass contamination in the processing plant.ImmunoGen® combined with the Hilyses® provided a 50% reduction in contamination by *Salmonella* Heidelberg in the crop, even with a litter contamination of 100%.

Keywords: performance, crop, cecum, litter contamination, additives

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Company Name:ARSHIA DAROU
Tel: +9804133295200
Fax: +9804133295400
Website: www.arshiadarou.com
Email: arshia_darou@yahoo.com
Field of Activity:Veterinary drug imports

Company: ASINEH PHARMACEUTICAL & HELTH CO.
Tel:+98 21 66934800
Fax : +98 21 66934392
Website: www.asineh.com
Email: info@asineh.com
Field of Activity: Exclusive distributor of Biochek Company and Charles River Company in Iran

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Company: Behbanshimi
Tel:+98 21 66581294-5
Fax : +98 21 66581354
Website: www.behbanshimi.ir
Email:behbanshimi.ir
Field of Activity: Disinfection & Antiseptic

Company Name: Damilka
Tel:+98 21 88630569-(021)88029422
Fax: +98 21 88229047
Website: www.damilka.com
Email: info@damilka.com
Field of Activity: Veterinary biological, pharmaceutical and feed additive products.

Company: Erfan Darou Veterinary Pharmaceutical Co.
Tel:+98 21 88590950-9
Fax : +98 21 88372061
Website: www.erfandarou.com
Email: erfan@erfandarou.com
Field of Activity: Manufacturing of veterinary and poultry pharmaceutical products Oral solutions ,Inject able solutions, Penicillin's .Water soluble powder and feed mixing powder.

Company Name: Golbid- MSD
Tel: +98 21 88612910-12
Fax: +98 21 88612913
Email: info@golbid.com
Website: www.golbid.com
Address: No.13 – 64th street – Yousefabad Ave. Tehran – Iran.
Field of Activity: Importer of veterinary pharmaceuticals, biological, feed additives, diagnostics and premixes.

Company Name:Hamahang Veterinary Pharmacists
Tel: +98 21 66913043
Fax: +98 21 66947134
Website: www.hamahangvp.com
Email: info@hamahangvp.com
Field of Activity:Import and distribute of veterinary pharmaceutical and additives

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Company Name: KAROON TCO.
Tel: +98 21 66930113
Fax: +98 21 66934916
Website: www.karoonco.com
Email:info@karoonco.com
Field of Activity: Importer of pharmaceutical and biological product for veterinary use

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Company Name: KhosroMedisaTeb Group-KMS
Tel: +98 21 82430
Fax: +98 21 88034007
Website: www.kmtmed.com
Email: info@kmtmed.com
Field of Activity: Production of organic and broad spectrum disinfectant for water, air, surfaces, etc.

Company name: MAHD AMIN GROUP
TeL: +982164079-66561532-66561517
Fax: +98 21 66561522
Website: www.mahdamingroup.com
Email: info@mahdamingroup.com
Filed of activity: Import, disttribution and sales of animal feed and feed.

Company Name:Nikan Pakhsh Behparvar
Tel: +9821 66597741-2
Fax: +9821 66942495
Website:www.npb.co.ir , www.vdn.ir
Email:info@npb.co.ir , info@vdn.ir
Field of Activity:Distribution of veterinary medicines, vaccines and biological products in Iran

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Company Name: Nutrex Co.
Tel: +98 21 88727644-6
Fax: +98 21 88728150
Website:www.nutrex.co.ir
Email: sorur.f@neda.net
Field of Activity: Producer of feed Additives

Company Name:Ocean Co.
Tel:+98 21 88916706
Fax:+98 21 88897273
Website:www.ocean-alf.com
Email: info@ocean-alf.com
Field of Activity: Exclusive Agent for Retsch, Eltra and Carbolite products in the Islamic Republic of Iran.

Company Name: Paeezan Darou
Tel: +98 21 88573446-9
Fax: +98 21 88573450
Website: www. paeezandarou.com
Email: info@ paeezandarou.com
Field of Activity: General distributer of behrood atrak &behsa & dianolka.

Company Name: Pars Dopharma
Tel: +98 21 66122213
Fax:+98 21 66122249
Website:www.parsdopharma.com
Email: info@parsdopharma.com
Field of Activity: Manufacturer of medicinal products for veterinary use

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Company Name: Pars Imen Daru Herbal Medicine Development Group.
Tel: +98 21 66909061-3
Fax: +98 21 66909277
Website: www. parsimendaruco.com
Email: info@ parsimendaruco.com
Field of Activity: Veterinary, poultry & Fisheries herbal medicine production.

Company Name: Pars JivarSoufi
Tel: : +98 21 88064425-8
Fax: +98 21 88064425
Website: www.ParsJivarSoufi.com
Email: PJS@parssoufi.com
Field of Activity:With motto of "Health, Our Goal," Pars JivarSoufi® joined companies in animal husbandry. Experienced in feed and feeding, breeding and hygiene, importing, marketing and utilizing advanced knowledge of day, developing its activities, takes leading role for smaller businesses.

Company Name: Parsian Exir Aria
Tel: +98 21 49752000
Fax: +98 21 44790258
Website: www.parsianexir.com
Email: info@parsianexir.com
Field of Activity: Import of Medicines, Vaccines, Feed Additives and Animal Biological Materials

Company Name: parsian Pakhsh Exir
Tel: +98 21 66935254
Fax: +98 21 66599064
Website: www.parsianpakhsh.com
Email: info @ parsianpakhsh.com
Field of Activity: Nationwide Distribution company of veterinary pharmaceutical, vaccines and Biological products.

Company: Persia Dam Darou
Tel: +982188931780
Fax : +982188931715
Website:www.persiavetco.com
Email:info@persiavetco.com
Field of Activity: Trading, Technical services, Marketing and Market Research related to Livestock, Poultry and Aquaculture including Pharmaceuticals, Biologics, etc., giving Consultation Services in the areas of Trade, Production and Veterinary Medicine.

Company: Rooyandarou Pharmaceutical Company
Tel: +982188937433
Fax : +982188896595
Website: www. rooyandarou.com
Email: info@rooyandarou.com
Field of Activity: Pharmaceutical

Company: Sava Pars Co.
Tel: +88 34 50 46 – 47
Fax : +88 32 58 69
Website:www.savapars.com
Email:sava@savapars.com
Field of Activity: Import ofmedicines, vaccines and animal biological materials

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Company Name:Tamin Ehtiajat Dam
Tel:+98 21 88605026
Fax: +98 21 88031809
Website:www.TED.co.ir
Email: info@TED.co.ir
Field of Activity:Poultry vaccines and pharmaceutical Distributor

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Company Name: Vetarteb Co.
Tel: 021-42977
Fax: 021-88675569
Website: www.vetarteb.com
Email: info@ vetarteb.com
Field of Activity: Import the Veterinary products.

Company Name: Viva Pars
Tel: 021-66121131
Fax: 021-66423997
Website: www.vivapars.com
Email: info@ vivapars.com
Field of Activity: Importation of Veterinary product namely Medication, feed and feed additives, etc.

به نام آن که جان را فکرت آموخت

پنجمین کنگره بین‌المللی دامپزشکی طیور

۱۲-۱۱ بهمن‌ماه ۱۳۹۴

تهران، مرکز همایش‌های بین‌المللی رازی

برگزار کنندگان

سازمان نظام دامپزشکی جمهوری اسلامی ایران
Veterinary Council I.R. IRAN

انجمن دامپزشکی طیور ایران
I.V.P.A.

کتاب مقالات

بسمه تعالی

تا جهـان بـود، از سر آدم فراز — کس نبود از راه دانش بی‌نیـاز
مردمـان بخـرد اندر هـر زمان — راه دانش را به‌هـر گـونه زبان
گرد کردنـد و گـرامی داشـتند — تا به‌سنگ اندر همی بنگاشتند
دانش اندر دل چراغ روشن‌است — وزهمه بد بر تن تو جوشن‌است

ضمن تبریک فرا رسیدن دهه‌ی فجر و سی‌وهفتمین سالروز پیـروزی شـکوهمند انقـلاب اسـلامی ایـران، مقـدم همـه‌ی اندیشـمندان و صاحبنظران داخلی و خارجی حوزه‌ی بهداشت و بیماری‌های طیور را به «**پنجمین کنگره بین‌المللـی دامپزشـکی طیـور**» گرامـی می‌دارم. برگزاری این کنگره در روزهای ۱۲-۱۱ بهمن‌ماه جاری توسـط سـازمان نظـام دامپزشـکی جمهـوری اسـلامی ایـران و انجمـن دامپزشکی طیور ایران با همکاری مؤسسـه تحقیقـات واکسـن و سـرم‌سـازی رازی، دانشـکده‌ی دامپزشـکی دانشـگاه تهـران و سـازمان دامپزشکی کشور، فرصت مغتنمی برای بازخوانی و به‌روزرسانی دانش همکاران شاغل در حوزه دامپزشکی طیور در خصـوص معضـلات و مشکلات بهداشتی طیور با حضور اندیشمندان و صاحبنظران داخلی و خارجی می‌باشـد. ایـن کنگـره بـه عنـوان شـانزدهمین کنگـره‌ی علمی- تخصصی سازمان نظام دامپزشکی ج.ا.ا. از سال ۱۳۸۶ تاکنون می‌باشد. یکی از ویژگی‌های منحصر به‌فرد کنگره‌هـای دامپزشـکی طیور سازمان نظام دامپزشکی ج.ا.ا. برگزاری منظم و دوسالانه‌ی آن در دوماهه‌ی آخر سـال مـی‌باشـد. بـه طـوری کـه کنگـره‌ی اول در روزهای ۳۰ بهمن و اول اسفند ۱۳۸۶؛ کنگره‌ی دوم در روزهای ۲-۱ اسفندماه ۱۳۸۸؛ کنگره سوم در روزهـای ۴-۳ اسـفندماه ۱۳۹۰ و کنگره‌ی چهارم در روزهای ۲۸-۲۷ بهمن‌ماه ۱۳۹۲ برگزار شده است. این افتخار برای سازمان نظام دامپزشکی وجود داشته است که در دومین کنگره‌ی بین‌المللی دامپزشکی طیور از مقام شامخ علمی و اخلاقی چهره‌ی ماندگار فقید دامپزشکی کشور، مرحـوم اسـتاد دکتـر احمد شیمی و در چهارمین کنگره‌ی بین‌المللی دامپزشکی طیور از مقام شامخ استاد شاخص بیماری‌های طیـور دانشـکده‌ی دامپزشـکی دانشگاه تهران و عضو پیوسته فرهنگستان علوم جمهوری اسلامی ایران جناب آقای دکتر محمدحسن بزرگمهری‌فرد تقدیر به‌عمل آورد.

محور غالب سخنرانی‌های این کنگره، «**بیماری‌های ویروسی طیور**» است که برخی از آن‌ها همانند برونشیت عفونی، آنفلوانزا و نیوکاسل نه تنها به مرور زمان از بیماری‌زایی و خسارت‌های بهداشتی و اقتصادی آن‌ها کاسته نشده است، بلکه به عنوان یک معضل قدیمی و تأثیرگذار، صنعت پرورش طیور را با چالشی جدی مواجه ساخته است. علاوه بر آن سندرم کمپلکس تنفسی، عفونت‌ها و بیماری‌های ناشی از رئوویروس‌ها و آدنوویروس‌ها نیز چالش‌های جدیدی را ایجاد کرده است که در این کنگره در این خصوص بحث و تبادل‌نظر فراوان صورت خواهد پذیرفت.

مراتب عمیق سپاس و امتنان خود را از اعضای محترم کمیته تخصصی دامپزشکی طیور سازمان نظام دامپزشکی ج.ا.ا. جناب آقایان دکتر علی‌اصغر اکبری، دکتر محمدحسن بزرگمهری‌فرد، دکتر سیدعلی پوربخش، دکتر سیدمصطفی پیغمبری، دکتر سعید چرخکار، دکتر فرشاد زین‌العابدین طهرانی، و سرکار خانم دکتر گیتا اکبری‌آزاد که نقش سیاستگذاری و برنامه‌ریزی علمی این کنگره بر عهده‌ی آنان بود، ابراز می‌دارم. از زحمات بی‌شائبه‌ی استاد محترم جناب آقای دکتر بزرگمهری‌فرد به عنوان دبیر کنگره و تلاش‌های خستگی‌ناپذیر استاد محترم جناب آقای دکتر پوربخش معاون محترم تحقیقات و فناوری مؤسسه تحقیقات واکسن‌وسرم‌سازی رازی به عنوان رییس کمیته علمی کنگره نیز صمیمانه قدردانی می‌نمایم. از همراهی تمامی حامیان مالی و تمامی بزرگواران و عزیزانی که در برگزاری این کنگره ما را یاری نمودند، صمیمانه سپاسگزاری می‌نمایم.

به امید دیدار در ششمین کنگره‌ی بین‌المللی
دامپزشکی طیور در زمستان ۱۳۹۶

دکتر محمدرضا صفری
رییس سازمان نظام دامپزشکی ج.ا.ا.
و رییس ستاد برگزاری کنگره

رییس ستاد برگزاری

دکترمحمدرضا صفری

رییس سازمان نظام دامپزشکی جمهوری اسلامی ایران

اعضای ستاد برگزاری

دبیر کنگره

دکتر محمدحسن بزرگمهری‌فرد

استاد دانشکده دامپزشکی دانشگاه تهران، عضو پیوسته فرهنگستان علوم جمهوری اسلامی ایران

رییس کمیته علمی کنگره

دکتر سیدعلی پوربخش

استاد مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر علی‌اصغر اکبری

دکتر گیتا اکبری‌آزاد

دکتر سیدمصطفی پیغمبری

دکتر سعید چرخکار

دکتر فرشاد زین‌العابدین طهرانی

(اعضای کمیته تخصصی دامپزشکی طیور سازمان نظام دامپزشکی ج.ا.ا.)

دبیر اجرایی کنگره

دکتر حسام‌الدین اکبرین

استادیار دانشکده دامپزشکی دانشگاه تهران

مدیر اجرایی همایش

دکتر سیامک گوهرخای

ویراستار انگلیسی

دکتر پریسا فلاحی

کمیته علمی

رییس کمیته علمی: دکتر سیدعلی پوربخش (استاد مؤسسه تحقیقات واکسن و سرم‌سازی رازی)

اعضا (به‌ترتیب حروف الفبا)

دکتر کرامت اساسی

دانشکده دامپزشکی دانشگاه شیراز

دکتر رمضانعلی جعفری

دانشکده دامپزشکی دانشگاه شهیدچمران اهواز

دکتر علی‌اصغر اکبری

انجمن دامپزشکی طیور ایران

دکتر سعید چرخکار

دانشکده دامپزشکی دانشگاه‌آزاد اسلامی واحد علوم و تحقیقات تهران

دکتر گیتا اکبری‌آزاد

دانشکده دامپزشکی دانشگاه‌آزاد اسلامی واحد کرج

دکتر محمد حسن‌زاده

دانشکده دامپزشکی دانشگاه تهران

دکتر محمدرضا باسامی

دانشکده دامپزشکی دانشگاه فردوسی مشهد

دکتر پیام حقیقی‌خوشخو

دانشکده دامپزشکی دانشگاه‌آزاد اسلامی واحد کرج

دکتر منصور بنانی

مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر ذوالفقار رجبی

دانشکده دامپزشکی دانشگاه تبریز

دکتر محمدحسن بزرگمهری‌فرد

دانشکده دامپزشکی دانشگاه تهران

دکتر شعبان رحیمی

دانشگاه تربیت مدرس

دکتر سیدمصطفی پیغمبری

دانشکده دامپزشکی دانشگاه تهران

دکتر جمشید رزم‌یار

دانشکده دامپزشکی دانشگاه فردوسی مشهد

دکتر عبدالکریم زمانی‌مقدم

دانشکده دامپزشکی دانشگاه شهرکرد

دکترمنوچهر عالی‌مهر

دانشکده دامپزشکی دانشگاه ارومیه

دکتر فرشاد زین‌العابدین‌طهرانی

سازمان دامپزشکی کشور

دکتر سیدعلی غفوری

سازمان دامپزشکی کشور

دکتر عبدالحمید شوشتری

مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر عادل فیضی

دانشکده دامپزشکی دانشگاه‌آزاد اسلامی واحد تبریز

دکتر نریمان شیخی

دانشکده دامپزشکی دانشگاه‌آزاد اسلامی واحد علوم و تحقیقات تهران

دکتر وحید کریمی

دانشکده دامپزشکی دانشگاه تهران

دکتر محمود صالحی

دانشکده دامپزشکی دانشگاه شهید باهنر کرمان

دکتر سیدمحمدمهدی کیایی

دانشکده دامپزشکی دانشگاه تهران

دکتر محمدرضا صالحی‌قمی

دامپزشک بخش خصوصی

دکتر منصور میاحی

دانشکده دامپزشکی دانشگاه شهیدچمران اهواز

دکتر اوستا صدرزاده

دانشکده دامپزشکی دانشگاه‌آزاد اسلامی واحد گرمسار

دکتر مهدی وصفی‌مرندی

دانشکده دامپزشکی دانشگاه تهران

دکتر علیرضا طالبی

دانشکده دامپزشکی دانشگاه ارومیه

دکتر مسعود هاشم‌زاده

سازمان دامپزشکی کشور

کمیته داوری

رییس کمیته داوری: دکتر سیدعلی پوربخش (استاد مؤسسه تحقیقات واکسن و سرم‌سازی رازی)

اعضا (به‌ترتیب حروف الفبا)

دکتر محمدمجید ابراهیمی
مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر کسری اسماعیل‌نیا
مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر حسام‌الدین اکبرین
دانشکده دامپزشکی دانشگاه تهران

دکتر عباس برین
دانشکده دامپزشکی دانشگاه تهران

دکتر حسین حسینی
دانشکده دامپزشکی دانشگاه آزاد اسلامی واحد کرج

دکتر سیدداود حسینی
مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر هادی حق‌بین‌نظرپاک
دانشکده دامپزشکی دانشگاه آزاد اسلامی واحد گرمسار

دکتر مراد رحیمی
دانشکده دامپزشکی دانشگاه رازی کرمانشاه

دکتر مسعودرضا صیفی‌آبادشاپوری
دانشکده دامپزشکی دانشگاه شهیدچمران اهواز

دکتر رضا طرقی
مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر محمد عبدالشاه
مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر محمد عبدی گودرزی
مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر سعید عطایی‌کچویی
مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر محسن فرخوی
دانشکده دامپزشکی دانشگاه تهران

دکتر محمدحسین فلاح

مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر حسین گودرزی

مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر ناصر قدسیان

مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر مهرداد مدیرصانعی

دانشکده دامپزشکی دانشگاه تهران

دکتر آرش قلیانچی‌لنگرودی

دانشکده دامپزشکی دانشگاه تهران

دکتر مسعود مقدم‌پور

مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر غلامرضا کریمی

مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر رضا ممیز

مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر امیر کفاشی

مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر محمدجواد مهربان‌پور

مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر مهدی کیانی‌زاده

مؤسسه تحقیقات واکسن و سرم‌سازی رازی

دکتر عباس نوری

مؤسسه تحقیقات واکسن و سرم‌سازی رازی

کمیته دانشجویی (به ترتیب حروف الفبا)

سیما آقانوری

دنیا آقایی‌نژاد

سروش اسفندیاری

محمدامین بیژنی

تینا تقوی

نازنین خان‌بابایی

محمد راه‌چمنی

همایون رییس‌دانایی

امیررضا سلمانی

حسین شکیبا

محمدامین فسونگر

محمدصادق قدرتی

سیدمحمد معتمدی‌زواره

صدیقه نظریان

فاطمه یوسف‌زاده‌روشن

شناسایی و تعیین خصوصیات ملکولی هفت بیماری تنفسی درسندرم کمپلکس تنفسی مرغداری های جوجه گوشتی استان قزوین - ۱۳۹۳

گیتا اکبری آزاد[۱]، پیام حقیقی خوشخو[۱]، حسین حسینی[۱]، بهشاد بهشتیان[۲]، علی لطیفی[۲]، سید صدرالدین موسوی نسب[۲]، مصطفی فلاح جوشقانی[۲]، محمدرضا کوشکباغی[۲]،سامان جباری[۲]، آرمین ثریایی[۲]*

[۱]گروه علوم بالینی دانشکده دامپزشکی، واحد کرج، دانشگاه آزادسلامی، کرج، ایران.

[۲]دانش آموخته دانشکده دامپزشکی، واحد کرج، دانشگاه آزادسلامی، کرج، ایران.

نویسنده مسؤول: gita199@yahoo.com

مقدمه: از میان بیماری های شایع طیور، بیماری های تنفسی با شدت های متنوع معمول ترین بیماری ها در سیستم های پرورش متراکم هستند. شناسایی عوامل بیماریزا براساس علایم بالینی و آزمایشات سرولوژی، برای دامپزشکان طیور پیچیده است. در این مطالعه، هفت عامل بیماری شایع تنفسی شامل: ویروس نیوکاسل (NDV)، ویروس برونشیت عفونی (IBV)، ویروس آنفلوانزا (AIV)، متاپنوموویروس(aMPV)، اورنیتوباکتریوم رینوتراکئال(ORT)، مایکوپلاسما گالی سپتیکوم (MG)، مایکوپلاسما سینوویه (MS)، به روش PCR و RT-PCR شناسایی و خصوصیات ملکولی آنها بررسی شد.

مواد و روش ها: نمونه گیری: در مجموع ۱۸۰ سواب نایی در فاز حاد بیماری تنفسی از ۲۰ مرغداری جوجه گوشتی در استان قزوین طی پاییز و زمستان ۱۳۹۳ اخذ شد که بعد از پول کردن، ۶۰ نمونه برای آزمایش در نظر گرفته شد.

استخراج ژنوم: RNAویروس هایND، AI،IBو aMPVبا کیت (Bioneer, Korea) استخراج و سپس cDNAتوسط Random Hexamer و کیت (CinnaGen, Iran) ساخته شد. DNA میکروارگانیسم هایMG، MS وORTبه روش جوشاندن استخراج شد.

PCR: ژن های هدف برای نیوکاسل: Fusion، برای برونشیت: Spike (HVR)،برای آنفلوانزا: ماتریکس و هماگلوتنین و برای aMPV: نوکلئوکپسید بود که در PCR تکثیر شد. از پروب TaqMan ، ذوب شدگی با تفکیک بالا (HRM)، RT-PCR و RT-PCRمخصوص تیپ، به ترتیب برای شناسایی سویه های aMPV, AIV, IBV, NDV استفاده شد. برای MG، MSوORTقسمتی از 16SrRNAتکثیر شد. سویه های حاد نیوکاسل و نوتیپ های مختلف برونشیت عفونی سکاتس شدند و درخت فیلوژنتیک آنها با برنامه Mega5 ترسیم شد.

نتایج: محصول PCRبرایND، IB، AI، aMPV، MG، MSوORT به ترتیب ۳۶۲، ۳۹۶، ۱۳۲& ۴۸۸، ۲۵۵، ۷۸۴، ۱۸۵ و ۲۰۷ جفت باز بود. در ۶۰ ٪ مرغداریها نیوکاسل، در ۹۵٪ گله ها برونشیت، در ۶۵ ٪ گله ها آنفلوانزا، در ۶۵ ٪ گله ها پنوموویروس، در ۵۵ ٪ گله ها اورنیتوباکتریوم رینوتراکئال، در ۱۰ ٪ گله هامایکوپلاسما سینوویه و در ۲۰ ٪ گله ها مایکوپلاسما گالی سپتیکوم شناسایی شد. براساس تعیین سویه نیوکاسل به روش پروب TaqMan، ۵ (۲۵٪) گله با سویه های ولوژنیک آلوده بودند. آنالیز سکانس این ویروس ها نتایج اولیه را تایید کرد و همگی آنها سکانس 112-RRQKRF-117 در ناحیه شکافتگی ژن F داشتند. طبق آنالیز فیلوژنی، تمام این ایزوله ها در ژنوتیپ VII D کلاس II سویه های نیوکاسل قرار داشتند. تعیین سویه های برونشیت عفونی نشان داد که سه ژنوتیپ واریانت II، 793/B و Mass در این گله ها در چرخش هستند. واریانت II در ۵۵ ٪ گله ها، 793/B در ۲۵ ٪ گله ها، Mass در ۱۰ ٪ گله ها و 793/B + Mass در ۱۰ ٪ گله ها شناسایی شد. این نتایج با سکانس و درخت فیلوژنی تایید شدند. درPCR اختصاصی تیپ بر اساس ژن ماتریکس، تمام نمونه های آنفلوانزا مثبت (متعلق به تیپ A)، در PCR اختصاصی تحت تیپ، متعلق به H9 بودند. تمامی سویه های aMPV شناسایی شده در RT-PCR اختصاصی تیپ، متعلق به تیپ B بودند.الگوی توزیع پاتوژن های شناسایی شده در۲۰ مرغداری متفاوت بود. در یک گله: ۶ پاتوژن، در ۴ گله: ۵ پاتوژن، در ۶ گله: ۳ پاتوژن و در ۲ گله: ۳ پاتوژن شناسایی شدند.

نتیجه گیری: در بین هفت پاتوژن شناسایی شده در ۲۰ مرغداری تحت مطالعه، ویروس برونشیت عفونی بالاترین میزان فراوانی (۹۵٪) و بعد از آن به ترتیب، ویروس های آنفلوانزا و پنوموویروس (۶۵ ٪)، نیوکاسل (۶۰ ٪)، اورنیتوباکتریوم رینوتراکئال (۵۵ ٪)، مایکوپلاسما سینوویه (۲۰ ٪) و مایکوپلاسما گالی سپتیکوم (۱۰ ٪) درمرغداریها را داشتند.

کلمات کلیدی: کمپلکس بیماری های تنفسی، PCR، تعیین سکانس، جوجه گوشتی، قزوین

سرواپیدمیولوژی و عوامل خطر آنفلوانزای H9N2 در طیور بومی ایران در سالهای ۱۳۹۲ و ۱۳۹۳

محمدحسین فلاح‌مهرآبادی [۱]، علیرضا باهنر [۲]، مهدی وصفی‌مرندی [۳]،اوستا صدرزاده [۴]، فرشاد زین‌العابدین طهرانی [۵]، سیدعلی غفوری [۵]،
[۱] دانش‌آموخته PhD اپیدمیولوژی، بخش بیماریهای ویروسی طیور، موسسه تحقیقات واکسن و سرم‌سازی رازی، کرج، ایران
[۲] استاد اپیدمیولوژی، دانشکده دامپزشکی، دانشگاه تهران، ایران
[۳] استاد بیماری‌های طیور، دانشکده دامپزشکی، دانشگاه تهران، ایران
[۴] استادیار بیماری‌های طیور، دانشکده دامپزشکی دانشگاه آزاد اسلامی واحد گرمسار، ایران
[۵] دفتر بهداشت و مدیریت بیماری‌های طیور، زنبور عسل و کرم ابریشم، سازمان دامپزشکی کشور، ایران
نویسنده مسؤول: abahonar@ut.ac.ir

خلاصه: آنفلوانزای پرندگانیک بیماری حاد، بسیار واگیردار، دارای تمایل به سیستمهای تنفسی، گوارشی و عصبی در گونه‌های مختلف پرندگان بومی و وحشی است و عامل آن ویروسی از خانواده‌ی ارتومیکسوویریده می‌باشد. این بیماری در ماکیان، بوقلمون‌ها و بسیاری دیگر از پرندگان توسط تحت تیپ‌های ویروس آنفلوانزای تیپ Aایجاد می‌شود. در تحقیق حاضر وضعیتسرمی طیور بومی کشور در خصوص تحت تیپH9N2 و عوامل خطر مرتبط با آن مورد بررسی قرار گرفت.

این مطالعه مقطعی،از شهریور تا آذرماه سالهای ۱۳۹۲ و ۱۳۹۳در روستاهای کشور انجام گرفت. بر روی نمونه‌ها ابتدا آزمایش غربالگری با آزمون الیزا (ELISA) انجام گرفت و سپس بر روی موارد الیزا مثبت، آزمایش ممانعت از هماگلوتیناسیون HI)(انجام شد. پرسشنامه برای متغیرهای مستقل و زمینه‌ای برای تعیین کننده‌های اصلی بیماری و به خصوص عوامل خطر موثر در بروز بیماری بر اساس نظر کارشناسان سازمان و مرور مقالات تهیه شد و در زمان مراجعه به واحدها، پس از خونگیری با مصاحبه با مالکین و مشاهده مستقیم تکمیل گردید.

در سال ۱۳۹۲ از۳۹۷ روستا (۱۵۸۸ خانوار) و ۱۱۵۴۶ پرنده نمونه‌گیری شد.از مجموع ۳۹۷ روستای نمونه‌گیری شده تعداد ۳۴۹ (۸۸٪) الیزا مثبت و ۲۸ روستا(۱۲٪) منفی بود. در آزمایش HI نیز تعداد ۳۴۱ (۸۶٪) روستا سرم مثبت بودند. از تعداد ۱۱۵۴۶ نمونه اخذ شده نیز تعداد ۴۵۱۷ نمونه مثبت بود(تیتر ۴ و بالاتر بر مبنای $\log_2$مثبت در نظر گرفته شد).

در سال ۱۳۹۳ از ۳۲۹ روستا (۱۳۱۶ خانوار) و ۸۹۰۱ پرنده نمونه‌گیری شد. از مجموع ۳۲۹ روستای نمونه‌گیری شده تعداد ۲۹۶ روستا (۹۰٪) الیزا مثبت و ۳۳ روستا(۱۰٪) منفی بود. همچنین در آزمایشات HI تعداد ۲۸۶ روستا (۸۶/۹٪) مثبت و ۴۳ روستا(۱۳/۱٪) منفی بودند.از تعداد ۸۹۰۱ نمونه اخذ شده، تعداد ۳۳۴۳ نمونه (۳۷/۶٪) در آزمون الیزا و تعداد ۲۷۷۱ نمونه(۳۱/۱٪) در آزمون H9 مثبت بودند.

در تحلیل انجام گرفته برای نتایج سال ۹۲ از بین متغیرهای مورد بررسی، آب و هوای گرم و مرطوب با نسبت شانس ۰/۱۴ و فاصله اطمینان ۹۵ درصد برابر ۰/۳۷-۰/۰۵ به عنوان متغیر محافظت کننده و دو متغیر حمل و نقل طیور زنده در منطقه با نسبت شانس ۲/۲۲ و فاصله اطمینان ۹۵ درصد نسبت شانس برابر ۴/۱۷-۱/۰۹ و قرار داشتن بازار فروش پرندگان در منطقه با نسبت شانس ۵/۸۶ و فاصله اطمینان ۹۵ درصد، نسبت شانس برابر ۳۱/۶۲-۱/۰۹ به عنوان عوامل خطر مشخص شدند.

در سال ۹۳ از بین متغیرهای مورد بررسی، آب و هوای کوهستانی با نسبت شانس ۰/۱۲ و فاصله اطمینان ۹۵ درصد برابر (۰/۵۳-۰/۰۳) به عنوان متغیر محافظت کننده و متغیر عدم دفن بهداشتی لاشه پرندگان تلف شده با نسبت شانس ۰/۳۴ و فاصله اطمینان ۹۵ درصد نسبت شانس برابر (۹/۲۰-۱/۲۱) به عنوان عوامل خطر آنفلوانزا ی H9N2 در سطح روستاهای کشور مشخص شدند.

شیوع سرمی بالای آنفلوانزای H9N2 در طیور بومی روستایی در این طرح نشان می‌دهد که این تحت تیپ سالهاست که در ایران بومی شده است. لذا ضروری است که طیور بومی نیز به دلیل نقشی که در نگهداری ویروس و انتقال احتمالی ان به طیور صنعتی دارند، در برنامه‌های مراقبت و کنترل این بیماری قرار گیرند.همچنین میبایست بحث استفاده از واکسن در طیور بومی با درنظر گرفتن مقبولیت و اصل هزینه- فایده برای کنترل عفونت در طیور بومی مورد توجه قرار گیرد. از طرفی با توجه به نقش بازارهای فروش پرندگان زنده در انتقال و گسترش ویروس آنفلوانزا، ساماندهی این بازارها ضروری است.

واژه‌های کلیدی: آنفلوانزای پرندگان، تحت‌تیپ H9N2، طیور بومی، ایران.

اولین گزارش جداسازی گالی باکتریوم از مرغان تخمگذار ایران

عطائی کچوئی، سعید[۱]؛ بنانی، منصور[۱]؛ گودرزی، حسین[۱]؛ افخم نیا، محمد[۱]؛ آبتین، علیرضا[۱]؛ نوری، عباس[۱]؛ اشتری، عباس[۱]؛ الهقدری، طلوع[۲].*

۱- بخش تشخیص بیماری های باکتریائی طیور، مؤسسه تحقیقات واکسن و سرم سازی رازی، کرج، البرز، ایران.

۲- بخش بیولوژی بیماری های دامپزشکی، دانشکده علوم بهداشت، دانشگاه کپنهاگ، دانمارک.

نویسنده مسؤول s.ataei@rvsri.ac.ir

گالی باکتریوم، یک کوکوباسیل گرام منفی، جنسی از خانواده پاستورلاسه می باشد که توانائی ایجاد عفونت در جنس های متعددی از گونه های میزبانان پرندگان را داراست. این ارگانیسم، در سال ۱۹۵۰ برای اولین بار توسط یوس هانسن تحت عنوان "باکتری کلوآک" که باکتری با توانائی همولیز است و از مرغ های مبتلا به سالپنژیت و پریتونیت حاد و نیز مرغان به ظاهر سالم جدا سازی می شود. در سال ۲۰۰۳ نام گالی باکتریوم به جای نام های پیشین از قبیل آکتینو باسیلوس سالپنژیتیس، عوامل شبه پاستورلا مولتوسیدا، و پاستورلا آناتیس انتخاب گردید. اعضای جنس گالی باکتریوم توانائی ایجاد دامنه وسیعی از ضایعات پاتولوژیک از ضایعات بخش فوقانی مجاری تنفسی، دژنراسیون فولیکول، آنتریت، پریکاردیت، هپاتیت، تورم تخمدان، سپتی سمی، تا عوارض مهمتری از قبیل سالپنژیت و پریتونیت را دارد. به هر حال، عفونت با گونه های مختلف گالی باکتریوم در مزارع مرغ تخمگذار و مادر اهمیت دارد زیرا این عوامل از پاتوژن های اصلی دستگاه تناسلی پرندگان به شمار می آیند. سالپنژیت و پریتونیت حاصل از عفونت گالی باکتریوم در مزارع مرغ تخمگذار باعث کاهش تولید تخم مرغ و افزایش تلفات می شود. گالی باکتریوم به تنهائی شایع ترین عامل عفونت باکتریائی در مزارع تخمگذار مبتلا به اختلالات دستگاه تناسلی به شمار می آید.

طی یک مطالعه میکروبی بر روی شناسائی عوامل باکتریائی ایجاد کننده عفونت های دستگاه تناسلی مرغان تخمگذار، جدایه هائی از موارد سالپنژیتی به دست آمد که مشکوک به گالی باکتریوم بود. بر اساس ویژگی های کشت و بیوشیمیائی شناسائی اولیه نشانگر جنس گالی باکتریوم بود. به منظور تایید، با استفاده از پرایمر های اختصاصی جنس گالی باکتریوم، آزمایش PCR انجام گردید. در آزمایش PCR جدایه مورد نظر باند هایی با وزن تقریبی ۱۰۳۰ و ۱۸۰ دالتون را نشان داد که اختصاصی گالی باکتریوم است.

بر اساس اطلاعات موجود این اولین گزارش از جداسازی و شناسائی گالی باکتریوم از ایران است. این مطالعه نشان دهنده وجود احتمال اهمیت نقشی برای گالی باکتریوم در صنعت مرغداری ایران است. این مطالعه همچنین نشان دهنده نیاز انجام تحقیقات بیشتر بر روی وضعیت اپیدمیولوژیک و نیز جداسازی و شناسائی گونه یا گونه های دیگر گالی باکتریوم در کشور است.

واژگان کلیدی: گالی باکتریوم، سالپنژیت، مرغ

آلودگی به ویروس آنفلوآنزای فوق حاد H5N1 در ایران: سه وقوع غیر مرتبط در طول یک دهه

شوشتری عبدالحمید[۱]؛ طهرانی فرشاد[۲] و روحانی

۱- موسسه تحقیقات واکسن و سرم سازی رازی

۲- سازمان دامپزشکی کشور

درآسیا، آفریقا و اروپا H5N1 به دلیل اثرات اقتصادی و اجتماعی وسیع ویروس آنفلوانزا تحت تیپ و مرگ بیش از۴۰۰ انسان به علت آلودگی به آن، این ویروس تبدیل به قسمت مهمی از موضوعات مورد بحث قرارگرفته است. وقوع این ویروس برای اولین‌بار در آسیا گزارش شد.

درحال حاضر براساس تنوع یکهژنوپروتیین هماگلوتینین ویروس

(گروه ژنوتیپی) تقسیم می‌شود. از لحاظ کلی، پرندگان وحشی به عنوان مخزن ویروس‌های آنفلوانزا با حدت بالا علیرغم نمونه‌برداری از هزاران پرنده H5N1 حدت کم می‌باشند. اما مخزن اصلی ساکن و مهاجر وحشی و سالم مشخص نیست. این احتمال وجود دارد که رد و بدل شدن ویروس بین باشد.H5N1پرندگان اهلی و وحشی آبزی بویژه در آسیای جنوبشرقی علت عمده بقای ویروس به‌ترتیب در سال‌های ۲۰۰۶ و ۲۰۱۱ و H5N1تاکنون سه گزارش رسمی در مورد وقوع ویروس ۲۰۱۵وجود دارد. گزارش اول مربوط به وقوع آلودگی به این ویروس در قوهای وحشی مهاجر در تالاب انزلی بود از لحاظ فیلوژنیک ویروس سال ۲۰۰۶ در گروه ژنوتیپی شماره ۲.۲ قرارگرفت. مورد دوم در سال ۲۰۱۱ در یک خانه روستایی در استان مازندران در شمال کشور اتفاق افتاد. آلودگی هم در مرغ و خروس و نیز در اردک‌های با سن زیر یک‌ماه رخداد. این ویروس از لحاظ فیلوژنیک درگروه ژنوتیپی شماره ۲.۳.۲.۱ قرارگرفت. وقوع سوم باز در استان مازندران و باز در ۲.۳.۲.۱ منتهی C یک خانه روستایی در سال ۲۰۱۵رخداد. این ویروس در گروه ژنوتیپی شماره در خوشهایی جدا از ویروس سال ۲۰۱۱ قرار گرفت این مسئله نشان می‌دهد که این دو ویروس از دو منشا مختلف وارد کشور شده‌اند. بااین‌همه این سه وقوع مشترکاتی از قبیل محل وقوع (شمال کشور) و نیز ارتباط نزدیک به ویروسهای آسیای جنوبشرق که احتمالا آبشخوراصلی ظهور و گسترش آنها می‌باشد، دارند. این مشاهدات نشان می‌دهدکه طبیعت اکولوژیک استان‌های شمالی به ویروس‌های آنفلوانزا این اجازه را می‌دهدکه ازاین مناطق به صورت یک دروازه بالقوه برای ورود به کشوراستفاده کنند. درحال حاظر یک برنامه مراقبت سراسری در کشور به صورت سالانه انجام می‌شود. بااین‌همه پیشنهاد می‌شود کار متراکم‌تری ازلحاظ جمعیت مورد هدف و نیز فواصل اجرای برنامه مراقبتی انجام شود. باید توجه کرد که انجام موفقیت‌آمیز تمام برنامه‌های مبارزه با ویروس آنفلونزا با تثبیت موقعیت و قدرت سازمان دامپزشکی کشور به‌عنوان مرجع اصلی در این مبارزه، رابطه تنگاتنگ دارد.

تولید ویروس نوترکیب بیماری نیوکاسل به روش ژنتیک معکوس: همگذاری و بازیابی

دکتر آیدین ملوکی
موسسه تحقیقات واکسن و سرم سازی رازی - کرج

از زمان تولید اولین ویروس نوترکیب نیوکاسل در پایان دهه ۹۰ میلادی تا کنون این ویروس توجه زیادی را به خود جلب کرده بطوریکه اکنون از نظر اقتصادی و بالینی جایگاه مهمی را به خود اختصاص داده است. در حقیقت در طول دو دهه اخیر سویه های گوناگونی از این ویروس توسط محققان در آزمایشگاههای مختلف دنیا تولید شده است. نکته قابل توجه این است که تقریبا روش و مبنای اصلی تولید این ویروس از آن زمان تاکنون ثابت باقی مانده است به این معنی که برای بازیابی ویروس نوترکیب فعال باید کمپلکسRNP شامل RNA ژنومی به همراه پروتئینهای NP، P و L بصورت همزمان در محیط حاضر باشند. آماده کردن این کمپلکس به چندین مرحله کلونینگ در داخل پلاسمیدهای مخصوص این کار نیاز دارد، اما برای سر هم کردن ژنوم پانزده هزار کیلوبازی این ویروس و یا بیان RNA پلی مراز روش های مختلفی ارائه گردیده است که به معرفی انها پرداخته می شود. از طرف دیگر علم ژنتیک معکوس می تواند برای شناسایی هر چه بهتر عامل یا عوامل تفاوت در حدت سویه ها بسیار کمک کننده باشد. مطمئنا افزایش دانش ما نسبت به عملکرد هر یک از پروتئینهای این ویروس کمک شایانی به ساخت واکسنهای بهتر و موثرتر خواهد نمود تا با این بیماری خطرناک طیور بصورت جدیتری مقابله گردد.

تاثیر نانو ذرات نقره پوشش داده شده بر کلینوپتیلولیت بر جمعیت میکروبی چینه‌دان جوجه‌های گوشتی

اسمعیلی مینا[۱]، هاشمی سیدرضا[۱*]، داودی داریوش[۲]، جعفری آهنگری یوسف[۱]، حسنی سعید[۱]، شبانی اکرم[۱]
[۱]دانشکده علوم دامی، دانشگاه علوم کشاورزی و منابع طبیعی گرگان، گلستان، ایران
[۲]بخش تحقیقات نانوتکنولوژی، پژوهشکده بیوتکنولوژی کشاورزی ایران، کرج، ایران
[*] نویسنده مسؤول: Hashemi711@yahoo.co.uk

مقدمه: نانو ذرات نقره و شکل‌های دیگر از نقره به دلیل فعالیت ضد میکروبی کاربرد گسترده‌ای دارند. هدف از انجام این آزمایش، بررسی اثر نانو ذرات نقره پوشش داده شده بر کلینوپتیلولیت بر جمعیت میکروبی چینه‌دان بود.

مواد و روش‌ها: در این مطالعه ۳۷۵ قطعه جوجه گوشتی یکروزه سویه تجاری کاب ۵۰۰ در قالب یک طرح کاملاً تصادفی در ۵ گروه آزمایشی با ۵ تکرار و ۱۵ قطعه پرنده در هر تکرار توزیع شدند. گروه‌های آزمایشی شامل ۱) جیره پایه یا شاهد ۲) جیره پایه مکمل شده با ۱ درصد کلینوپتیلولیت و ۳، ۴ و ۵ جیره پایه مکمل شده با ۱ درصد کلینوپتیلولیت پوشش داده شده با سه سطح مختلف نانو ذرات نقره (۰/۲۵درصد، ۰/۵درصد و ۰/۷۵درصد) بودند. در روز ۴۲ دوره پرورش از هر واحد آزمایشی ۲ قطعه پرنده به صورت تصادفی انتخاب، وزن کشی و کشتار شد. بلافاصله محتویات چینه‌دان در ظروف استریل جمع‌آوری شد. مقدار یک گرم از محتویات چینه‌دان به نسبت ۱ به ۱۰ با محلول بافر فسفات هموژنیزه شد. پس از ساخت سری رقیق سازی تعداد کل باکتری‌های هوازی بر روی محیط مغذی PCA[۱] پس از گرمخانه گذاری در دمای ۳۸ درجه سانتیگراد به مدت ۴۸ ساعت شمارش گردید. شمارش لاکتوباسیل‌ها بر روی محیط مغذی MRS[۲] و پس از گرمخانه‌گذاری در دمای ۳۸ درجه سانتیگراد به مدت ۴۸ ساعت انجام شد.

نتایج و بحث: در روز ۴۲ دوره‌ی پرورش استفاده از نانو ذرات نقره پوشش داده شده بر کلینوپتیلولیت در سطوح ۰/۲۵٪ و ۰/۵٪ سبب افزایش جمعیت لاکتوباسیل‌ها نسبت به جیره پایه و جیره پایه مکمل شده با ۱٪ کلینوپتیلولیت گردید ($P<0/0009$). اختلاف معنی‌داری بین تیمارها از نظر جمعیت کل باکتری‌ها مشاهده نشد ($P<0/0523$). نتایج نشان داد که استفاده از نانو ذرات نقره پوشش داده شده بر کلینوپتیلولیت می‌تواند سبب بهبود جمعیت باکتری‌های مفید در جوجه‌های گوشتی شود.

کلمات کلیدی: جوجه گوشتی، کلینوپتیلولیت، جمعیت میکروبی، نانو ذرات نقره

تاثیر جیره مکمل شده با نانو ذرات نقره پوشش داده شده بر زئولیت بر آنزیم‌های اکسیداتیو جوجه‌های گوشتی

اسمعیلی مینا[۱]، هاشمی سیدرضا[۱*]، داودی داریوش[۲]، جعفری آهنگری یوسف[۱]، حسنی سعید[۱]، شبانی اکرم[۱]
[۱]دانشکده علوم دامی، دانشگاه علوم کشاورزی و منابع طبیعی گرگان، گلستان، ایران
[۲]بخش تحقیقات نانوتکنولوژی، پژوهشکده بیوتکنولوژی کشاورزی ایران، کرج، ایران
[*] نویسنده مسؤول: Hashemi711@yahoo.co.uk

مقدمه: نانو ذرات نقره و شکل‌های دیگر از نقره به دلیل فعالیت ضد میکروبی کاربرد گسترده‌ای دارند. هدف از این مطالعه، بررسی اثر سطوح مختلف نانو ذرات نقره پوشش داده شده بر زئولیت بر آنزیم‌های اکسیداتیو بود.

مواد و روش‌ها: در این مطالعه ۳۷۵ قطعه جوجه گوشتی یکروزه سویه تجاری کاب ۵۰۰ در قالب یک طرح کاملاً تصادفی در ۵ گروه آزمایشی با ۵ تکرار و ۱۵ قطعه پرنده در هر تکرار توزیع شدند. گروه‌های آزمایشی شامل ۱) جیره پایه یا شاهد ۲) جیره پایه مکمل شده با ۱ درصدزئولیت و ۳، ۴ و ۵ جیره پایه مکمل شده با ۱ درصد زئولیت پوشش داده شده با سه سطح مختلف نانو ذرات نقره (۰/۲۵درصد، ۰/۵درصد و ۰/۷۵درصد) بودند. به‌منظور تعیین میزان آنزیم اکسیداتیو در روز ۴۲ دوره پرورش دو قطعه جوجه گوشتی به صورت تصادفی انتخاب شدند. سپس از ورید بالی آنها حدود ۳ میلی لیتر خون گرفته شد. نمونه های خون به مدت ۱۰ دقیقه با سرعت ۳۰۰۰ دور سانتریفیوژ گردید. آنالیز نمونه‌های خون توسط دستگاه اتوآنالایزر مدل (Mindray, BS-200, Mainland, China) و با استفاده از کیت‌های تجاری شرکت راندوکس برای هر کدام از آنزیم-های اکسیداتیو (SOD و GPX) انجام شد. مالون دی آلدهاید هم به صورت دستی اندازه گیری شد.

نتایج و بحث: نتایج نشان داد که استفاده از نانو ذرات نقره پوشش داده شده بر زئولیت در سطح ۰/۵٪ سبب افزایش سوپر اکسید دیسموتاز در مقایسه با تیمار شاهد، تیمار شاهد مکمل شده با ۱٪ زئولیت و تیمار مکمل شده با نانو نقره در سطح ۰/۷۵٪ شد ($P<0/05$). اختلاف معنی‌داری بین تیمارها از نظر غلظت گلوتاتیون پراکسیداز ($P>0/05$) و مالون دی‌آلدهاید مشاهده نشد ($P>0/05$). نتایج نشان داد که نانو ذرات نقره پوشش داده شده بر زئولیت می‌تواند سبب بهبود آنزیم‌های اکسیداتیو جوجه‌های گوشتی شود.

کلمات کلیدی: جوجه گوشتی، زئولیت، آنزیم اکسیداتیو، نانو ذرات نقره

بررسی عملکرد و خواص مرفومتریک روده در مرغان تخمگذار تولک برده شده با پودر یونجه

احسان شهرامی[1*] و حسن رکنی[2]

[1*] بخش علوم دامی مرکز تحقیقات و آموزش کشاورزی و منابع طبیعی استان قزوین، قزوین، ایران، [2] سازمان تحقیقات، آموزش و ترویج کشاورزی، تهران، ایران

[*] نویسنده مسؤول: e.shahrami@gmail.com

مقدمه: روش مرسوم در تولک بری شامل حذف کامل خوراک برای چندین روز متوالی است. اما نگرانی در خصوص آسایش رفاه حیوان وجود دارد. همچنین استفاده از گرسنگی برای تولک بردن اجباری پرنده می تواند ساختار و محیط میکروبی روده را به طور منفی تحت تاثیر قرار داده و موجب کلونیزه شدن آلودگی سالمونلایی در این منطقه گردد. به همین منظور جایگزین کردن جیره های غذایی برای تولک بری به جای روش گرسنگی در حال توسعه هستند. پودر یونجه عمدتاً شامل فیبر نامحلول است که می تواند برای تولک بری مورد استفاده قرار گیرد. هدف از انجام تحقیق حاضر تعیین اثرات استفاده از یونجه به عنوان یک ماده غذایی پر فیبر در تولک بری اجباری بر روی خصوصیات مورفولوژیک روده و عملکرد مرغان تخمگذار تجاری است.

مواد و روش ها: در این آزمایش از ۱۰۸ قطعه مرغ تخمگذار از سویه های لاین (W36) در سن ۷۴ هفتگی در قالب یک طرح کاملاً تصادفی با ۳ تیمار، ۶ تکرار و ۶ پرنده در هر تکرار استفاده شد. تیمارهای مورد استفاده در این آزمایش جهت اعمال تولک بری به مدت ۱۲ روز عبارت بودند از: ۱- گروه شاهد (دریافت کننده جیره تخمگذاری) ۲- گروه گرسنه ۳- گروه تغذیه شده با ۹۰ درصد پودر یونجه به اضافه ۱۰ درصد جیره تخمگذاری. در پایان دوره تولک (روز ۱۲) ۲ پرنده از هر تکرار برای نمونه برداری از هر ۳ منطقه روده کشتار شدند. عملکرد پرنده ها نیز به مدت ۱۲ هفته پس از دوره تولک مورد بررسی قرار گرفت.

نتایج و نتیجه گیری: تیمار گرسنه کمترین طول پرز را در هر ۳ ناحیه روده داشت ($P<0/05$). بیشترین عمق کریپت در ناحیه دئودنوم مربوط به تیمار گرسنه بود ($P<0/05$). در هر ۳ ناحیه روده کمترین مقدار شاخص پرز و سطح پرز در تیمار گرسنه مشاهده شد ($P<0/05$). در تمامی نواحی روده بیشترین شمار سلول های گابلت در تیمار یونجه و کمترین آنها در تیمار گرسنه مشاهده شد ($P<0/05$). بیشترین میانگین توده تخم مرغ تولیدی در دوره پس از تولک در گروه گرسنه مشاهده شد ($P<0/05$). بهترین ضریب تبدیل غذایی در دوره پس از تولک نیز در گروه یونجه مشاهده شد ($P<0/05$). نتایج این آزمایش نشان دادند که استفاده از جیره غنی از یونجه برای تولک بری مرغان تخمگذار سبب بهبود ساختار مورفولوژیک روده و عملکرد در دوره پس از تولک گردید.

کلمات کلیدی: تولک بری اجباری، یونجه، مورفولوژی روده، عملکرد، مرغان تخمگذار

بررسی تغییرات هورمونی، پاسخ ایمنی و زمان بازگشت به تولید در مرغان تخمگذار تولک برده شده با پودر یونجه

احسان شهرامی[1*] و حسن رکنی[2]

[1*] بخش علوم دامی مرکز تحقیقات و آموزش کشاورزی و منابع طبیعی استان قزوین، قزوین، ایران، [2] سازمان تحقیقات، آموزش و ترویج کشاورزی، تهران، ایران

[*]ایمیل نویسنده مسؤول: e.shahrami@gmail.com

مقدمه: محرومیت از غذا متداول ترین و موثرترین روش تولک بری اجباری در پرندگان تخمگذار است. ولیکن تولک بری به روش گرسنگی سبب بروز استرس و ناهنجاری در پرنده می شود. استرس عامل عمده زوال آسایش در پرنده هاست که معمولاً موجب بروز آبشاری از تغییرات در سلول های ایمنی نظیر تغییر در نسبت هتروفیل به لنفوسیت به عنوان یک شاخص مهم استرس محیطی در پرندگان می گردد. نتیجتاً استفاده از رژیم های غذایی کم انرژی نظیر یونجه مورد توجه قرار گرفته اند. هدف از تحقیق حاضر بررسی تغییرات هورمونی و پاسخ ایمنی در مرغان تخمگذار تغذیه شده با پودر یونجه در مقایسه با مرغان محروم از غذا در خلال دوره تولک بود.

مواد و روش ها: در این آزمایش از ۱۰۸ قطعه مرغ تخمگذار از سویه های لاین (W36) در سن ۷۴ هفتگی در قالب یک طرح کاملاً تصادفی با ۳ تیمار، ۶ تکرار و ۶ پرنده در هر تکرار استفاده شد. تیمارهای مورد استفاده در این آزمایش جهت اعمال تولک بری به مدت ۱۲ روز عبارت بودند از: ۱- گروه شاهد (دریافت کننده جیره تخمگذاری) ۲- گروه گرسنه ۳- گروه تغذیه شده با ۹۰ درصد پودر یونجه به اضافه ۱۰ درصد جیره تخمگذاری. از ۲ پرنده در هر تکرار نمونه گیری خون جهت آنالیز هورمونی و شمارش سلول های سفید خون در روزهای صفر، ۳، ۶، ۹ و ۱۲ تولک انجام شد. عملکرد پرنده ها نیز به مدت ۱۲ هفته پس از دوره تولک مورد بررسی قرار گرفت.

نتایج و نتیجه گیری: جمعیت کل سلول های سفید خون در اوایل دوره تولک در مرغان گرسنه در مقایسه با سایر گروه ها پایین تر بود ($P<0/05$). در روزهای سوم و ششم تولک، نسبت هتروفیل به لنفوسیت در مرغان تولک رفته افزایش یافت و این افزایش در مرغان گرسنه در مقایسه با گروه یونجه بیشتر بود ($P<0/05$). غلظت هورمون T_3 در مرغان تولک رفته در مقایسه با مرغان تولک نرفته (گروه شاهد) کاهش یافت ($P<0/05$). غلظت هورمون T_4 در مرغان تولک رفته نسبت به مرغان تولک نرفته افزایش یافت و این افزایش در روزهای ششم و نهم در مرغان گرسنه بیشتر بود ($P<0/05$). زمان بازگشت به تولید و زمان رسیدن به ۵۰ و ۸۰ درصد تولید در گروه یونجه نسبت به گروه گرسنه کوتاهتر بود ($P<0/05$). نتایج این آزمایش نشان دادند که جیره حاوی ۹۰ درصد پودر یونجه توانست برخی از شاخص های استرس فیزیولوژیک در خلال دوره تولک را کاهش دهد و عملکرد اقتصادی را بهبود بخشد.

کلمات کلیدی: یونجه، کورتیکو استرون، تولک بری اجباری، مرغان تخمگذار، هورمون های تیروئید

محافظت پرندگان در برابر چالش با ویروس برونشیت عفونی مشابه واریانت ۲ با استفاده از ترکیب سویه‌های 1/96 و H120

مصطفی حبیبی[۱]، وحید کریمی[۱]، سید علی غفوری[۲]، مسعود هاشم‌زاده[۳]، رضا خلعت‌آبادی فراهانی[۲]، حسین مقصودلو[۲]، حامد عبدالهی[۲]، پروانه صیفوری[۲] و آرش قلیان‌چی لنگرودی[۴]

[۱]گروه بیماری‌های طیور دانشکده دامپزشکی دانشگاه تهران، [۲]سازمان دامپزشکی کشور، [۳]مؤسسه واکسن و سرم‌سازی رازی، [۴]گروه میکروبیولوژی و ایمنولوژی دانشکده دامپزشکی دانشگاه تهران

بیماری برونشیت عفونی یک بیماری جهانی پرندگان می‌باشد که تمامی لاین‌های طیور پرورشی را درگیر می‌کند. این مطالعه با هدف بررسی محافظت ایجاد شده توسط دو واکسن از دو سروتیپ متفاوت (ماساچوست و 793/B) علیه چالش با ویروس‌های مشابه IS/1494/06 (ویروس‌های مشابه واریانت ۲)، با گسترش خاورمیانه‌ای، صورت گرفت. پرندگان به ۴ گروه تقسیم شدند (تعداد ۲۰ پرنده در هر گروه). گروه‌های اول و دوم (به عنوان گروه‌های کنترل منفی و گروه واکسن نخورده-چالش داده شده) هیچ واکسنی را دریافت نکردند. گروه‌های ۳ و ۴ در ۱ و ۱۴ روزگی به ترتیب واکسن‌های H120 -H120 و H120–1/96 را دریافت نمودند. ۲۱ روز قبل از چالش تیتر آنتی‌بادی علیه بیماری برونشیت عفونی جهت ارزیابی سطح سرومی آنتی‌بادی حاصل از واکسیناسیون، با استفاده از روش الایزا تعیین گردید. پنج روز پس از چالش نمونه‌های بافتی نای، ریه و کلیه‌ها جهت ارزیابی فعالیت سیستم مژکی دستگاه تنفس، میزان RNA در بافت‌ها (با استفاده از روش Real-Time RT-PCR کمی) و ارزیابی هیستوپاتوژیک، جمع‌آوری گردید. هم‌چنین پس از چالش نمره‌بندی علایم بالینی نیز صورت گرفت. به‌طور کلی، نتایج حاکی از قابلیت محافظتی قابل قبول برنامه واکسیناسیون استفاده شده بود. فعالیت بهتر سیستم مژکی نای (۶۹/۲ درصد محافظت) در گروه دریافت‌کننده واکسن‌های H120–1/96 مشاهده گردید. هم‌چنین این گروه تیتر الایزای بالاتری (GMT:1960) را در مقایسه با گروه دریافت‌کننده واکسن‌های H120-H120 (GMT:1064) نشان داد که این تفاوت‌ها معنی‌دار ($P<0.05$) بود. تکثیر ویروس چالشی در گروه دریافت‌کننده واکسن‌های H120-1/96 در مقایسه با گروه H120-H120 حاکی از کاهش قابل‌توجهی از ویروس چالشی در نای (۵۰۳ در مقایسه با $۱۰^{۳}$*۱/۵) و کلیه (صفر در مقایسه با ۱۹۰) بود. نمره‌دهی علایم بالینی در پرندگان چالش‌داده شده نیز نشان‌دهنده تأثیر قابل توجه واکسیناسیون بر کاهش علایم بالینی بود که این رتبه‌بندی پاتولوژیک نای و یافته‌های هیستوپاتولوژیک ریه‌ها و کلیه‌ها نشان دهنده تأثیر مطلوب واکسیناسیون بر پیشگیری از ایجاد ضایعات پاتولوژیک بود. نتیجه‌گیری نهایی این که، استفاده از ترکیب واکسن‌های متفاوت از سروتیپ‌های مختلف جهت کنترل ویروس مشابه واریانت ۲ نتیجه بهتری در مقایسه با استفاده از واکسن یک سروتیپ به همراه دارد. با این وجود استفاده از سایر سویه‌های در حال چرخش جهت یافتن بهترین برنامه واکسن مورد نیاز می‌باشد.

لغات کلیدی: برونشیت عفونی طیور، واکسیناسیون، سویه 1/96، محافظت متقاطع، سروتیپ793/B

آلودگی به نماتود *آمیدوستومم فولیگوله* در چنگر (*فولیکا آترا*) ارجاع شده از بندر انزلی

عباس ایمانی باران*

گروه پاتوبیولوژی دانشکدهٔ دامپزشکی دانشگاه تبریز، تبریز، ایران

*** نویسندهٔ مسؤول: a.imani@tabrizu.ac.ir**

هدف: در سال‌های اخیر بررسی آلودگی در حیوانات وحشی توسط انگل‌شناسان، پژوهشگران بیولوژی و حیات وحش مورد توجه قرار گرفته است. این توجهات می‌توانند نقش مهمی در مطالعات اپیدمیولوژیکی و راهبردهای کنترلی آلودگی‌های انگلی در حیوانات اهلی و وحشی ایفا کنند. هدف از مطالعهٔ حاضر گزارش آلودگی با *آمیدوستومم فولیگوله* در دو قطعه چنگر ارجاع داده شده از بندر انزلی بود. *آمیدوستومم فولیگوله* متعلق به خانوادهٔ *آمیدوستومیده* است که در پرندگان آبزی اهلی و و حشی در مخاط سنگدان و گاهی اوقات پیش معده و مری دیده می‌شود. کرم‌ها باریک و به رنگ متمایل به قرمز هستند. طول نر ۱۰-۱۷ mm و ماده ۱۲-۲۴ mm بوده، محوطهٔ دهانی کوتاه، پهن با دیوارهٔ ضخیم بوده و سه دندان نوک تیز در قاعدهٔ دهان دیده می‌شوند. نر دارای کیسهٔ جفتگیری و دو اسپیکول به طول ۰/۲-۰/۳ mm و هرکدام در انتها دو شاخه می‌شود.

مواد و روش‌ها: برای جستجوی انگل‌های داخلی، لاشه‌های دو چنگر که از بندر انزلی به آزمایشگاه انگل‌شناسی دانشکدهٔ دامپزشکی دانشگاه تبریز ارجاع داده شده بودند تشریح شدند. فقط سه نماتود نر از محتویات رودهٔ یکی از چنگرها جدا شدند و پس از مونته کردن، انگل‌ها با میکروسکوپ نوری آزمایش شدند و تشخیص بر اساس مشخصات ریخت‌شناسی انجام شد.

نتایج و نتیجه‌گیری: بر اساس مشخصات ریخت‌شناسی و کلیدهای تشخیصی معتبر، سه نماتود به عنوان گونهٔ *آمیدوستومم فولیگوله* تشخیص داده شدند. این گونهٔ نماتود قبلاً از ایران گزارش شده است. برای مثال، در بررسی فونستیک انگل‌های کرمی پرندگان از ۲۴ پرندهٔ ماهی خوار در استان خوزستان (Farahnak et al., 2004) *آمیدوستومم فولیگوله* یکی از نماتودهای گزارش شده از دستگاه گوارش با همان تعداد بود.

کلمات کلیدی: چنگر، *فولیکا آترا*، *آمیدوستومم فولیگوله*، انزلی

کولپوسفالوم فرژیلی، Denny 1842 (آمبلی‌سرا، منوپونیده) از کلاغ زاغی: اولین گزارش موردی در ایران

*عباس ایمانی باران**
گروه پاتوبیولوژی دانشکدهٔ دامپزشکی دانشگاه تبریز، تبریز، ایران
* ایمیل نویسندهٔ مسؤول **a.imani@tabrizu.ac.ir**

هدف: هدف از مطالعهٔ حاضر گزارش *کولپوسفالوم فرژیلی* در کلاغ زاغی برای اولین بار در ایران است.
مواد و روش‌ها: در طول تابستان ۱۳۸۹ به منظور بررسی اکتوپارازیت‌ها، در مجموع ۳ کلاغ زاغی از منطقهٔ میاندوآب شکار شدند و به آزمایشگاه انگل-شناسی دانشکدهٔ دامپزشکی دانشگاه ارومیه منتقل شدند. سپس پرنده‌ها در کیسهٔ پلاستیکی با مقداری پنبهٔ آغشته به کلروفرم قرار داده شدند و پس از آن شپش‌ها از پرهای پرنده‌ها جمع‌آوری شدند. در مجموع، ۷ شپش پیدا شدند و همهٔ نمونه‌ها بر اساس روش‌های معمول انگل‌شناسی آبگیری، شفاف-سازی و مونته شدند. ابعاد قسمت‌های مختلف بدن نمونه‌های مونته شده با استفاده از عدسی چشمی ۱۰x پس از کالیبره کردن میکروسکوپ در بزرگنمایی ۱۰x-۲۰x اندازه‌گیری شدند.
نتایج و نتیجه‌گیری: شناسایی شپش‌ها نشان داد که همهٔ آنها متعلق به گونهٔ *کولپوسفالوم فرژیلی* (آمبلی‌سرا، منوپونیده) هستند. به لحاظ ریخت‌شناسی، بدن به رنگ قهوه‌ای و کاملاً کیتینی بود. ابعاد متوسط شپش عبارت بودند از طول کل بدن ۲ mm، طول سر ۰/۳۵mm، عرض بدن ۰/۵ mm، شاخص رأسی (نسبت طول سر به عرض سر) ۰/۷، طول سینه ۰/۳mm،عرض سینه ۰/۴۸ mm، طول شکم ۱/۲mm و عرض شکم ۰/۶۸ mm. شکاف قدامی چشم کوتاه و پهن که یک ناودانی را تشکیل می‌داد. سر دارای لکه‌های چشمی و پس سری به شدت کیتیی شده بود. شاخک‌ها دیده نمی‌شدند. جفت پای خلفی نسبتاً قوی و طویل‌تر از دو جفت پای جلویی بودند. شکم دارای ۸ قطعه همراه با خارهای فراوان بود. با جستجوی تمام مطالعات انگل‌های خارجی پرندگان در ایران، چنین شپشی با مشخصات ذکر شده تا به حال گزارش نشده است. بنابراین، بر اساس کلیدهای تشخیصی معتبر و هم چنین پس از مکاتبات الکترونیکی با یکی از مشهورترین انگل‌شناسان ترکیه (احمد آنور گریشگین) مشخص شد که شپش‌های جدا شده گونهٔ *کولپوسفالوم فرژیلی*می-باشند.
کلمات کلیدی: *کولپوسفالوم فرژیلی*، *منوپونیده*، کلاغ زاغی، ایران

ارزیابی سمیت ناشی از تجویز دوزهای بالا و یا طولانی مدت داروی سولفادیمتوکسین- تری‌متوپریم بر پارامترهای بیوشیمیایی مربوط به عملکرد کبد و کلیه در جوجه‌های گوشتی

نجمه مبرایی[1]، نجمه مصلح[2]، محبوبه اشرافی[1]، طهورا شمالی[1]*
[1] گروه علوم پایه دانشکده دامپزشکی دانشگاه شیراز، [2] گروه علوم درمانگاهی دانشکده دامپزشکی دانشگاه شیراز
ایمیل نویسنده مسؤول: nmosleh@shirazu.ac.ir

هدف: سولفونامیدهای تقویت شده از جمله سولفادیمتوکسین- تری متوپریم به میزان زیادی در صنعت طیور مورد استفاده قرار می‌گیرند. با توجه به احتمال بروز مسمومیت دارویی در طیور صنعتی هدف از این مطالعه ارزیابی اثرات دوزهای بالا و/ یا طولانی مدت داروی سولفادیمتوکسین- تری‌متوپریم بر روی فاکتورهای بیوشیمیایی خون نظیر: AST، LDH، CK، آلبومین و پروتئین تام به عنوان شاخص‌هایی از عملکرد کبد و نیز اسیداوریک و اوره به عنوان شاخص‌های عملکرد کلیه می‌باشد.
روش کار: در این مطالعه تعداد ۷۵ قطعه جوجه گوشتی به صورت کاملاً تصادفی به ۷ گروه تقسیم شدند: گروه کنترل (C)،کنترل دارو (دریافت کننده دارو با دوز و زمان توصیه شده بر روی برچسب دارو; DC)،گروه‌های درمانی T1 و T2 دریافت کننده دوز توصیه شده دارو با ۲ و ۳ برابر مدت زمان توصیه شده، گروه‌های درمانی T3، T4 و T5 دریافت کننده ۲/۵، ۵ و ۱۰ برابر دوز و با مدت زمان توصیه شده. در پایان دوره درمان از جوجه‌های هرگروه خونگیری شده و نمونه‌های سرم جهت اندازه‌گیری فاکتورهای بیوشیمیایی سرم با استفاده از کیت مربوطه، جمع‌آوری گردید. در پایان نیز داده‌ها با نرم افزار آماری SPSS مورد تجزیه و تحلیل آماری قرار گرفت.
نتایج و نتیجه گیری : نتایج نشان می‌دهد که میزان فعالیت آنزیم AST در گروه‌های T3، T4 و T5 افزایش معنی داری را نسبت به گروه کنترل دارو نشان می‌دهد. در حالی که هیچ اختلاف معنی‌داری در میزان فعالیت CK سرمی در گروه‌های تیمار شده نسبت به گروه کنترل دارو دیده نشد. به علاوه میزان فعالیت LDH در گروه‌های T1، T2 و T5 کاهش معنی داری را نسبت به گروه کنترل دارو نشان داد. بنابراین به نظر می‌رسد که استفاده از داروی سولفادیمتوکسین – تری‌متوپریم چه در طول مدت زمان بیش از حد مجاز و چه در دوزهای بالاتر منجر به آسیب کبدی می‌گردد. از طرف دیگر میزان اسیداوریک سرمی گروه‌های T4 و T5 افزایش معنی داری را نسبت به گروه کنترل دارو نشان داد که می تواند بیانگر آسیب کلیوی ناشی از دوزهای بالاتر این دارو باشد. در کل به نظر می‌رسد که سولفادیمتوکسین- تری‌متوپریم در مقادیر بالا یا مدت زمان بیش از حد مجاز می‌تواند اثرات نامطلوبی روی کبد و کلیه داشته باشد.
واژگان کلیدی: سولفونامید تقویت شده، جوجه‌های گوشتی ، کبد، کلیه

تأثیر مکمل مانان‌الیگوساکارید بر عملکرد و پاسخ‌های ایمنی مرغان تخمگذار تحت تنش باکتری اشریشیا کلی

رحمان جهانیان

گروه علوم دامی، دانشکده کشاورزی، دانشگاه صنعتی اصفهان، اصفهان، ایران، کد پستی ۸۴۱۵۶-۸۳۱۱۱

نویسنده مسؤول: r.jahanian@gmail.com

اهداف: مطالعه حاضر به منظور بررسی تأثیر استفاده از مانان‌الیگوساکاریدها در جیره بر عملکرد و تیتر آنتی‌بادی در مرغان تخمگذار آلوده شده با باکتری اشریشیا کلی صورت گرفت.

مواد و روش‌ها: تعداد ۱۸۰ قطعه مرغ تخمگذار هایلاین W-36 با سن ۵۵ هفته، بطور تصادفی در بین ۵ تیمار آزمایشی با ۶ تکرار (قفس) و ۶ قطعه پرنده به ازاء هر تکرار توزیع گردیدند. تیمارهای آزمایشی شامل ۵ سطح (صفر، ۰/۰۵، ۰/۱، ۰/۱۵ و ۰/۲ درصد) مکمل مانان‌الیگوساکارید بود. آزمایش حاضر ۷۷ روز بطول انجامید که شامل ۷ روز بعنوان دوره عادت‌پذیری و ۷۰ روز بعنوان دوره اصلی آزمایش بود. کلیه جیره‌های آزمایشی از لحاظ انرژی و پروتئین همسان بوده و غلظت دیگر مواد مغذی نیز در آنها مشابه بود. در تمام طول دوره آزمایش، آب و غذا بصورت آزادانه در اختیار پرندگان قرار گرفت. مؤلفه‌های عملکردی در طی ۲ دوره ۳۵ روزه اندازه‌گیری شدند. همچنین، تیتر آنتی‌بادی در برابر نیوکاسل و گلبول قرمز گوسفندی متعاقب تجویزهای مربوطه ارزیابی گردید.

نتایج و استنتاج نهایی: نتایج نشان داد که در هر ۲ دوره ۳۵ روزه آزمایش، خوراک مصرفی و وزن تخم‌مرغ تحت تأثیر تیمارهای غذایی قرار نگرفتند. از سوی دیگر، درصد تخمگذاری و بازده تولید تخم‌مرغ در نتیجه افزودن ۰/۱ و ۰/۱۵ درصد مانان‌الیگوساکارید به جیره مرغ‌های تحت چالش باکتری اشریشیا کلی، بطور معنی‌داری افزایش یافت. همچنین افزودن ۰/۱ و ۰/۱۵ درصد مانان‌الیگوساکارید به جیره باعث بهبود ضریب تبدیل غذا در طی ۳۵ روز اول آزمایش شد. مقایسات مستقل نشان داد که در قیاس با گروه شاهد، استفاده از مکمل مانان‌الیگوساکارید در جیره باعث افزایش ۹/۸ درصدی میزان تخمگذاری و بهبود ۸/۱ درصدی بازده تولید تخم‌مرغ در کل دوره آزمایش شد. تیمارهای غذایی تأثیر مشهودی بر تیتر تولید آنتی‌بادی در برابر ویروس نیوکاسل در روزهای ۶ و ۱۲ بعد از واکسیناسیون نداشتند. البته مقایسات مستقل نشان داد که استفاده از مانان‌الیگوساکارید تمایل داشت ($P<0/0637$) که تیتر نیوکاسل را در روز ۱۲ بعد از واکسیناسیون افزایش دهد. در مقایسه با تیتر نیوکاسل، پاسخ اولیه تولید آنتی‌بادی در برابر گلبول قرمز گوسفندی در نتیجه مکمل نمودن جیره با ۰/۰۵ درصد مانان‌الیگوساکارید افزایش یافت. نتایج حاضر حاکی از آن است که استفاده از سطوح ۰/۱ و ۰/۱۵ درصد مانان‌الیگوساکارید در جیره غذایی می‌تواند عملکرد تولیدمثلی و راندمان تبدیل غذا را در مرغان تخمگذار تحت تنش با اشریشیا کلی بهبود بخشد. همچنین مکمل مانان‌الیگوساکارید تأثیر بالقوه‌ای را از لحاظ پاسخ تولید آنتی‌بادی نشان داد.

واژگان کلیدی: مرغان تخمگذار، مانان‌الیگوساکارید، پری‌بیوتیک، اشریشیا کلی، ایمنی هومورال، عملکرد

تأثیر کنجاله سویای اکسترود شده بر عملکرد و بازده لاشه در جوجه‌های گوشتی

رحمان جهانیان[1] و پژمان آجیل‌چی[2]*

[1] گروه علوم دامی، دانشکده کشاورزی، دانشگاه صنعتی اصفهان، اصفهان، ایران، کد پستی ۸۴۱۵۶-۸۳۱۱۱

[2] شرکت یسنا مهر، تهران، ایران، کد پستی ۱۹۱۱۶-۱۸۳۵۶

*** نویسنده مسؤول: r.jahanian@gmail.com**

اهداف: مطالعه حاضر با هدف بررسی تأثیر فرآیند اکسترود کردن کنجاله سویا بر عملکرد و خصوصیات لاشه جوجه‌های گوشتی انجام گردید.

مواد و روش‌ها: تعداد ۱۸۰ قطعه جوجه گوشتی یک روزه سویه راس ۳۰۸ در قالب یک طرح کاملاً تصادفی با ۶ تکرار و ۱۵ قطعه جوجه به ازاء هر تکرار استفاده شدند. تیمارهای آزمایشی مورد مطالعه شامل ۲ جیره برپایه ذرت- کنجاله سویا و ذرت- کنجاله سویای اکسترود شده بودند که طی یک دوره آزمایشی ۴۲ روزه به پرندگان تغذیه شدند. جیره‌های آزمایشی از لحاظ انرژی و پروتئین همسان بودند. پرندگان در تمام مدت آزمایش بصورت آزادانه به غذا و آب دسترسی داشتند. در روز پایانی آزمایش (۴۲ روزگی)، تعداد ۵ قطعه پرنده از هر تکرار بطور تصادفی کشتار شده تا وزن اندام‌های داخلی و خصوصیات لاشه آنها مورد بررسی قرار گیرد.

نتایج و استنتاج نهایی: نتایج نشان داد که جایگزینی کنجاله سویای اکسترود شده باعث افزایش معنی‌دار ($P<0/01$) میزان اضافه وزن روزانه در کل دوره آزمایش شد. بجز دوره آغازین، میانگین خوراک مصرفی پرندگان تغذیه شده با جیره حاوی کنجاله سویای اکسترود شده، بالاتر ($P<0/05$) بود. علاوه بر این، جایگزینی کنجاله سویای اکسترود شده در جیره باعث بهبود ضریب تبدیل غذا در مراحل آغازین، پایانی ($P<0/01$) و کل دوره آزمایش ($P<0/05$) شد. وزن نهایی جوجه‌های گوشتی تغذیه شده با جیره‌های حاوی کنجاله سویای اکسترود شده، ۹ درصد بالاتر از پرندگانی بود که با جیره برپایه ذرت- کنجاله سویا تغذیه شده بودند. اگرچه وزن نسبی کبد و قلب تحت تأثیر تیمارهای غذایی قرار نگرفت، استفاده از کنجاله سویای اکسترود شده باعث کاهش معنی‌دار ($P<0/05$) وزن نسبی پانکراس شد. نکته قابل توجه اینکه، پرندگان تغذیه شده با جیره‌های حاوی کنجاله سویای اکسترود شده، چربی کمتری ($P<0/01$) در محوطه بطنی خود داشتند. علاوه بر این، مصرف کنجاله سویای اکسترود شده، راندمان سینه و لاشه را افزایش داد. نتایج حاضر حاکی از آن است که اکسترود کردن کنجاله سویا می‌تواند ارزش غذایی آن را برای جوجه‌های گوشتی بهبود بخشد. استفاده از کنجاله سویای اکسترود شده در جیره می‌تواند میزان اضافه وزن و راندمان تبدیل غذا را در جوجه‌های گوشتی افزایش داده و چربی محوطه بطنی را کاهش دهد.

واژگان کلیدی: جوجه‌های گوشتی، کنجاله سویا، فرآیند اکسترود کردن، عملکرد رشد، چربی محوطه بطنی، خصوصیات لاشه

کاربرد مفهوم الگوی ایده‌آل پروتئین و اسیدهای آمینه در جیره‌نویسی برای جوجه‌های گوشتی و تأثیر آن بر مؤلفه‌های عملکردی

رحمان جهانیان[1]* و غلامرضا زارع[2]
[1] گروه علوم دامی، دانشکده کشاورزی، دانشگاه صنعتی اصفهان، اصفهان، ایران، کد پستی ۸۴۱۵۶-۸۳۱۱۱
[2] شرکت تولیدی خوراک مزرعه، اصفهان، ایران
* نویسنده مسؤول: r.jahanian@gmail.com

اهداف: مطالعه حاضر به منظور بررسی تأثیر جیره‌نویسی برپایه الگوی ایده‌آل پروتئین و اسیدهای آمینه بر عملکرد و برخی از مؤلفه‌های بیوشیمیایی خون در جوجه‌های گوشتی انجام گردید.

مواد و روش‌ها: تعداد ۲۲۵ قطعه جوجه گوشتی یک روزه سویه راس ۳۰۸ بطور تصادفی در بین ۵ تکرار (۱۵ قطعه جوجه به ازاء هر تکرار) هر یک از ۳ تیمار آزمایشی توزیع گردیدند. تیمارهای غذایی مورد مطالعه شامل یک جیره شاهد و ۲ جیره غذایی بود که سطح پروتئین آنها نسبت به گروه شاهد، به میزان ۵ یا ۱۰ درصد کاهش داده شده بود. سطح پروتئین جیره‌های آزمایشی در مرحله آغازین (۲۱-۱ روزگی)، ۲۲/۵، ۲۱/۳۷۵ و ۲۰/۲۵ درصد بود. این سطوح در مرحله رشد (۴۲-۲۲ روزگی) به ترتیب به ۲۰، ۱۹ و ۱۸ درصد کاهش داده شدند. جیره‌های آزمایشی از لحاظ انرژی همسان بوده و ترکیب مشابهی از نظر اکثر اسیدهای آمینه محدود کننده داشتند. پرندگان در تمام مدت آزمایش بصورت آزادانه به غذا و آب دسترسی داشتند. در روز پایانی آزمایش (۴۲ روزگی)، تعداد ۳ قطعه پرنده از هر تکرار بطور تصادفی انتخاب شده و نمونه‌های خون پرندگان برای بررسی برخی از مؤلفه‌های بیوشیمیایی جمع‌آوری گردید.

نتایج و استنتاج نهایی: نتایج نشان داد که کاهش سطح پروتئین جیره باعث افزایش عددی ($P =$ ۰/۰۸) میزان خوراک مصرفی در طی مرحله رشد گردید، اما میزان اضافه وزن روزانه پرندگان تغذیه شده با سطوح مختلف پروتئین در هیچیک از مراحل آزمایش تفاوت معنی‌داری نداشت. کاهش سطح پروتئین جیره به میزان ۱۰ درصد موجب افزایش ($P <$ ۰/۰۵) ضریب تبدیل غذا در مرحله رشد شد. اگرچه کاهش سطح پروتئین جیره تأثیری بر غلظت کلسترول سرم خون نداشت، اما کاهش ۱۰ درصدی سطح پروتئین جیره باعث افزایش معنی‌دار ($P <$ ۰/۰۵) میزان تری‌گلیسریدهای سرم شد. تغییر سطح پروتئین جیره تأثیری بر غلظت لیپوپروتئین‌های با چگالی کم و زیاد نداشت. کاهش سطح پروتئین خام جیره (با ثابت نگه داشتن نسبت اکثر اسیدهای آمینه محدود کننده در جیره) باعث کاهش خطی غلظت اسید اوریک خون شد. یافته‌های حاضر حاکی از آن است که سطح پروتئین خام جیره جوجه‌های گوشتی را می‌توان در حدود ۱۰ درصد کاهش داد، درصورتیکه اسیدهای آمینه محدود کننده، در غلظت‌های مناسبی در جیره تأمین شده باشند. علاوه بر این، غلظت اسید اوریک خون را می‌توان با کاهش سطح پروتئین جیره تقلیل داد.

واژگان کلیدی: جوجه‌های گوشتی، الگوی ایده‌آل اسیدهای آمینه، سطح پروتئین جیره، عملکرد، اسید اوریک

تأثیر مکمل نمودن جیره با آنتی‌بادی‌های زرده تخم‌مرغ بر عملکرد و پاسخ‌های ایمنی جوجه‌های گوشتی

رحمان جهانیان[1]* و غلامرضا زارع[2]
[1] گروه علوم دامی، دانشکده کشاورزی، دانشگاه صنعتی اصفهان، اصفهان، ایران، کد پستی ۸۴۱۵۶-۸۳۱۱۱
[2] شرکت تولیدی خوراک مزرعه، اصفهان، ایران
* نویسنده مسؤول: r.jahanian@gmail.com

اهداف: مطالعه حاضر با هدف بررسی تأثیر مکمل نمودن آنتی‌بادی‌های زرده تخم‌مرغ به جیره، بر عملکرد و پاسخ‌های تولید آنتی‌بادی در جوجه‌های گوشتی سویه راس طراحی گردید.

مواد و روش‌ها: تعداد ۲۲۵ قطعه جوجه گوشتی یک روزه سویه راس ۳۰۸ از یک مؤسسه جوجه‌کشی خریداری شده و بطور تصادفی در بین ۳ تیمار آزمایشی توزیع گردیدند. تیمارهای آزمایشی شامل سطوح مختلف (صفر، ۰/۲۵ و ۰/۵ درصد) آنتی‌بادی‌های زرده تخم‌مرغ بود که در طی هفته اول آزمایش (۷-۱ روزگی) به جیره جوجه‌ها اضافه شدند. در بقیه دوره آزمایش، کلیه پرندگان با یک جیره مشابه تغذیه گردیدند. آنتی‌بادی‌های زرده از طریق تخم‌مرغ‌های یک گله مرغ تخمگذار ۵۲ هفته‌ای تهیه شدند. جیره‌های آزمایشی از لحاظ انرژی و پروتئین همسان بودند. پرندگان در تمام طول دوره آزمایش، بصورت آزادانه به غذا و آب دسترسی داشتند. نمونه‌های خون ۳ قطعه پرنده از هر تکرار در روزهای ۲۱ و ۴۲ آزمایش جمع‌آوری گردید تا تیتر تولید آنتی‌بادی در برابر آنفولانزا، نیوکاسل، برونشیت و گامبرو ارزیابی شود.

نتایج و استنتاج نهایی: نتایج نشان داد که مکمل نمودن جیره با آنتی‌بادی‌های زرده تخم‌مرغ تأثیر محسوسی بر میزان خوراک مصرفی پرندگان نداشت. از سوی دیگر، استفاده از آنتی‌بادی‌های زرده باعث افزایش ($P =$ ۰/۰۷) میزان اضافه وزن روزانه در طی مرحله آغازین شد، درحالیکه بر میزان اضافه وزن در مرحله رشد تأثیری نداشت. راندمان تبدیل غذا تحت تأثیر مکمل نمودن آنتی‌بادی‌های زرده قرار نگرفت. نکته جالب توجه این بود که استفاده از آنتی‌بادی‌های زرده، تیتر تولید آنتی‌بادی در برابر ویروس‌های آنفولانزا و گامبرو را در روز ۲۱ آزمایش افزایش داد. علاوه بر این، تیتر آنتی‌بادی علیه ویروس نیوکاسل نیز در روز ۴۲ آزمایش در نتیجه افزودن آنتی‌بادی‌های زرده به جیره بهبود یافت. در مقابل، تیتر آنتی‌بادی در برابر ویروس بیماری برونشیت تحت تأثیر تیمارهای آزمایشی قرار نگرفت. یافته‌های حاضر نشان می‌دهند که مکمل نمودن جیره با آنتی‌بادی‌های زرده تخم‌مرغ در طی روزهای اول زندگی، می‌تواند عملکرد سیستم ایمنی را افزایش داده و جوجه را در برابر بیماری‌های عفونی محافظت نماید.

واژگان کلیدی: جوجه‌های گوشتی، آنتی‌بادی‌های زرده تخم‌مرغ، عملکرد، پاسخ‌های ایمونولوژیک، ایمنی همورال

تأثیر سطح پروتئین و اسیدهای آمینه جیره بر عملکرد، وزن اندام‌های لنفاوی و پاسخ‌های ایمونولوژیک در جوجه‌های گوشتی

پروین صفدری و رحمان جهانیان*

گروه علوم دامی، دانشکده کشاورزی، دانشگاه صنعتی اصفهان، اصفهان، ایران، کد پستی ۸۴۱۵۶-۸۳۱۱۱

* نویسنده مسؤول: r.jahanian@gmail.com

اهداف: مطالعه حاضر با هدف بررسی تأثیر سطوح مختلف پروتئین و اسیدهای آمینه بر عملکرد، تکامل اندام‌های لنفاوی و تیتر آنتی‌بادی در جوجه‌های گوشتی انجام گردید.

مواد و روش‌ها: تعداد ۱۴۴ قطعه جوجه گوشتی یک روزه سویه راس ۳۰۸ بطور تصادفی در بین ۳ تیمار آزمایشی با ۴ تکرار و ۱۲ قطعه جوجه به ازاء هر تکرار توزیع گردیدند. تیمارهای غذایی شامل ۳ سطح (شاهد، ۱ و۲ درصد پایین‌تر) پروتئین بود که طی یک دوره آزمایشی ۴۲ روزه به پرندگان تغذیه شدند. سطح پروتئین جیره‌های آزمایشی در مرحله آغازین، ۲۳، ۲۲ و ۲۱ درصد بود. این سطوح در مرحله رشد به ترتیب به ۲۱، ۲۰ و ۱۹ درصد و در مرحله پایانی به ۱۹، ۱۸ و ۱۷ درصد کاهش داده شدند. نسبت اکثر اسیدهای آمینه محدود کننده به پروتئین در بین گروه‌های مختلف پروتئینی ثابت بود. مؤلفه‌های عملکردی در فواصل دو هفته یکبار اندازه‌گیری شدند. علاوه بر این، تیتر آنتی‌بادی در برابر آنتی‌ژن‌های مختلف، متعاقب تجویزهای مربوطه مورد ارزیابی قرار گرفت. همچنین، ۲ پرنده از هر تکرار در سن ۴۲ روزگی کشتار شده تا وزن اندام‌های لنفاوی اندازه‌گیری شود.

نتایج و استنتاج نهایی: نتایج نشان داد که کاهش حداقل ۱ درصد سطح پروتئین جیره باعث کاهش معنی‌دار میزان اضافه وزن روزانه شد، اما در مرحله رشد، میزان اضافه وزن تنها با کاهش ۲ درصدی سطح پروتئین جیره کاهش یافت. پرندگان تغذیه شده با جیره‌های حاوی کمترین سطح پروتئین، وزن عقب افتاده خود را در مرحله پایانی جبران نمودند بطوریکه میزان اضافه وزن روزانه این گروه در کل دوره آزمایش (۴۲-۱ روزگی)، مشابه گروه شاهد بود. اگرچه خوراک مصرفی پرندگان تحت تأثیر تیمارهای غذایی قرار نگرفت، کاهش ۱ درصدی سطح پروتئین جیره باعث افت راندمان تبدیل غذا در مرحله پایانی شد. بالاترین ($P <$ ۰/۰۵) اوزان اندام‌های لنفاوی (یعنی تیموس، بورس فابریسیوس و طحال) به پرندگانی اختصاص داشت که با سطوح پایین‌تر پروتئین تغذیه شده بودند. اگرچه کاهش سطح پروتئین و اسیدهای آمینه جیره تأثیر مشهودی بر تیتر آنتی‌بادی در برابر گلبول قرمز گوسفندی و ویروس برونشیت نداشت، اما باعث کاهش معنی‌دار ($P <$ ۰/۰۵) تیتر آنتی‌بادی در برابر آنفولانزا شد. در مقابل، پاسخ تولید آنتی‌بادی در برابر نیوکاسل در نتیجه کاهش ۲ درصدی سطح پروتئین جیره، افزایش یافت. یافته‌های حاضر حاکی از آن است که کاهش سطح پروتئین جیره می‌تواند پاسخ‌های ایمونولوژیک را در طی مراحل آغازین دوره پرورش کاهش دهد، درحالیکه در دوره‌های بعدی، تأثیری معکوس داشت.

واژگان کلیدی: جوجه‌های گوشتی، پروتئین جیره، تراکم اسیدهای آمینه، پاسخ‌های ایمنی، ایمنی همورال، عملکرد

تأثیر مکمل نمودن جیره با جنیستئین بر عملکرد سیستم ایمنی و شاخص‌های سرولوژیک در جوجه‌های گوشتی

پروین صفدری و رحمان جهانیان*

گروه علوم دامی، دانشکده کشاورزی، دانشگاه صنعتی اصفهان، اصفهان، ایران، کد پستی ۸۴۱۵۶-۸۳۱۱۱

*** نویسنده مسؤول: r.jahanian@gmail.com**

اهداف: مطالعه حاضر به منظور بررسی تأثیر مکمل جنیستئین بر پاسخ‌های ایمونولوژیک و برخی از مؤلفه‌های بیوشیمیایی سرم خون در جوجه‌های گوشتی به انجام رسید.

مواد و روش‌ها: تعداد ۱۹۲ قطعه جوجه گوشتی یک روزه سویه راس ۳۰۸ بطور تصادفی در بین تیمارهای آزمایشی مختلف توزیع گردیدند، بطوریکه هر تیمار شامل ۴ تکرار و ۱۲ قطعه جوجه به ازاء هر تکرار بود. تیمارهای غذایی شامل سطوح مختلف (صفر، ۲۰، ۸۰ و ۳۲۰ میلی‌گرم بر کیلوگرم) جنیستئین بود. آزمایش حاضر ۴۲ روز بطول انجامید و پرندگان در تمام مدت آزمایش بصورت آزادانه به آب و غذا دسترسی داشتند. تیتر آنتی‌بادی در برابر آنتی‌ژن‌های مختلف ویروسی و غیر ویروسی، متعاقب تجویزهای مربوطه اندازه‌گیری شد. علاوه بر این، ۲ قطعه پرنده از هر تکرار بطور تصادفی انتخاب شده و نمونه‌های خون پرندگان برای بررسی متابولیت‌های لیپیدی سرم جمع‌آوری گردید.

نتایج و استنتاج نهایی: نتایج نشان داد که مکمل نمودن جیره با سطوح ۸۰ و ۳۲۰ میلی‌گرم بر کیلوگرم جنیستئین، تیتر آنتی‌بادی در برابر گلبول قرمز گوسفندی را در طی پاسخ اولیه نسبت به گروه شاهد افزایش ($P <$ ۰/۰۱) داد. اما در طی پاسخ ثانویه، بالاترین ($P <$ ۰/۰۵) تیتر تولید آنتی‌بادی علیه گلبول قرمز گوسفندی به پرندگانی اختصاص داشت که با سطح ۳۲۰ میلی‌گرم بر کیلوگرم جنیستئین تغذیه شدند. کلیه سطوح جنیستئین، تیتر تولید آنتی‌بادی در برابر ویروس برونشیت را افزایش ($P <$ ۰/۰۰۱) دادند. اگرچه تیتر آنتی‌بادی در برابر نیوکاسل تحت تأثیر تیمارهای آزمایشی قرار نگرفت، مکمل نمودن جیره با جنیستئین در سطوح ۲۰ و ۸۰ میلی‌گرم بر کیلوگرم، تیتر آنتی‌بادی علیه ویروس بیماری‌های آنفولانزا و گامبرو را افزایش ($P <$ ۰/۰۵) داد. استفاده از جنیستئین در جیره، غلظت تری‌گلیسریدها ($P <$ ۰/۰۵)، کلسترول و لیپوپروتئین‌های با چگالی کم ($P <$ ۰/۰۱) را در سرم خون کاهش داد، درحالیکه باعث افزایش ($P <$ ۰/۰۱) سطح لیپوپروتئین‌های با چگالی زیاد گردید. یافته‌های حاضر نشان می‌دهند که مکمل نمودن جیره با جنیستئین، نه تنها پاسخ‌های تولید آنتی‌بادی را تقویت می‌کند، بلکه تأثیر سودمندی بر الگوی لیپیدی خون در جوجه‌های گوشتی دارد.

واژگان کلیدی: جوجه‌های گوشتی، ایزوفلاونوئیدها، جنیستئین، پاسخ‌های ایمونولوژیک، کلسترول، لیپوپروتئین‌ها

بررس تغییرات مقادیر سایتوکاین ها طی عفونت با ویروس برونشیت عفونی طیور

حمیده نجفی[۱]، آرش قلیانچی لنگرودی[۱]، مسعود هاشم زاده[۲]، وحید کریمی[۳]، امید مددگار[۱]، سید علی غفوری[۴]، رضا خلط آبادی فراهانی[۴]، حسین مقصودلو[۴] ، طه ذبیحی[۱]،حامد عبدالهی[۴] ، حسین حسینی[۵]

۱- دانشکده دامپزشکی دانشگاه تهران، بخش میکروبیولوژی و ایمنولوژی، ۲موسسه تحقیقات واکسن و سرم سازی رازی، بخش تولید واکسن های طیور، ۳دانشکده دامپزشکی دانشگاه تهران، بخش بیماری های طیور، ۴سازمان دامپزشکی کشور، ۵ دانشگاه آزاد اسلامی واحد کرج

مقدمه و هدف:سلول های ایمنی میزبان در پاسخ به عوامل بیماریزا،بسته به نوع جرم عفونتزاواکنش های متفاوتی نشان می دهند. فعال سازی پاسخ های ایمنی و التهابی همراه با آزادسازی سایتوکاین ها می باشد. بنابراین آنالیز مقادیر سرمی سایتوکاین ها ممکن است در درک تغییرات عملکردی دستگاه ایمنی میزبان مفید باشد. اینترفرونهای آلفا و بتا که جزء اینترفرون های نوع یک می باشند از اجزای مهم ایمنی ذاتی در مقابله با عفونت های ویروسی بوده و بعد از عفونت با ویروس به سرعت بیان آنها افزایش می یابد. اینترفرون گاما، نوع دواینترفرون، همراه با پاسخ ایمنی اختصاصی بوده و افزایش بیان آن با تاخیر همراه است. اینترفرون گاما یک پروتئین اصلی تنظیم کننده ایمنی است که بر سلولها و عملکرد آنها تاثیر میگذارد. نشان داده شده است در عفونت کروناویروسی، این سیتوکاین Th1 قادر به کنترل تکثیر ویروس است.اینترلوکین های یک آلفا و یک بتا سایتوکاین های پیش التهابی بالقوه ای هستند که توسط طیف وسیعی از سلولها تولید شده و فعالیت بیولوژیک آنها پس از اتصال به گیرنده تیچ یک اینترلوکین یک آغاز می گردد. با توجه به مطالعات محدود در مورد نقش سایتوکاین ها در مهار عفونت ویروس برونشیت عفونی، این تحقیق انجام گرفت.

مواد و روش کار:۸۴ جوجه یک روزه عاری از پاتوژن به طور تصادفی به سه گروه(دو گروه چالش هر یک شامل ۳۵ جوجه و یک گروه کنترل به تعداد ۱۴ جوجه) تقسیم شدند. در سن ۱۴ روزگی جوجه های گروه چالش اول توسط ویروس واریانت دو و گروه دوم توسط سویه IR-1 تلقیح شدند. در روزهای ۰،۱،۳،۵،۷،۱۴،۲۱و۲۸ بعد از تلقیح نمونه‌های خون جمع آوری و سرم جدا شد.مقادیر اینترلوکینیک بتا و اینترفرون گاما توسط کیت‌های الایزا سنجیده شد.

نتایج:میزان اینترفرون گاما در روز ۵ بعد از عفونت در گروه آلوده به IR-1 و میران اینترلوکین یک بتا در روز اول بعد از عفونت در گروه آلوده به واریانت دو افزایش معنی داری نسبت به گروه کنترل داشت.

بحث:عدم القای پاسخ اینترقرون در گروه آلوده به واریانت دو ممکن است بیانگر این باشد که این سویه قادر به مهار پاسخ های ایمنی میزبان است. همچنین پاسخ اینترلوکین در جوجه های آلوده به IR-1 مشاهده نشد. از آنجا که تولید اینترلوکین یک توسط اغلب ویروسها از طریق انباشته شدن RNA دو رشته ای طی همانند سازی ویروس تحریک می شود، شاید استفاده از تکنیک های دقیقتر مانند آزمون ریل تایم، در فواصل کوتاهتر بعد از عفونت، قادر به ردیابی این سایتوکاین باشد.

بررسی سرولوژیک عفونت رئوویروسی در گله‌های مرغ گوشتیشمال غرب ایراندر سال ۱۳۹۴

جعفر طایفه باقرلو[۱*]، علیرضا طالبی[۱]، سعید دهقانی اصل[۲]

۱-بخش بیماری های طیور، گروه علوم درمانگاهی، *دانشکده دامپزشکی، دانشگاه ارومیه*، ارومیه، ایران

۲-دانش آموخته‌دکترای حرفه ای دامپزشکی، *دانشگاه* آزاد اسلامی واحد ارومیه، ارومیه، ایران

ایمیل نویسنده مسؤول: J.tayefeh@urmia.ac.ir

مقدمه: هدف از این مطالعه بررسی میزان عفونت رئوویروس پرندگان در واحدهای مرغداری گوشتی شمال غرب ایران بود. عفونت رئوویروسی خسارات فراوانی را به صنعت طیور وارد می‌کند. رئوویروس‌ها موجب ایجاد بیماری و عوارض زیادی در طیور مانند آرتریت و تنوسینوویت، سندرم عقب‌ماندگی رشد، بیماریهای تنفسی، تضعیف سیستم ایمنی و سندرم عدم جذب می‌شود. مهمترین بیماری ناشی از رئوویروس‌ها در مرغ و بوقلمون آرتریت و التهاب مفاصل و تاندون می‌باشد، که توسط سروتیپهای مختلف رئوویروس ایجاد می‌شود. تورم و التهاب مفصل تارسومتاتارسال و غلاف تاندون‌های اطراف آن موجب لنگش و فلجی حاد در طیور می‌شود. عفونت رئوویروسی هم به صورت انتقال عمودی و هم افقی منتقل می‌شود.

مواد و روش کار: تعداد ۳۰۰ نمونه خون از ۲۰ واحد مرغداری گوشتی اخذ و به آزمایشگاه منتقل ، و سرم با سانتریفیوژ g۱۷۰۰ به مدت ۱۰ دقیقه سرم تهیه شد. تست الایزا با کیت تجاری رئوویروس پرندگان IDEXX REO Ab Test ELISA Kit)) انجام شد.

نتایج:براساس نتایج این مطالعه میزان شیوع عفونت رئوویروس در مرغ‌های گوشتی شمال غرب ایران ۹۷.۳ درصد می‌باشد. تیتر آنتی‌بادی در نمونه‌های مثبت رئوویروس از ۸۵۰ تا ۱۶۵۸۸ و با میانگین ۴۸۸۲ می باشد احتمالا مقاومت بالای ویروس یکی از عوامل بالا بودن میزان آلودگی می‌باشد. نتایج این مطالعه نشان می‌دهد میزان عفونت رئوویروس در گله‌های گوشتی بالاست و اهمیت اجرای برنامه ی واکسیناسیون رئوویروس را در گله‌های مادر گوشتی نشان می‌دهد

کلمات کلیدی: رئوویروس، الایزا، طیور گوشتی، ایران

اثر دانه خردل سیاه بر روی هورمون تیروئید و آنزیم های کبدی بلدرچین ژاپنی

ندا اسکندرزاده، سجاد محبی، محمد سالار معینی، زینب فرقانی فرد

علیرغم ارزش های غذایی دانه خردل، حضور آن در جیره غذایی طیور باعث اختلال در عملکرد غده تیروئید می شود. سم زدایی خردل با سولفات آهن ۱ درصد امکان استفاده این غذا را به عنوان منبع پروتئینی ارزان در جیره غذایی این پرنده فراهم می سازد. این پژوهش برای بررسی اثر دانه خردل سیاه بر روی هورمون های تیروئیدی در بلدرچین ژاپنی انجام شد. آزمایش بر روی ۲۸ بلدرچین انجام شد که به صورت کاملا تصادفی به یک گروه کنترل (گروه شماره ۱) و ۶ گروه آزمایش (گروه ۲-۷) تقسیم شدند. در هر گروه ۴ بلدرچین قرار گرفت. گروه کنترل در طول مدت آزمایش جیره غذایی بدون خردل استفاده می کرد در حالی که گروه آزمایش (گروه های ۲، ۳ و ۴) به ترتیب با ۵، ۱۰ و ۱۵ درصد خردل و گروه آزمایش (گروه های ۵، ۶ و ۷) به ترتیب با ۵، ۱۰ و ۱۵ درصد خردل سم زدایی شده با سولفات آهن تغذیه شدند. گروهی که با ۱۵ درصد دانه خردل تغذیه شده بود (گروه شماره ۴) کمترین میزان تیروکسین را نشان داد در حالی که میزان تیروکسین در گروه شماره ۷ (۱۵درصد دانه خردل فرآوری شده با سولفات آهن) به میزان اولیه برگشته بود. این در حالی است که میزان آنزیم های کبدی AST و ALT در این گروه بالاترین میزان را در بین بقیه گروه ها داشت. ما نتیجه گیری کردیم که تا ۱۰ درصد دانه خردل فرآوری شده با سولفات آهن می تواند در جیره غذایی بلدرچین بدون آسیب جدی به غده تیروئید و کبد مورد استفاده قرار گیرد البته تحقیقات بیشتری برای اثبات این فرضیه لازم است.

کلمات کلیدی: آنزیم های کبدی، خردل، بلدرچین، تیروکسین

ارزیابی اثرات ضد ویروسی عصاره های آبی دو نوع پیاز (قرمز و زرد) بر علیه تحت تیپ H9N2 ویروس آنفلوانزای پرندگان

صبا احمدی[۱]، ذوالفقار رجبی[۱]، مهدی وصفی مرندی[۲]*

[۱] دانشگاه تبریز، دانشکده دامپزشکی، گروه آموزشی علوم درمانگاهی، بخش بیماریهای طیور

[۲] دانشگاه تهران، دانشکده دامپزشکی، گروه آموزشی بیماریهای طیور

آنفلوانزای پرندگان (ناشی از H9N2) بعنوان یک بیماری ویروسی واگیردار در طول سالهای ۱۹۹۹-۱۹۹۴ در بسیاری از کشورها از جمله ایران به وقوع پیوست. تغییرات آنتی ژنیک شیفت و دریفت عامل بیماری موجب عدم موفقیت در پیشگیری و تولید و اکسن و داروهای موثر در پیشگیری و درمان شده است؛ بنابراین دانشمندان علاقمند هستند تا داروهای موثر بر پایه داروهای گیاهی تهیه کنند. پیاز از زمانهای قدیم بعنوان غذا و دارو استفاده شده است. هدف از این مطالعه ارزیابی اثرات ضد ویروسی عصاره آبی دو نوع پیاز قرمز و زرد بر علیه تحت تیپ H9N2 ویروس آنفلوانزا در آزمایشگاه و در بدن جنین جوجه است. برای مطالعه در آزمایشگاه، ۰/۱ میلی لیتر از مخلوط ویروس و عصاره های آبی پیاز زرد و قرمز (بصورت جداگانه) به فاصله ۲، ۴ و ۲۴ ساعت استراحت در آزمایشگاه به داخل تخم مرغ جنین دار تلقیح شد. برای مطالعه در بدن جنین، ۰/۱ میلی لیتر از عصاره های آبی پیاز قرمز و زرد به داخل تخم مرغ جنین دار آلوده شده با ویروس که از مدت آلودگی آنها ۱، ۶ و ۲۴ ساعت می گذشت، تزریق شد. هماگلوتیناسیون و میزان تلفات جنینی بعنوان معیاری برای ارزیابی در نظر گرفته شد. نتایج بدون در نظر گرفتن مکانیسم دقیق اثر، نشان داد هم عصاره آبی پیاز قرمز و هم پیاز زرد دارای اثر ضد ویروسی قابل توجهی روی تحت تیپ H9N2 ویروس آنفلوانزا هستند، اما اثر ضد ویروسی عصاره پیاز قرمز بیشتر از پیاز زرد می باشد.

کلمات کلیدی: آنفلوانزای پرندگان، H9N2، پیاز،عصاره آبی، ضد ویروس

اسپاندیلیت در گله ی مرغ مادر گوشتی در استان آذربایجان‌غربی؛ کیس ریپورت

جعفر طایفه باقرلو[۱]، علیرضا طالبی[۱]، آرین شریفی[۱] ، فاطمه دلخوش‌کسمایی[۲]، اصغر مرواریدی[۱]
۱. *گروه علوم درمانگاهی* دانشکده دامپزشکی، دانشگاه ارومیه، *ارومیه، ایران*
۲. گروه پاتولوژی، *دانشکده دامپزشکی، دانشگاه ارومیه*، ارومیه، ایران
ایمیل نویسنده مسؤول: J.tayefeh@urmia.ac.ir

تاریخچه و علایم بالینی: یک فارم مرغ مادر گوشتی در استان آذربایجان‌غربی با علایم لنگش و فلجی بود. علایم فلجی تنها در سالن خروس‌ها مشاهده شده و میزن درگیری حدود ۴ درصد گله بود و سن گله ۱۰ هفته بود و با علایم فلجی و عدم توانایی در راه رفتن و نشستن بر روی زمین و فلج شدن پاها بود.
علایم کالبدگشایی: توده‌ی نودولار در مهره‌های سینه‌ای (T5 تا T7) در تمام پرندگان درگیر مشاهده شد. جراحات استئومیلیت در مهره‌ها با علایم فلجی و نشستن روی مفصل خرگوشی هماهنگی داشت. برش عرضی ستون مهره‌ها، استئومیلیت به همراه نکروز و آبسه را مشخص‌تر کرد، که احتمالا با فشار وارده به نخاع و اعصاب موجب آسیب آن شده بود.
آزمایشات هیستوپاتولوژیک: بخشی از اعصاب نخاعی درگیر برای تهیه لام بافت‌شناسی به آزمایشگاه هیستوپاتولوژی ارسال شد. در مطالعات هیستوپاتولوژیک استئومیلیت شدید نخاع مشاهده شد. همچنین ارتشاح سلولهای التهابی تک هسته ای مانند لنفوسیت‌ها در بخش خاکستری و پیامتر و ادم در بخش سفید نخاع مشاهده شد. جراحات پاتولوژیک به دلیل حاد بودن اسپاندیلیت محدود بود.
کلمات کلیدی: اسپاندیلیت، فلجی، مرغ مادر گوشتی، آذربایجان‌غربی،

اثر مهار گیرنده های محیطی نوسی سپتین بر رفتار تغیه ای ناشی از گلوتامات در بلدرچین نرا

شقایق حاجیان شهری[۱] محمد رضا حاجی نژاد[۲]
۱-گروه علوم پایه دانشکده دامپزشکی، دانشگاه زابل، زابل، ایران؛۲گروه علوم پایه دانشکده دامپزشکی، دانشگاه زابل، زابل، ایران

اهداف:[Nphe[1]]NC (1–13) NH2 آنتاگویست قوی گیرنده های محیطی نوسی سپتین است که در شرایط عادی اخذ غذا را در پرندگان کاهش می دهد در بررسی حاضر اثر مهار گیرنده های محیطی نوسی سپتین بر رفتار تغیه ای ناشی از گلوتامات در بلدرچین نر دچار محدودیت غذایی(۱۵ گرم در روز به ازاء هر بلدرچین) بررسی شد.
روش تحقیق:در این بررسی از ۴۰ قطعه بلدرچین نر که به گروههای ده تایی تقسیم شده بودند استفاده شد. تزریقات در فاصله زمانی ساعت ۹ تا ۱۲ انجام گرفت. بلافاصله پس از انجام تزریقات آب و غذا در اختیار پرندگان قرار گرفت و میزان اخذ غذای تجمعی در فواصل زمانی ۱۸۰، ۳۶۰ و ۵۴۰ دقیقه پس از تزریق اندازه گیری شد. آنالیز آماری داده ها با استفاده آزمون one way ANNOVA انجام شد و نتایج بصورت mean ± SDبیان شد.
نتایج و بحث: این مطالعه نشان داد تجویز محیطی گلوتامات توانست اخذ غذا را در بلدرچین کاهش دهد. تجویز آنتگونیست نوسی سپتین سبب کاهش معنی دار اخذ غذا در بلدرچین شد. که این اثر در هر سه دوز تزریق شده (15, 30 or 60 µg/kg)معنی دار بود($P<0.05$). بیشترین اثر در دوز (60µg/kg) مشاهده شد. زمان نهفته تا شروع اخذ غذا پس از تزریق گلوتامات و آنتاگونیست نوسی سپتین کاهش یافت. تجویز دوز پایین آنتاگونیست نوسی سپتین همراه با گلوتامات سبب کاهش بیشتر دریافت غذا در مقایسه با تجویز هر کدام به تنهایی شد. نتایج این بررسی نشان می دهدآنتاگونیست نوسی سپتین بطور معنی دار اثر کاهنده اشتهای گوتامان را در بلدرچین تشدید می کند. با توجه به این نتایج می توان گفت گلوتامات، اثر کاهنده اشتهای خود را در بلدرچین احتمالا از طریق گیرنده های نوسی سپتین اعمال می کند.
واژه های کلیدی :گلوتامات،نوسی سپتین ، اخذ غذا ، بلدرچین

اثر مهار گیرنده های محیطیcb1ر رفتار تغیه ای ناشی از گلوتامات در بلدرچین ا

شقایق حاجیان شهری[1] محمد رضا حاجی نژاد[2]الهام واعظی[3]علی مختار پور[4]
۱،۲،۳گروه علوم پایه دانشکده دامپزشکی، دانشگاه زابل، زابل، ایران ، ۴مرکز تحقیقات دام های خاص دانشگاه زابل،زابل،ایران

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روش تحقیق:در این بررسی از ۴۰ قطعه بلدرچین نر که به گروههای ده تایی تقسیم شده بودند استفاده شد. تزریقات در فاصله زمانی ساعت ۹ تا ۱۲ انجام گرفت. بلافاصله پس از انجام تزریقات آب و غذا در اختیار پرندگان قرار گرفت و میزان اخذ غذای تجمعی در فواصل زمانی ۱۸۰، ۳۶۰ و ۵۴۰ دقیقه پس از تزریق اندازه گیری شد. آنالیز آماری داده ها با استفاده آزمون one way ANNOVA انجام شد و نتایج بصورت mean ± SDبیان شد.

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واژه های کلیدی :گلوتامات،کانابینوئدید، اخذ غذا ، بلدرچین

اثر عصاره آویشن (*THYMUS VULGARIS*)بر اندامهای ایمنی در جوجه های گوشتی

فروغ طلازاده*[1] ، منصور میاحی [1]، صفیه زینلی لتحری[2]
[1] بخش بیماری های طیور، گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز
[2]دانش آموخته دانشکده دامپزشکی، دانشگاه شهید چمران اهواز
***نویسنده مسؤول: دکتر فروغ طلازاده ftalazade@gmail.com**

هدف: هدف از این مطالعه، بررسی اثر عصاره آویشن *(Thymus vulgaris)* بر وزن بورس فابریسیوس و طحال در جوجه های گوشتی می باشد.

مواد و روش کار: بدین منظور ۱۳۵ قطعه جوجه‌ی یک روزه‌ی گوشتی خریداری و به طورتصادفی به ۳ گروه و هر گروه شامل ۳ زیر گروه ۱۵قطعه ای تقسیم شدند. جوجه‌های گروه ۱ و ۲ عصاره آویشن را به ترتیب به میزان ۰/۱٪و ۰/۲٪ به صورت روزانه در آب آشامیدنی در کل دوره‌ی پرورش دریافت کردند. جوجه‌های گروه ۳ به عنوان گروه شاهد عصاره آویشن را دریافت نکردند.

نتایج حاکی از آن است که دوز های مختلف عصاره آویشن بر وزن نسبی بورس و طحال در مقایسه با گروه کنترل تاثیر معنی داری نداشته است اما دریافت ۰/۲٪ عصاره آویشن میانگین وزنی بورس و طحال را افزایش داد اما این افزایش معنی دار نبود. اثرات سودمند عصاره های گیاهی در تغذیه حیوان شامل تحریک اشتها و افزایش مصرف خوراک ، افزایش ترشح آنزیمهای ترشحی دستگاه گوارش ، فعال سازی پاسخ ایمنی، فعالیت ضد باکتری ، ضد قارچی ، آنتی اکسیدانی و ضد انگلی می باشد. ترکیبات ایزوپرن و فلاونوئید موجود در عصاره ممکن است فعالیت فیزیولوژیک و شیمیایی مجرای گوارشی را تحت تاثیر قرار دهد. همچنین اثر تثبیت کنندگی عصاره های گیاهی بر میکروفلور روده ممکن است مربوط به متابولیسم مواد مغذی باشد(۱،۲ و۳).

کلمات کلیدی : عصاره آویشن، جوجه گوشتی، وزن بورس ،وزن طحال

مقایسه دو برنامه مختلف تجویز واکسن‌های خارجی بیماری بورس عفونی بر ایمنی زایی در برابر واکسن بیماری نیوکاسل در جوجه‌های گوشتی

منصور میاحی[1]، فروغ طلازاده[2]*، سیدحبیب موسوی[3]
[1]استاد بهداشت و بیماری‌های طیوردانشکده دامپزشکی دانشگاه شهید چمران اهواز
[2]استادیار بهداشت و بیماری‌های طیوردانشکده دامپزشکی دانشگاه شهید چمران اهواز
[3]دانش آموخته دکترای حرفه‌ای دانشکده دامپزشکی دانشگاه شهید چمران اهواز
ftalazade@gmail.com

هدف: این بررسی بر آن است تا اثرات ایمینوساپرسیو تعداد دفعات تجویز واکسن غیر کلون با حدت متوسط خارجی را بر پاسخ ایمنی هومورال ضد واکسن نیوکاسل مطالعه نماید.
مواد وروش کار:یکصد و هشتاد جوجه‌ی گوشتی یک روزه خریداری و در روز اول ۳۰ جوجه به طور تصادفی جهت تعیین زمان واکسیناسیون با فرمول دونتر خون‌گیری شدند. بقیه‌ی جوجه‌ها به ۳ گروه مساوی و هر گروه به ۲ زیر گروه مساوی ۲۵ قطعه‌ای با میانگین وزن مشابه تقسیم شدند. بر اساس نتایج آزمایش الیزا و دستورالعمل واکسن‌ها، جوجه های گروه ۱ با واکسن گامبورو با حدت متوسط تولید شرکت لوهمان فقط در ۱۶ روزگی به روش آب آشامیدنی و جوجه های گروه ۲ با واکسن گامبورو با حدت متوسط تولید شرکت لوهمان در ۱۶ و۲۳ روزگی واکسینه شدند. و گروه۳ به عنوان کنترل واکسینه نشدند. در ۹ روزگی جوجه‌های هر۳ گروه با واکسن B1 نیوکاسل به روش قطره چشمی و واکسن کشته ی دوگانه‌ی نیوکاسل و آنفلوانزا به روش زیر پوست پشت گردن واکسینه شدند. در ۴۲ روزگی از هر گروه ۱۶ جوجه به طور تصادفی انتخاب، و از ورید وداج آن‌ها خون‌گیری به عمل آمد. میانگین عیار پادتن ویژه واکسن نیوکاسل به وسیله آزمایش ممانعت از هماگلوتیناسیون اندازه گیری شد.
نتایج: نتایج این مطالعه نشان می‌دهد در ۴۲ روزگی میانگین عیار پادتن اختصاصی بیماری نیوکاسل در سرم خون جوجه‌های گروه ۱ و۲ دارای اختلاف معنی دار می باشد به این صورت که جوجه های گروه ۲ دارای عیار بالاتری می باشند.
نتیجه گیری: به نظر می‌رسد واکسیناسیون جوجه‌ها، ضد بیماری گامبورو درصورتی که دو نوبت تجویز شود اثر منفی بر پاسخ ایمنی ضد واکسن نیوکاسل ندارد.

بررسی سرولوژیک پرندگان متاپنومو‌ویروس در جوجه های گوشتی در غرب استان گلستان در ایران

فرهاد قدیمی[1]، سعید شاطری[2]، سید علی حسینی علی آباد[3]
۱. فارغ التحصیل دکتری دامپزشکی ، دانشکده دامپزشکی، دانشگاه آزاد اسلامی، واحد بابل، بابل، ایران
۲. گروه بیماریهای پرندگان، دانشکده دامپزشکی، دانشگاه آزاد اسلامی، واحد بابل، ایران
۳. گروه دامپزشکی، دانشکده کشاورزی، دانشگاه آزاد اسلامی، چالوس، ایران
مسؤول ایمیل نویسنده: farhad.ghadimi.vet@gmail.com

هدف از این مطالعه تعیین فراوانی آنتی بادی متاپنومو‌ویروس پرندگان در گله های گوشتی در غرب استان گلستان است. متاپنومو‌ویروس پرندگان عامل ایجاد عفونت دستگاه تنفسی فوقانی بوقلمون و ماکیان می‌باشد. به علت اهمیتی که عفونتهای پنومو‌ویروسی در ایجاد بیماری تنفسی به تنهایی و یا بصورت کمپلکس دارند، این ویروس بعنوان یکی از عوامل دخیل در ایجاد سندرم تنفسی در گله‌های طیور در نظر گرفته می‌شود. در مجموع ۹۴ نمونه خون از ۴ گله مرغ گوشتی (بین سنین ۲۵ و ۴۲ روز) را که علائم از جمله تورم سینوسها اینفوراربیتال، ترشحات اکلونازال، رال تراشه و سرفه جمع آوری شد. نمونه سرم برای حضور آنتی بادی بر علیه پرندگان متاپنومو‌ویروس با استفاده از یک آنزیم تجاری مورد آزمایش قرار گرفتند مرتبط کیت آزمون ایمونوسوربنت (Biocheck، ART، هلند) است که قادر به تعیین آنتی بادی بر علیه A و B از زیرگروه متاپنومو‌ویروس مرغی بود. نتایج این مطالعه نشان داد که از ۹۴ نمونه سرم، ۳۰ نمونه مثبت بود (۳۱.۹۲٪) و ۴۴ نمونه مشکوک (۴۶.۸۱٪) و ۲۰ نمونه منفی (۲۱.۲۷٪) آنتی بادی متاپنومو‌ویروس پرندگان بود. همه جوجه های گوشتی متاپنومو‌ویروس پرندگان واکسینه نشده است و این نتایج نشان می دهد که جوجه های گوشتی به این پاتوژن مهم طیور تحت تاثیرقرار گرفته اند. با بررسی نتایج این مطالعه می‌توان نتیجه‌گیری کرد که متاپنومو‌ویروس‌های پرندگان نقش مهمی در بروز کمپلکس‌های تنفسی در گله‌های گوشتی استان گلستان دارند. کارهایی که باید در آینده باید انجام بگیرد شامل استفاده از روشهای مولکولی و جداسازی ویروس می باشد. می توان اقدام به کنترل بیماری متاپنومو‌ویروس پرندگان نمود.
کلید واژگان: پرندگان متاپنومو‌ویروس، جوجه گوشتی، الایزا، گلستان، ایران

بررسی مقدار فلزات کادمیوم و سرب در بافت بیضه و ارتباط آنها با غلظت هورمون تستوسترون در جوجه های نر

حمید حسنی
گروه مهندسی علوم دامی، دانشکده کشاورزی و منابع طبیعی، واحد کرج، دانشگاه آزاد کرج، کرج، ایران
ایمیل: mdfhassani@gmail.com

مقدمه: بر اساس پژوهش هایی که صورت گرفته است، به نظر می رسد که سموم زیست محیطی، بویژه فلزات سنگین و مواد شیمیایی آلی با منشاء سنتتیک و میکروبیولوژیکی، تولید و عملکرد هورمون ها را در بیضه پستانداران مختل می نماید. اختلال در فعالیت غدد درون ریز منجر به اختلالات عملکرد بیضه و در نتیجه به خطر افتادن تکامل طبیعی فنوتیپی ویژگی های جنسی جنس نر، شروع و حفظ اسپرماتوژنز می گردد. همچنین سموم سبب نقص در عملکرد سلول های بیضه، بافت شناسی بیضه و عملکرد سلول های اسپرم می شوند. هدف از انجام این مطالعه بررسی ارتباط بین غلظت فلزات سنگین کادمیوم و سرب در بافت بیضه و مقدار هورمون تستوسترون سرم جوجه های نر بود.
مواد و روش کار: خون و بیضه ۴۰ قطعه جوجه نر (نژاد راس، ۲۰ هفتگی) جمع آوری گردید. نمونه های بیضه به منظور بررسی مقدار کادمیوم و سرب بوسیله اسپکتروفوتومتر جذب اتمی شعله آنالیز گردیدند. غلظت هورمون تستوسترون سرم به روش ELFA اندازه گیری شد. آنالیز آماری نتایج با کمک نرم افزار آماری SAS انجام گرفت.
نتایج و بحث: میانگین غلظت کادمیوم و سرب بافت بیضه به ترتیب ۰/۰۲ و ۰/۰۹ میکروگرم بر گرم بود. همچنین میانگین مقدار تستوسترون ۰/۵ نانو گرم بر گرم بدست آمد. بر طبق نتایج این تحقیق، بین سرب و تستوسترون (r=۰/۳۹۹) همبستگی مثبت وجود دارد. مشخص شده است که کادمیوم وسرب موجب عدم تعادل هورمونی می شوند و این فلزات بر روی اسپرماتوژنز، استروئیدوژنز و سیستم اکسیداسیون و کاهش اثر می گذارند. در نتیجه، داده های حاصل از این بررسی ارتباط معنی داری بین فلز سرب و هورمون تستوسترون نشان می دهند.
کلمات کلیدی: کادمیوم، سرب، تستوسترون، جوجه نر

بررسی غلظت املاح کلسیم، منیزیم و فسفر موجود در پلاسمای منی و ارتباط آن با برخی خصوصیات اسپرم در خروس

ابوالفضل غنی ئی[1]، سیدسجاد بابایی مرزنگو[1]، محسن اسلامی[2]، حامد میرزایی[2]
۱.بخش بیماری های طیور۲.بخش مامایی.دانشکده دامپزشکی ارومیه،ارومیه،ایران
نویسنده مسوول: ***Sajadbabaei999@yahoo.com***

هدف:این تحقیق برای ارزیابی میزان عناصر کمیابی نظیر کلسیم و فسفر و رابطه این عناصر با برخی ویژگی های اسپرم نظیر حرکت پیش رونده رو به جلو (FPM)، زنده مانی و غلظت اسپرم در خروس ها انجام شد.
روش کار:تعداد ۱۰ عدد خروس نژاد راس ۳۰۸ با سن ۴۰ هفته در این مطالعه استفاده گردید. منی از خروس ها، دو بار در هفته و به روش مالش شکمی گرفته و در ازمایشگاه پس از ارزیابی FPMو درصد زنده مانی، پلاسمای ان جدا شده وتا زمان اندازه گیری در $^{\circ}C$ ۲۰- نگهداری گردید.میانگین غلظت عناصر با کیتهای تجاری اندازه گیری شد.
نتایج:میانگین غلظت کلسیم و فسفر در پلاسمای منی به ترتیب ۰/۴۰ ±۶/۵۲ و ۰/۱۸ ± ۳/۸۹ میلیگرم در دسی لیتر اندازه گیری گردید به جهت قضاوت بهتر بر روی داده ها، نتایج مربوط به حرکت پیشرونده رو به جلو به سه گروه مختلف شامل گروه عالی (نمونه های دارای بیش از ۹۰٪ حرکت پیشرونده رو به جلو به تعداد ۳۱ نمونه)، گروه خوب (نمونه های دارای حرکت پیشرونده رو به جلو بین ۷۰-۸۹٪ به تعداد ۹ نمونه) و گروه متوسط (نمونه های دارای حرکت پیشرونده رو به جلو کمتر از ۷۰٪ به تعداد ۱۱ نمونه) تقسیم شدند. در گروه عالی ضریب همبستگی بین حرکت پیشرونده رو به جلو با غلظت کلسیم و فسفر به ترتیب ۰/۱۳، ۰/۱۰ بود که تفاوت معنادار مشاهده نشد ($P>0.05$). در گروه خوب نیز ضریب همبستگی بین حرکت پیشرونده رو به جلو با غلظت کلسیم، فسفر به ترتیب ۰/۵۱، ۰/۱۱ بود که تفاوت معنادار نبود ($P>0.05$). در گروه متوسط ضریب همبستگی بین حرکت پیشرونده رو به جلو با غلظت کلسیم، فسفر به ترتیب ۰/۱۸-، ۰/۱۱ بود که تفاوت معنادار نبود ($P>0.05$).
در نتیجه، مطالعه ما مشخص نمود کهغلظت کلسیم میتواند FPM و میزان زنده مانی اسپرم های خروس را بهبود بخشد.
کلمات کلیدی: کلسیم؛فسفر؛ منی؛ خروس

اثر اسید پالمیتولئیک بر کیفیت پلاسمای منی خروس در شرایط آزمایشگاه

محسن اسلامی[۱]، حامد میرزایی[۱]، ابوالفضل غنی ئی[۲]، سیدسجاد بابایی مرزنگو[۲]
۱.بخش مامایی، ۲.بخش بیماری های طیور، دانشکده دامپزشکی ارومیه،ارومیه،ایران
نویسنده مسوول:Sajadbabaei999@yahoo.com

هدف:امروزه تلقیح مصنوعی بطور وسیع در ماکیان استفاده می شود، لذا جهت جلوگیری از کاهش باروری در منی ذخیره شده، تکنیک های مختلف برای ذخیره سازی منی مورد نیاز است. در این مطالعه اثرات اسید پالمیتولئیک روی منی ذخیره شده خروس در دمای ۴ درجه سانتیگراد بررسی شد.

روش کار:جمع آوری منی از خروس ها دو نوبت در هفته انجام گرفت. سپس نمونه های با کیفیت خوب جدا شده و رقیق می شدند و به آنها اسید پالمیتولئیک با غلظت های صفر (کنترل)، ۰/۲۵(P۰/۲۵)، ۰/۵(P۰/۵) میلی مولار افزوده شد. حرکت پیشرونده رو به جلو، قابلیت زنده مانیو غلظت مالون دی آلدهید در پلاسمای منی و اسپرماتوزوآ در ساعت های صفر، ۲۴ و ۴۸ آزمایش اندازه گیری شد.

نتایج:حرکت پیشرونده رو به جلو در ساعت ۲۴ به ترتیب ۷۷/۵±۱/۰۴ و ۶۹/۵±۲/۳۲ درصد و در ساعت ۴۸ به ترتیب ۴۹/۳۳±۱/۳۶ و ۴۳/۰±۲/۰۸ درصد بود (P<۰/۰۲). غلظت مالون دی آلدهید پلاسمای منی بین گروه های مختلف اختلاف معنی داری نشان نداد، در حالی که غلظت مالون دی آلدهید اسپرماتوزوآ در گروههای P۰/۲۵ و P۰/۵ در مقایسه با گروه کنترل در ساعتهای ۲۴ و ۴۸ مطالعه کمتر بود (P<۰/۰۰۲). در نتیجه، غنی سازی منی خروس با غلظت های پایین اسید پالمیتولئیک می تواند اثرات مفیدی روی کیفیت منی هنگام ذخیره سازی در دمای یخچال داشته باشد.

کلمات کلیدی: اسید پالمیتولئیک، منی، خروس

اثر اسید اولئیک بر کیفیت پلاسمای منی خروس در شرایط آزمایشگاه

محسن اسلامی[۱]، حامد میرزایی[۱]، ابوالفضل غنی ئی[۲]، سیدسجاد بابایی مرزنگو[۲]
۱.بخش مامایی، ۲.بخش بیماری های طیور، دانشکده دامپزشکی ارومیه،ارومیه،ایران
نویسنده مسوول:**Sajadbabaei999@yahoo.com**

هدف:امروزه تلقیح مصنوعی بطور وسیع در ماکیان استفاده می شود، لذا جهت جلوگیری از کاهش باروری در منی ذخیره شده، تکنیک های مختلف برای ذخیره سازی منی مورد نیاز است. در این مطالعه اثرات اسید پالمیتولئیک روی منی ذخیره شده خروس در دمای ۴ درجه سانتیگراد بررسی شد.

روش کار:جمع آوری منی از خروس ها دو نوبت در هفته انجام گرفت. سپس نمونه های با کیفیت خوب جدا شده و رقیق می شدند و به آنها اسید اولئیک با غلظت های صفر (کنترل)، ۰/۲۵(P۰/۲۵)، ۰/۵(P۰/۵) میلی مولار افزوده شد. حرکت پیشرونده رو به جلو، قابلیت زنده مانیو غلظت مالون دی آلدهید در پلاسمای منی و اسپرماتوزوآ در ساعت های صفر، ۲۴ و ۴۸ آزمایش اندازه گیری شد.

نتایج:حرکت پیشرونده رو به جلو در ساعت ۲۴ به ترتیب 80.00±2.08و 66.00±2.30درصد و در ساعت ۴۸ به ترتیب 57.33±2.18و 41.33±2.02درصد بود (P<0.001). غلظت مالون دی آلدهید پلاسمای منی در گروه هایدارای اولئیک در ساعات ۲۴ و ۴۸ کمتر بود ($P < 0.05$). در نتیجه، غنی سازی منی خروس با غلظت های پایین اسید اولئیک می تواند اثرات مفیدی روی کیفیت منی هنگام ذخیره سازی در دمای یخچال داشته باشد.

کلمات کلیدی: اسید اولئیک، منی، خروس

بررسی مولکولی ژن پروتئین غشاء خارجی (*ompH*) در میان جدایه های *پاستورلا مولتوسیدا* پرندگان از ایران

سپیده حق نظری[۱]، احمدرضا جباری*[۲]، کیوان تدین[۳]
[۱] کارشناسی ارشد میکروبیولوژی، مؤسسه تحقیقات واکسن و سرم سازی رازی
[۲*] دانشیار مؤسسه تحقیقات واکسن و سرم سازی رازی، کرج، ایران
[۳] استادیار میکروب شناسی، مؤسسه تحقیقات واکسن و سرم سازی رازی، کرج، ایران
a.jabbari@rvsri.ac.ir

پاستورلا مولتوسیدا باکتری گرم منفی، بدون حرکت، بدون اسپور، کوکوباسیل حساس به پنی سیلین متعلق به خانواده پاستورلاسه است و می تواند موجب یک بیماری مشترک بین انسان و دام شود. همچنین باعث بیماری های مختلف از جمله سپتی سمی هموراژیک در گاو، رینیت آتروفیک در خوک و وبای مرغان در طیور می باشد. *پاستورلا مولتوسیدا* ایجادکننده وبای مرغان در گونه های پرندگان به سروتیپ های A: 1، A: 3 یا A: 4 تعلق دارند. مرگ و میر بالا در رابطه با وبای مرغان خسارات اقتصادی قابل توجهی را به صنعت طیور وارد کرده است. چندین فاکتور به عنوان فاکتورهای مهم ویرولانس از جمله کپسول، لیپوپلی ساکارید، ادهسین ها، پروتئین غشاء خارجی، توکسین و فاکتورهای کسب آهن می باشند. پروتئین های غشاء خارجی OmpA، OmpH و P6 به عنوان سه پروتئین ایمونوژنیک اصلی (OMVs) شناخته شده اند. در این مطالعه سی جدایه از *پاستورلا مولتوسیدا* جدا شده از طیور با استفاده از تست های باکتری شناسی و بیوشیمیایی بر طبق روش کلاسیک مورد مطالعه و طبق روش مولکولی PM-PCR تشخیص داده شدند. همچنین از نظر حضور فاکتور ویرولانس کپسول و ژن *ompH* مورد آزمایش قرار گرفتند. هدف از این مطالعه بررسی سکانس نوکلئوتیدی ژن *ompH* در جدایه های پرندگان *پاستورلا مولتوسیدا* سروتیپ های۱ (سویه واکسینال)، ۳ و ۴ از ایران و مقایسه فیلوژنی با جدایه های کشورهای دیگر بود. سکانس های نوکلئوتیدی ژن *ompH* (1100 bp) بین سویه واکسینال و سروتیپ های ۳ و ۴ توسط نرم افزارهای clustalx، Artemis و MEGA مورد بررسی قرار گرفت. بررسی سکانس ژن *ompH* توسط BLAST تشابه ۱۰۰٪-۹۶ میان جدایه واکسینال (سروتیپ ۱) با سکانس های منتشر شده در GenBank را نشان داد. جدایه های سروتیپ های ۳ و ۴ به ترتیب تشابه ۸۸ و ۸۷٪ با سویه واکسینال را نشان دادند. بررسی سکانس انجام شده ۵ ناحیه حفاظت شده، ۴ ناحیه متغیر (SNPs) و ۳ ناحیه حذف شده را در ژن *ompH* در جدایه های *پاستورلا مولتوسیدا* را نشان داد. تطابق بین سروتیپ های ۳ و ۴ (۹۴٪) بود. دندروگرام همسایگی به نمایندگی از روابط فیلوژنیک ژن *ompH* نشان داد که جدایه واکسینال و جدایه های فیلدی در دو شاخه متفاوت واقع شده اند.این یافته ها تفاوت سکانسی قابل توجهی در ژن *ompH* بین سروتیپ های ۱، ۳ و ۴ جدایه های بومی پرندگان در *پاستورلا مولتوسیدا* را نشان داد که می تواند به فهم بیشتر روابط ژن *ompH* از سویه واکسینال و جدایه های فیلدی از ایران با سایر کشور ها کمک نماید. این اطلاعات می تواند برای آماده سازی واکسن مؤثر در برابر عفونت های *پاستورلا مولتوسیدا* کمک کند.
کلمات کلیدی: *پاستورلا مولتوسیدا*، پرندگان، وبای مرغان، ژن *ompH*، PM-PCR، آنالیز سکانس

اطلاعات آماری معنیدار از الگوهای هیستوپاتولوژی عارضهٔ پریکاردیت در جوجه‌های گوشتی

۳ بهزاد میرزائی ،۲لقمان اکرادی ،*۱ نوید دهقان
۱ دانشجوی سال آخر دکترای دامپزشکی، دانشگاه آزاد اسلامی سنندج
۲ استادیار گروه پاتولوژِی دانشگاه آزاد اسلامی واحد سنندج
۳ فارغ التحصیل دکترای دامپزشکی، دانشگاه آزاد اسلامی سنندج
Navid.dehghan1993@gmail.com

توصیف بیماری: پریکاردیت یک ضایعهٔ شایع در طیوری است که عفونتهای باکتریایی عمومی دارند. در طیور تجارتی (این التهاب)، مخصوصاً در عفونت اشریشیاکلی وجود داشته است و در پی بیماریهای تنفسی بروز میکند. در ضایعات اولیه سلولهای هتروفیل و فیبرین زیادی وجود دارد، سپس سلولهای لنفوئیدی و ماکروفاژ بیشتر و غالب میباشند. و اگر مرغ زنده بماند بافت فیبروزی و چسبندگی ایجاد می‌شود.
در کشتارگاه پر سنندج از ۱۳۳۱ تا خرداد ماه ۱۳۳۳ مواد و روش کار- در طی یک دوره چهار ماهه از اسفند ماه پس از تشخیص، قلبهای دارای ضایعه 1332 ضبط شد و ، قلب دارای عارضه پریکاردیت بودند ۷۳۸ قلب حذفی مرغ گوشتی درصد تثبیت، و تحت ۱۱ سپس از موارد مثبت با ضایعات ماکروسکوپی، نمونه میکرونی آماده و به روش ۵ روشهای معمول هیستوتکنیک، بلوکهای پارافینی تهیه گردید. در نهایت H&Eبافتی در ابعاد مناسب اخذ، و در فرمالین رنگ آمیزی شدند. بررسی های هیستوپاتولوژی توسط میکروسکوپ نوری Olympus .مقاطع انجام گرفت
نتیجه و سر انجام- عارضه پریکاردیت دارای الگوهای مختلفی از لحاظ هیستوپاتولوژی بوده که در تصاویر گرفته شده، تجزیه و تحلیلهای لازم صورت گرفته، اما در دستهبندی های آماری و جداول، غالبیت هر کدام از الگوها در هر لام لحاظ ٪) ضبط شده در کشتارگاه الگوهای ۳۱.۱۳ نمونه پریکاردیت(۷۳۸ گردید، تا درک درستی از تشخیص بیان گردد. در ۱۵۷ ،)٪۱۸.۱۱ مورد پریکاردیت(۱۲۲ هیستوپاتولوژی متفاوتی در دید میکروسکوپی مشاهده گردید. که از این میان شاهد مورد ۵۱ ،)٪۱۱.۸۱ مورد میوکاردیت(۱۱۵ ،)٪۱۱.۸۱ مورد پرخونی میوکارد(۱۱۵ ،)٪۱۸.۵۱مورد پرخونی عروقی(تیفوئید %(CRD بودیم .که پریکاردیت از علایم عفونتهای باکتریایی چون پلوروم، کلیباسیلوز، لیستریوز، ۳.۱۲اندوکاردیت(، تیفوئید (از نوع گرانولومایی) و نیز CRD و... بوده و میوکاردیت که از علایم عفونتهای ویروسی و باکتریایی چون پلوروم، اندوکاردیت در عفونتهای میکروبی از جمله استاف، استرپتو و به ندرت پاستورلا دیده میشود.
کلید واژگان- قلب، پریکاردیت، جوجه های گوشتی، پاتولوژی، لیستریوز

سندرم آسیت و عوامل به وجود آورندهٔ آن در تشخیص ضایعات پاتولوژیک قلب جوجه‌های گوشتی و ارتباط آن با موقعیت جغرافیایی منطقه در سنندج

بهزاد میرزائی[1]*، لقمان اکرادی[2]،امجد فرزین پور[3]
۱- دانشجوی سال آخر دکترای دامپزشکی، دانشگاه آزاد اسلامی سنندج ، ۲- استادیار گروه پاتولوژِی دانشگاه آزاد اسلامی واحد سنندج، ۳- استادیار گروه بهداشت و بیماریهای طیور دانشگاه کردستان
پست الکترونیک نویسنده مسوول: mirzayi.behzad@gmail.com

توصیف بیمار- تجمع مایع در حفرهٔ شکم(مقادیر زیادی از مایع زرد رنگ در حفرهٔ بطنی حضور دارد)، هیدروپریکارد (تجمع مایع در پردهٔ پیرامون قلب)، بزرگی قلب ناشی از اتساع دهلیز و بطن راست از علایم آسیت به شمار می‌آیند. جوجه‌های گوشتی به علت رشد سریع، راندمان بالای غذایی و حجم بالای عضلات سینه که همگی نیاز به اکسیژن را تشدید می‌کنند به آسیت حساس هستند. متابولیسم در جوجه‌های گوشتی سریع الرشد، بسیار بالا است. بنابراین عدم تعادل بین تأمین اکسیژن برای رشد سریع و راندمان غذایی بالا باعث ایجاد آسیت در جوجه‌های گوشتیمی‌شود.
مواد و روش کار- در طی یک دوره چهار ماهه از اسفند ماه ۱۳۹۳ تا خرداد ماه ۱۳۹۴ در کشتارگاه پر سنندج از ۱۳۹۲ قلب حذفی مرغ گوشتی۱۷ قلب دارای عارضه آسیت بودند، پس از تشخیص،قلب‌های دارای ضایعه ضبطش د و سپس ازموارد مثبت باضایعات ماکروسکوپی،نمونه بافتی درابعاد مناسب اخذ، و درفرمالین۱۰درصدتثبیت،وتحت روش‌های معمول هیستوتکنیک،بلوک‌های پارافینی تهیه گردید. درنهایت مقاطع۵ میکرونی آماده وبه روش H&Eرنگ آمیزی شدند. بررسی های هیستوپاتولوژی توسط میکروسکوپ نوری Olympus انجام گرفت.
نتیجه و سر انجام- در عارضه‌های آسیتی(ماکروسکوپی)، که آسیتی بودن لاشه قطعی بود، الگوهایی چون تجمع چربی یا گلیکوژن را شاهد بودیم. که ۱۱ مورد(۶۴.۷۰٪) آن در جنوب سنندج و ۶ مورد(۳۵.۲۹٪) در شمال سنندج گزارش گردید ولی در نمونه‌های بررسی شده در شرق و غرب سنندج موردی گزارش نشد. ارتفاع و مقادیر اضافی داروی فورازولیدون در جیرهٔ غذایی، مسمومیت با سدیم، تغذیهٔ طیور توسط مقادیر زیادی روغن دانه کلم با شلغم روغنیحاوی اسید اروسیک، مسمومیت با چربی و دی فنیل کلراید می توانند از عوامل به وجود آورندهٔ آسیت باشند.
کلید واژگان- قلب، آسیت، جوجه‌های گوشتی، پاتولوژی

بررسی فراوانیضایعات پاتولوژیک قلب جوجه‌های گوشتی به منظور مشاهده تومورهای لنفوئیدی ناشی از بیماری مارک

بهزاد میرزائی[1]*، لقمان اکرادی[2]،امجد فرزین پور[3]
۱-فارغ التحصیل دکترای دامپزشکی، دانشگاه آزاد اسلامی سنندج، ۲- استادیار گروه پاتولوژِی دانشگاه آزاد اسلامی واحد سنندج ۳- استادیار گروه بهداشت و بیماریهای طیور دانشگاه کردستان
پست الکترونیک نویسنده مسوول: mirzayi.behzad@gmail.com

توصیف بیمار- بیماری مارک از شایع‌ترین بیماری‌های لنفوپرولیفراتیو در طیور است که به وسیله نفوذ سلول‌های تک هسته‌ایبه یک یا تعداد بیشتری از اعصاب محیطی، گنادها، عنبیه، پوست و احشاء مختلف داخلی مشخص می‌گردد. تومورهای اندوتلیوم عروقی به صورت انفرادی در ماکیان رخ می‌دهند، ولی گاهی موجب مرگ‌ومیر شدیدی در یک گله می‌شوند. این تومورها می‌تواند توسط ویروسهای لکوز / سارکوما ایجاد گردند. تومورهای لنفوئیدی ناشی از بیماری مارک شایعترین تومورهای قلب ماکیان می‌باشند. فیبروسارکوماها و رابدومیوسارکوماها در قلب طیور به ندرت گزارش شده‌اند.
مواد و روش کار- به این منظور در طی یک دوره چهار ماهه از اسفند ماه ۱۳۹۳ تا خرداد ماه ۱۳۹۴ نمونه برداری از کشتارگاه انجام و مجموعاً تعداد ۱۴۰ قلب به طور تصادفی از مرغ های ارسالی به کشتارگاه انتخاب و برداشته شد. سن این طیور ۷ هفته یا کمی بیشتر و وزن آنها به طور متوسط حدود ۲/۹ کیلوگرم بود.پس از تشخیص،قلب‌های دارای ضایعه ضبط شد و سپس از موارد مثبت با ضایعات ماکروسکوپی،نمونه بافتی درابعاد مناسب اخذ،و درفرمالین۱۰درصدتثبیت،وتحت روش‌هایمعمول هیستوتکنیک،بلوک‌های پارافینی تهیه گردید. درنهایت مقاطع۵ میکرونی آماده وبه روش H&Eرنگ آمیزی شدند. بررسی های هیستوپاتولوژی توسط میکروسکوپ نوری Olympus انجام گرفت.
نتیجه و سر انجام- در زمان انجام این پژوهش بررسی‌های مشابهی بر روی کبد جهت بررسی بیماری مارک در کشتارگاه پر سنندج انجام گرفت که از ۷۰ کبد برداشته شده ۶ نمونه مبتلا به مارک تشخیص داده شد که از این تعداد ۴ مورد به صورت کانونی (۶۷ درصد) و ۲ مورد دارای ضایعات منتشر (۳۳ درصد) بودند و ۸ مورد از نمونه ها مشکوک به بیماری تشخیص داده شدند که با وصف این توضیحات و وجود بیماری مارک در منطقه اما نمونه قلب مبتلا به مارک گزارش نگردید.
کلید واژگان- قلب، مارک، جوجه‌های گوشتی، پاتولوژی

بررسی فراوانی ضایعات پاتولوژیک بیماری قلب گرد در جوجه‌های گوشتی با سن ۷ هفته

بهزاد میرزائی[۱*]، لقمان اکرادی[۲]،امجد فرزین پور[۳]
۱- فارغ التحصیل دکترای دامپزشکی، دانشگاه آزاد اسلامی سنندج،۲- استادیار گروه پاتولوژِی دانشگاه آزاد اسلامی واحد سنندج
۳- استادیار گروه بهداشت و بیماریهای طیور دانشگاه کردستان
پست الکترونیک نویسنده مسوول: mirzayi.behzad@gmail.com

توصیف بیمار- بیماری قلب گرد، پرندگان با سن بالای چهار ماه را مبتلا می‌کند و با مرگ ناگهانی مشخص می‌شود. قلب مرغهای مبتلا بی‌رنگ و بزرگ می‌شود، نوک قلب مبتلا، ممکن است فرو رفته باشد. رشته‌ها در سراسر میوکارد متورم و دانه دار، و محتوی واکوئولهای ریزی هستند. در ضایعات شدید ممکن است واکوئولها با هم یکی شوند و فضای خالی مشخصی در اطراف هسته ایجاد کنند که یک غشاء سلولی مشخصی در اطراف محیط رشته باقی می‌گذارند. واکوئولها و فضاهای خالی ناشی از آنها نشانه چربی هستند. هسته‌ها ممکن است در حاشیه قرار گرفتن کروماتین و یک هستک برجسته، بزرگ شده باشند.

مواد و روش کار- به این منظور در طی یک دوره چهار ماهه از اسفند ماه ۱۳۹۳ تا خرداد ماه ۱۳۹۴ نمونه برداری از کشتارگاه انجام و مجموعاً تعداد ۱۴۰ قلب به طور تصادفی از مرغ های ارسالی به کشتارگاه انتخاب و برداشته شد. سن این طیور ۷ هفته یا کمی بیشتر و وزن آنها به طور متوسط حدود ۲/۹ کیلوگرم بود.پس از تشخیص،قلب‌های دارای ضایعه ضبط شد و سپس ازموارد مثبت باضایعات ماکروسکوپی،نمونه بافتی درابعاد مناسب اخذ،و درفرمالین۱۰درصدتثبیت،وتحت روش‌های معمول هیستوتکنیک،بلوک‌های پارافینی تهیه گردید. درنهایت مقاطع۵ میکرونی آماده وبه روش H&Eرنگ آمیزی شدند. بررسی های هیستوپاتولوژی توسط میکروسکوپ نوری Olympus انجام گرفت.

نتیجه و سر انجام- بیماری قلب گرد پرندگان، سن بالای چهار ماه را مبتلا می‌کند، اما در این بررسی با وجود کم بودن میانگین سن گله، شاهد ضایعات دژنراتیو(تجمع چربی) که از علایمRHD است، بودیم.قلب رنگ پریده و به دلیل هیپرتروفی بطن چپ به طور مشخصی بزرگ شده است و رأس بطن چپ بزرگتر از قاعده آن می‌باشد. از ۱۴۰ نمونه مورد بررسی ۷ مورد(۵٪) دارای ضایعات دژنراتیو بودند.

کلید واژگان- قلب، RHD، جوجه‌های گوشتی، پاتولوژی

بررسی فراوانی عارضه خونریزی در قلب جوجه های گوشتی و تعیین الگوهای هیستوپاتولوژیکی مرتبط با آن

ثنا غفاری[۱*]، لقمان اکرادی[۲]، بهزادمیرزائی[۳]
۱- دانشجوی سال آخر دکترای دامپزشکی، دانشگاه تبریز ۲- استادیار گروه پاتولوژِی دانشگاه آزاد اسلامی واحد سنندج
۳- فارغ التحصیل دکترای دامپزشکی، دانشگاه آزاد اسلامی سنندج
پست الکترونیک نویسنده مسوول: sana_ghafari@yahoo.com

توصیف بیمار- در برخی از بیماریهای طیور خونریزیهای نقطه‌ای تا وسیع شایع است. بیماریزائی این خونریزیها کمتر مورد مطالعه قرار گرفته است. خونریزی‌ها ممکن است ناشی از آپلازی مغز استخوان یا بر اثر کمبود فاکتورهای انعقادی ناشی از کمبود ویتامین K باشند. شکنندگی مویرگی ناشی از مسمومیتهای قارچی و کمبودهای ویتامین E / سلنیوم، به عنوان یک عامل خونریزی ذکر شده است. در طیوری که به عفونتهای عمومی باکتریایی و ویروسی مبتلا هستند، خونریزی‌ها ممکن است در نتیجهٔ انعقاد خون داخل عروقی منتشر ایجاد گردند و میکروترومبوزها در هر دو نوع عفونت دیده شده‌اند. احتمال تخریب مستقیم اندوتلیوم دیوارهٔ رگها توسط عوامل عفونت‌زا در برخی از بیماریهای عفونی نیز باید در نظر گرفته شود.

مواد و روش کار- در طی یک دوره شش ماهه از اسفند ماه ۱۳۹۳ تا شهریور ماه ۱۳۹۴ در کشتارگاه پر سنندج از ۱۳۹۲ قلب حذفی مرغ گوشتی۲۴۷ قلب دارای عارضه پر خونی بودند، .پس از تشخیص،قلب‌های دارای ضایعه ضبط شد و سپس ازموارد مثبت باضایعات ماکروسکوپی،نمونه بافتی درابعاد مناسب اخذ،و درفرمالین۱۰درصدتثبیت،وتحت روش‌های معمول هیستوتکنیک،بلوک‌های پارافینی تهیه گردید. درنهایت مقاطع۵ میکرونی آماده وبه روش H&Eرنگ آمیزی شدند. بررسی های هیستوپاتولوژی توسط میکروسکوپ نوری Olympus انجام گرفت.

نتیجه و سر انجام- در ۲۴۷ نمونه پرخونی(۱۷.۷۴٪) ضبط شده در کشتارگاه الگوهای هیستوپاتولوژی متفاوتی در دید میکروسکوپی مشاهده گردید. که از این میان ۱۱۱ مورد پرخونی عروقی(۴۴.۹۳٪)، ۴۹ مورد اندوکاردیت(۱۹.۸۳٪)، ۲۵ مورد پریکاردیت(۱۰.۱۲٪)، ۲۵ مورد میوکاردیت(۱۰.۱۲٪)، ۱۳ مورد خونریزی میوکارد(۵.۲۶٪)، ۱۲ مورد پرخونی میوکارد(۴.۸۵٪) و ۱۲ مورد همولیز داخل عروقی(۴.۸۵٪) بودند. که این خونریزی‌ها می تواند در اثر بیماری‌هایی از جمله کلی باسیلوز حاد، وبا، نیوکاسل، هپاتیت ویروسی و... به وجود می‌آید.

کلمات کلیدی: خونریزی، پاتولوژی، قلب، جوجه‌های گوشتی،کشتارگاه

بررسی فراوانی ارتباط بین کاردیومیوپاتی جوجه های گوشتی با وزن آن ها از قلب های حذفی کشتارگاه پر سنندج

میلاد مرادی[۱]*، میلاد باینچو[۱]، مجتبی توشمالانی[۱]، لقمان اکرادی[۲]، بهزاد میرزائی[۳]
۱- دانشجوی سال آخر دکترای دامپزشکی، دانشگاه آزاد اسلامی سنندج، ۲- استادیار گروه پاتولوژی دانشگاه آزاد اسلامی واحد سنندج
۳- فارغ التحصیل دکترای دامپزشکی، دانشگاه آزاد اسلامی سنندج
پست الکترونیک نویسنده مسوول: miladmoradi57@yahoo.com

توصیف بیمار- قلب، عضله ای است با حفرات و دریچه هایی که کارکرد آن مانند یک پمپ دوقلو طراحی شده است تا هموگلوبین حامل اکسیژن را در بسته های کوچک(سلول های قرمز خون) به سمت مجموعه ایی از مجاری(عروق خونی) انتقال دهد. عضله قلب همانند عضلات دیگر از راه هیپرتروفی به افزایش فعالیت پاسخ می دهد. سلولهای عضلهٔ قلب از لحاظ تعداد، افزایش نمی یابند یا تقسیم نمی شوند. میوپاتی قلبی هایپرتروفیک به سبب افزایش پمپاژ قلبی ایجاد می شود و قلبی را به وجود می آورد که توده عضلانی آن حجیم شده است. تغییرات ماکروسکوپیک در دو حالت ایجاد می شود، در صورتی که هیپرتروفی به علت افزایش حجم خون تبادلی باشد، باعث بزرگ شدن کامل قلب می گردد. افزوده شدن سارکومرها به انتهای رشته های عضلانی، آنها را طویل تر می نماید و قلب بزرگ می شود. حجم قلب افزایش می یابد ولی عضله دیواره قلب ضخیم‌تر نمی شود.
مواد و روش کار- در طی یک دوره سه ماهه از فروردین ۱۳۹۴ تا خرداد ماه ۱۳۹۴ در کشتارگاه پر سنندج از ۲۱۵۲۵ قلب مرغ گوشتی از ۱۰ مرغداری اطراف سنندج مورد بررسی قرار گرفت که جوجه های گوشتی از میانگین وزن ۱.۴۶ کیلوگرم تا ۳.۶۵ کیلوگرم مورد ارزیابی قرار گرفتند. و از تعداد ۱۳۹۲ قلب ضبط شده ۲۲۶ قلب دچار هایپرترفی شده و علایم کادریومیوپاتی را داشتند که بالاترین مشاهده این عارضه در وزن ۳.۱۰۰ که ۴۹ مورد و کمترین مشاهده این عارضه در وزن ۲.۶۰۰ که ۱ مورد گزارش گردید بود.
نتیجه و سر انجام- بین وزن گله و وجود کاردیومیوپاتی در کشتارگاه پر سنندج رابطه ای مستقیم وجود دارد، به این گونه که هر چه وزن گله بالاتر باشد میزان موارد ضبطی نیز بالاتر خواهد بود.توجه به وزن گله در مرغداری ها با توجه به داده های آماری داده شده؛ به هر میزان وزن گله پایین باشد از درگیری گله با بیماریهای قلبی عروقی کاسته شده و حذف کمتری صورت می گیرد و از لحاظ اقتصادی مقرون به صرفه تر خواهد بود. با این وصف و آمار به دست آمده مرغداری ها باید جوجه های گوشتی را در وزن پایین به کشتارگاه تحویل دهند.
کلید واژگان- قلب، کاردیومیوپاتی، جوجه های گوشتی، کشتارگاه، سنندج

جداسازی ژنوتایپینگ و توالی یابی بخشی از ژن فیوژن و تعیین جایگاه فیلوژنیک ویروس نیوکاسل ولوژنسک و سروتروپیک دخیل در واگیری اخیر استان ایلام

محمد باسامی، اوستا صدرزاده، محمدرضا باسامی

بیماری نیوکاسل ولوژنیک، از مهمترین بیماری‌های ویروسی پرندگان به ویژه ماکیان است که همه ساله خسارات اقتصادی وسیعی را در صنعت طیور کشور های در حال توسعه به جا می گذارد. عامل بیماری یک RNA ویروس از خانواده پارامیکسوویریده است. پارامیکسوویروس تیپ یک ماکیان (APMV-1) نامی ست که برای ویروس نیوکاسل پیشنهاد شده است. در چند سال اخیر همه گیری نیوکاسل ولوژنیک کشورهای منطقه از جمله ایران مطرح است. با توجه به مشاهده موارد متعدد بیماری در استان ایلام، از نمونه های بالینی تیپیک بیماری نیوکاسل، نمونه برداری از مغز صورت پذیرفت. پس از هموژن نمودن نمونه مغز، از مایع رویی آن برای تزریق در تخم مرغ جنین دار ۹ روزه استفاده گردید. پس از پاساژ متوالی مایع آلانتوئیک جنین های تلف شده از روز دوم هر پاساژ جمع آوری و مورد آزمایش HA قرار گرفت. ویروس تکثیر شده با قابلیت هماگلوتیناسیون برای تایید هویت پارامیکسوویروسی آن با آنتی سرم ضد ویروس نیوکاسل در تست HI مورد آزمایش واقع شد. مایع آلانتوئیک حاوی ویروس برای استخراج RNA استفاده شد. سپس بخشی از ژنوم ویروس حاوی ناحیه پوشش دهنده محل شکافت پروتئین فیوژن که یک مارکر مولکولی برای پاتوتایپ های ولوژنیک است، به روش RT-PCR تکثیر کردید. امپلیکون حاصله توالی یابی نوکلئوتیدی گردید. براساس توالی های حاصله آنالیز فیلوژنتیک جهت تعیین ژنوتیپ انجام شد. فرآیند های جداسازی، استخراج، سنتز cDNA و واکنش زنجیره ای پلیمراز (RT-PCR) و تعیین توالی با موفقیت به انجام رسیده و هویت نیوکاسل ولوژنیک ویروس را تایید نمود. توالی اسید آمینه ناحیه شکافت پروتئین فیوژن -112 RRQKRF-117 بود. این توالی همانند همه پاتوتیپ های با حدت بالا، دارای بیش از دو اسید آمینه‌ی بازی در ناحیه‌ی فوق الذکر بود و اسید آمینه‌ی شماره‌ی ۱۱۷ آن نیز فنیل‌آلانین تشخیص داده شد. بر اساس آنالیز فیلوژنتیکی جدایه نیوکاسل ایلام متعلق به کلاس II و ژنوتیپ VII و تحت ژنوتیپ VIId بود.. در رسم درخت فیلوژنتیک ویروس نیوکاسل جدایه استان ایلام به همراه جدایه های خراسان و سمنان(دامغان) در کنار جدایه هایی ازکشورهای عربستان سعودی،کره جنوبی، چین،اندونزی، تایوان،که همگی متعلق به ژنوتیپ VII(عمدتا ژنوتیپ VIId) هستند، در یک ژنوتیپ یکسان (VII) قرار گرفت.براساس نتایج این پژوهش ژنوتیپ شایع در اپیدمی سال های اخیر ژنوتیپ VIId و شیوع آن در شرق و مرکز و غرب ایران می باشد که بیشترین تشابه را با جدایه هایی از عربستان سعودی و کشورهای آسیای جنوب شرقی دارا می باشد.این الگوی فیلوژنی می تواند مبین این باشدکه اپیدمی سال های اخیر در منطقه و ایران ممکن است با منشاء آسیای جنوب شرقی باشد. انجام مطالعات گسترده تر در سطح کشور و مقایسه با توالی های بیشتری در بانک های اطلاعاتی اطلاعات جامع تری را از منظر مولکولار در اپیدمیولوژی روشن خواهد ساخت.
کلمات کلیدی:ویروس نیوکاسل ،RT-PCR، ژن فیوژن، درخت فیلوژنتیک، ژنوتیپVIId، ایلام

بیهوشی و بی‌دردی در کلاغ از طریق تزریق داخل بینی با داروهای دیازپام، میدازولام و زایلازین همراه با کتامین: ارزیابی بالینی

عباس رئیسی[1*] ،مجید طاعتی[2] ، میلاد رستمی[3] ، الهام حاجی تبار[3] ، امیرحسین بیرقی[3]
۱گروه علوم درمانگاهی ، دانشکده دامپزشکی ، دانشگاه لرستان ، خرم آباد، ایران
۲ گروه علوم پایه ، دانشکده دامپزشکی ، دانشگاه لرستان ، خرم آباد، ایران
۳ دانشجوی دکترای حرفه ای دانشکده دامپزشکی ، دانشگاه لرستان، خرم آباد، ایران

بیهوشی استنشاقی و تزریقی محدودیت هایی برای استفاده در پرندگان دارند.تزریق داخل بینی داروهای بیهوشی به عنوان روشی مطمئن و موثر برای آرام بخشی و مقید سازی تعدادی از پرندگان و حیوانات دیگر استفاده شده است. هدف از این مطالعه مقایسه اثر آرام بخشی و بی دردی داروهای دیازپام ، میدازولام و زایلازین به همراه کتامین به روش داخل بینی در کلاغ بود. هفت کلاغ سالم و از دوجنس نر وماده با میانگین وزنی ۲۳۲/۵۴±۱۴/۵ گرم با داروهای دیازپام (۸ mg/kg) ، زایلازین (۸ mg/kg) ، میدازولام (۸ mg/kg) در ترکیب با کتامین (۳۰ mg/kg) با فاصله یک هفته ای بیهوش با این سه پروتکل شدند. زمان القاء ، مدت زمان قرار گرفتن پرنده به پشت و زمان برگشت کامل از بیهوشی و میزان کیفیت بیهوشی ثبت و آنالیز گردید. زمانهای القاء در کتامین- زایلازین ، کتامین – دیازپام و کتامین- میدازولام به ترتیب (۳/۶±۶/۶دقیقه)، (۰/۸۴±۲/۲دقیقه) و (۲/۹±۴دقیقه) بود.مدت زمان خوابیدن پرنده به پشت در کتامین- زایلازین ، کتامین – دیازپام و کتامین- میدازولام به ترتیب (۳۰/۳۴±۳۷/۶دقیقه)، (۱۲/۰۳±۲۷/۲دقیقه) و (۷/۱±۲۷/۴دقیقه) بود.زمان کامل برگشت از بیهوشی در این پروتکل های آزمایش (۸/۵±۱۸/۲دقیقه) برای کتامین- زایلازین ، (۱۲/۳۹±۳۰/۰دقیقه) برای کتامین- دیازپام و (۷/۵±۱۸/۲دقیقه) برای کتامین – میدازولام ثبت گردید. کیفیت بیهوشی در همه گروهها ۱۰۰٪ بود. این مطالعه نشان داد که استفاده از داروهای آرام بخشی زایلازین ، دیازپام و میدازولام در ترکیب با کتامین می تواند آرام بخشی قابل قبولی از روش تزریق داخل بینی در کلاغ ایجاد کند. هرچند که همه این پروتکل ها برای انجام عمل جراحی مناسب نیستند. پروتکلی برای بیهوشی مناسب می باشد که زمان القاء و برگشت از بیهوشی سریع و ملایم باشد.
کلمات کلیدی: بیهوشی ، داخل بینی ، زایلازین ، دیازپام ،میدازولام ، کلاغ

اولین گزارش آلودگی سارگپه (*Buteo buteo*) به شپش جونده *Laemobothrion maximum* در ایران

حمیدرضا شکرانی[*1]*، شهریار یاوری*[1]*، حسن نوروزیان*[2]*، عباس رئیسی*[2]*، میلاد رستمی*[3]
۱.گروه پاتوبیولوژی، دانشکده دامپزشکی، دانشگاه لرستان، ۲. گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه لرستان، ۳.دانشجوی دکتری دامپزشکی، دانشکده دامپزشکی، دانشگاه لرستان.
[*] نویسنده مسؤول: shokrani.hm@lu.ac.ir

اهداف:سارگپه (*Buteo buteo*)از پرندگان شکاری بوده پراکندگی جغرافیایی وسیعی در ایران دارد. طول پرنده بطور معمول ۵۷-۵۱ سانتیمتر است و طول بال‌های آن ۱۳۰-۱۱۰ سانتی‌متر است.در ایران مطالعات اندکی به منظورشناسایی گونه‌های شپش در پرندگان وحشی انجام شده است. این مطالعه بر روی ۲ قطعه سارگپه بالغ که جهت درمان به کلینیک دانشکده دامپزشکی دانشگاه لرستان ارجاع داده شده بودند انجام گردید.
مواد و روش‌ها:در بررسی اولیه تعدادی شپش بزرگ به طول حدوداً ۱ سانتی‌متر در سطح بدن پرندگان مشاهده شد. انگلها در تیوب‌های حاوی اتانول ۷۰ درجه نگهداری شدند. هر شپش با استفاده از پتاس ۱۰ درصد شفاف گردید و با استفاده از کانادا بالزام مونته گردید. سپس هر اسلاید به کمک میکروسکوپ نوری بررسی گردید.
یافته‌ها و نتیجه‌گیری:انگلهای مورد بررسی با توجه به اندازه و ویژگی‌های ریخت‌شناسی شپش جونده *Laemobothrion maximum* شناسایی شدند. شدت آلودگی به این شپش در هر دو پرنده اندک بود. گونه‌های شپش شناسایی شده از پرندگان وحشی در ایران بسیار محدود می باشند. با توجه به بررسی انجام شده مطالعه حاضر اولین گزارش آلودگی سارگپه(*Buteo buteo*) به *Laemobothrion maximum* است.
کلمات‌کلیدی: شپش‌های جونده،*Laemobothrion maximum* ، سارگپه، خرم‌آباد

بررسی فراوانی تأثیرات افزایش میانگین وزن جوجه های گوشتی با افزایش بیماریهای ناشی از آن در جمع آوری اطلاعات آماری معنی دار از قلب های حذفی کشتارگاه پر سنندج

سیّد میلاد باینچو[1]*، میلاد مرادی[1]، مجتبی توشمالانی[1]،لقمان اکرادی[2]، بهزادمیرزائی[3]
۱- دانشجوی سال آخر دکترای دامپزشکی، دانشگاه آزاد اسلامی سنندج، ۲- استادیار گروه پاتولوژِی دانشگاه آزاد اسلامی واحد سنندج
۳- فارغ التحصیل دکترای دامپزشکی، دانشگاه آزاد اسلامی سنندج
پست الکترونیک نویسنده مسوول: bayancho.377.b@gmail.com

توصیف بیمار- بیماریهای قلبی عروقی یکی از علل مهم مرگ و میر در ماکیان و بوقلمونهای گوشتی به شمار می روند.از آنجایی که بیماریهای قلبی عروقی معمولاً با رشد سریع همراه می باشند.عضله قلب به عنوان فعالترین عضو بدن، به عوامل سمی و کمبودهای تغذیه ای و متابولیک و عوامل عفونی حساس است. در قلب یک جوجه گوشتی طبیعی غالبا ۲ تا ۳ میلی لیتر مایع پریکارد، بدون هیچ گونه عارضه پاتولوژیک وجود دارد. گاهی، در سطح جلویی شکمی بطن چپ جوجه های گوشتی سالم وجود اپی کاردیت فیبروزه کانونی ممکن است به طور ثانویه در اثر ضربات ناشی از برخورد قلب با جناغ سینه در اثر ضربان آن ایجاد شده باشد که می تواند از دلایل حذف قلب در کشتارگاهها صنعتی طیور به شمار آید.
مواد و روش کار- در طی یک دوره سه ماهه از فروردین ۱۳۹۴ تا خرداد ماه ۱۳۹۴ در کشتارگاه پر سنندج از ۲۱۵۲۵ قلب مرغ گوشتی از ۱۰ مرغداری اطراف سنندج مورد بررسی قرار گرفت که جوجه های گوشتی از میانگین وزن ۱.۴۶ کیلوگرم تا ۳.۶۵ کیلوگرم مورد ارزیابی قرار گرفتند که به عنوان مثال از این میان موارد ضبطی گزارش شده در وزن ۱.۴۶ کیلوگرم ۱.۷ درصد از تعداد کل کشتار بود و نیز در وزن ۳.۶۵ کیلوگرم ۷.۲ درصد از تعداد کل کشتار گزارش گردید.
نتیجه و سر انجام- بین وزن گله و حذف قلب و لاشه های آن در کشتارگاه پر سنندج رابطه ای مستقیم وجود دارد، به این گونه که هرچه وزن گله پایین‌تر باشد میزان موارد ضبطی نیز کمتر خواهد بود. توجه به وزن گله در مرغداری‌ها باتوجه به داده‌های آماری داده شده؛ به هر میزان وزن میانگین پایین باشد از درگیری گله با بیماریهای قلبی عروقی کاسته شده و شاهد حذف لاشه کمتری در کشتارگاه خواهیم بود و از لحاظ اقتصادی مقرون به‌صرفه خواهد بود. با این وصف و آمار به‌دست آمده مرغداری‌ها باید جوجه‌های گوشتی را در وزن ۱.۴۶ کیلوگرم به کشتارگاه تحویل دهند.
کلید واژگان- قلب، وزن، جوجه های گوشتی، کشتارگاه، سنندج

بررسی فراوانی تأثیرات افزایش سن جوجه های گوشتی با افزایش بیماریهای قلبی عروقی و اهمیت آن از لحاظ اقتصادی در کشتارگاه پر سنندج

مجتبی توشمالانی[1]*، میلاد مرادی[1]، سیّد میلاد باینچو[1]، لقمان اکرادی[2]، بهزاد میرزائی[3]
۱- دانشجوی سال آخر دکترای دامپزشکی، دانشگاه آزاد اسلامی سنندج ، ۲- استادیار گروه پاتولوژِی دانشگاه آزاد اسلامی واحد سنندج
۳- فارغ التحصیل دکترای دامپزشکی، دانشگاه آزاد اسلامی سنندج
پست الکترونیک نویسنده مسوول: mdvm.t71@gmail.com

توصیف بیمار- قلب پرنده مخروطی شکل بوده، نسبت به قلب پستانداران بزرگتر، طویلتر و باریکتر است. بطن چپ قلب پرنده عمدتا از یک دیواره بسیار ضخیم و سنگین تشکیل شده حال آنکه این حالت در یک پستاندار حاکی از هیپرتروفی بطن می باشد. بدون در نظر گرفتن مشکلات اساسی، بیماری های قلبی باعث کاهش عبور جریان خون به عضله قلب و سایر عضلات بدن می شوند و هیپوکلسمی عضلات قلب ممکن است به تغییرات دژنراتیو عضله قلب بیانجامد که باعث نارسایی ورود و خروج خون و ناتوانی قلب در فعالیت خود شود و این امر می تواند مشکلات وبیماریهایی را به دنبال داشته و از دلایل اصلی حذف قلب و لاشه در کشتارگاههای صنعتی طیور به شمار آید.
مواد و روش کار- در طی یک دوره سه ماهه از فروردین ۱۳۹۴ تا خرداد ماه ۱۳۹۴ در کشتارگاه پر سنندج از ۲۱۵۲۵ قلب مرغ گوشتی از ۱۰ مرغداری اطراف سنندج مورد بررسی قرار گرفت که جوجه های گوشتی از سن ۴۶ روز تا ۶۰ روزگی مورد ارزیابی قرار گرفتند که به عنوان مثال از این میان موارد ضبطی گزارش شده در وزن ۴۶ روزگی ۱.۷ درصد از تعداد کل کشتار بود و نیز در وزن ۵۷ روزگی ۱۱.۶ درصد از تعداد کل کشتار گزارش گردید.
نتیجه و سر انجام- بین سن گله و حذف قلب و لاشه های آن در کشتارگاه پر سنندج رابطه ای مستقیم وجود دارد، به این گونه که هر چه وزن گله پایین تر باشد میزان موارد ضبطی نیز کمتر خواهد بود.توجه به سن گله در مرغداری ها با توجه به داده های آماری داده شده؛ به هر میزان سن گله پایین باشد از درگیری گله با بیماریهای قلبی عروقی کاسته شده و حذف کمتری صورت می گیرد و از لحاظ اقتصادی مقرون به صرفه تر خواهد بود. با این وصف و آمار به دست آمده مرغداری ها باید جوجه های گوشتی را در سن پایین به کشتارگاه تحویل دهند.
کلید واژگان- قلب، سن، جوجه های گوشتی، کشتارگاه، سنندج

بررسی اثر اسانس آویشن شیرازی بر زمان ماندگاری سینه مرغ بسته بندی شده تحت خلاء

سحر پیروز[۱] ، محمدرضا خانی[۲]*
۱- دانش آموخته دوره کارشناسی ارشد، گروه علوم و صنایع غذایی، دانشگاه آزاد اسلامی واحد شهر قدس، تهران، ایران
۲- استادیار گروه علوم و صنایع غذایی، دانشگاه آزاد اسلامی واحد شهر قدس، تهران، ایران
* ایمیل نویسنده مسؤول : khanidvm@gmail.com

اهداف: گوشت مرغ یک ماده غذایی بسیار محبوب در سراسر جهان است و مصرف آن در دهه های گذشته در بسیاری از کشورها افزایش یافته است. بنابراین بایستی تلاش هایی جهت جلوگیری از فساد میکروبی، شیمیایی و همچنین حفظ کیفیت و افزایش زمان ماندگاری گوشت اعمال شود. این مطالعه با هدف تعیین فعالیت ضد باکتریایی و آنتی اکسیدانی اسانس آویشن بر روی سینه مرغ بسته بندی شده تحت خلاء، به منظور بهبود ماندگاری و کیفیت حسی گوشت مرغ انجام شد.
مواد و روش کار: اسانس آویشن شیرازی در دو سطح غلظتی ۰/۱ و ۰/۳ درصد حجم به وزن تهیه و به نمونه های سینه مرغ افزوده و ماساژ داده شد. سپس نمونه ها تحت خلاء بسته بندی و در دمای یخچالی ۴ درجه سانتیگراد به مدت ۱۲ روز نگهداری شدند. همچنین دو نمونه کنترل بدون افزودن اسانس تهیه شد که یکی از آنها تحت خلاء و دیگری تحت اتمسفر معمولی بسته بندی گردید و در همان شرایط فوق نگهداری شدند. بررسی اثر ترکیبی اسانس آویشن و بسته بندی تحت خلاء روی پایداری سینه های مرغ با انجام آزمونهای میکروبی (شامل شمارش باکتریایی کلی، باکتریهای سرمادوست و اشریشیاکلی)، آزمونهای فیزیکوشیمیایی (شامل pH، تیوباربیتوریک اسید و رنگ سنجی) و ارزیابی حسی آنها در طی روزهای مختلف نگهداری (روزهای ۰، ۳، ۶، ۹ و ۱۲) مورد آزمایش و مقایسه قرار گرفت.
نتایج و بحث: نتایج نشان داد که اسانس آویشن باعث کاهش شمارش کلی باکتریایی و باکتریهای سرمادوست شد که این اثر در غلظت بالاتر اسانس به طور معنی داری افزایش یافت ($P<0/05$). همچنین اثر اسانس آویشن در جلوگیری از رشد اشریشیاکلی در نمونه های حاوی اسانس معنی دار و قابل توجه بود. مشخص گردید که اختلاف معنی داری نیز بین ویژگیهای فیزیکوشیمیایی نمونه های تیمار شده با اسانس آویشن در مقایسه با نمونه کنترل وجود دارد و کمترین شاخصهای TBA در طی زمان نگهداری به ترتیب در نمونه حاوی ۰/۳ درصد اسانس و نمونه کنترل بسته بندی شده در خلاء بدست آمد. نتایج رنگ سنجی و ارزیابی حسی در بین نمونه ها و در روزهای مختلف معنی دار بود ($P<0/05$) و اثر غلظت بالای اسانس آویشن در برخی ویژگی های حسی نظیر طعم و بو چندان رضایت بخش نبود. در نهایت می توان نتیجه گیری نمود که بهره گیری از غلظت ۰/۳ درصد اسانس آویشن در سینه مرغ می تواند در مقایسه با بسته بندی به تنهایی سبب افزایش ۲ تا ۳ روزه زمان ماندگاری در دمای ۴ درجه سانتیگراد شود.
واژه های کلیدی: سینه مرغ، اسانس آویشن ، بسته بندی تحت خلاء، زمان ماندگاری، ویژگیهای باکتریایی و فیزیکوشیمیایی

تشخیص مولکولی و درمان موفقیت آمیز *کلامیدیا پسیتاسی*(ژنوتیپ B) در یک مورد طوطی خاکستری آفریقایی کنگویی(*پسیتاکوس اریتاکوس اریتاکوس*)

افشاری ا[۱]، رجبیون م[۲]، زعیمی م[۲]، رزمیار ج[۲]
۱ گروه تغذیه، دانشکده پزشکی، دانشگاه علوم پزشکی مشهد، مشهد، ایران
۲ گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه فردوسی مشهد، مشهد، ایران

کلامیدیوزیس پرندگان توسط *کلامیدیا پسیتاسی* و با بالاترین میزان بیماری در طوطی سانان (*Psittacidae*) و کبوتر سانان (*Columbiformes*) ایجاد می شود. یک مورد طوطی خاکستری آفریقایی کنگویی ۲ ساله به علت بی اشتهایی، افسردگی، اسهال و سختی در تنفس خفیف مورد معاینه قرار گرفت. با توجه به یافته های بالینی و آزمایشگاهی، بیمار به منظور وجود *کلامیدیا پسیتاسی* مورد ارزیابی قرار گرفت. سوآب تهیه شده از شکاف کامی و کلوآک در PCR تشخیصی (۶۰۰جفت باز) مثبت بود. محصول PCR با PCR بر پایه ژن *ompA* و با استفاده از پرایمر های CTU/CTL (۱۰۵۰ جفت بازمحصول PCR) مشخص گردید. توالی محصول PCR با سکانس به دست آمده از بانک ژنی مقایسه شد. درخت فیلوژنتیکی به دست آمده شباهت ۱۰۰٪ با ژنوتیپ B به دست آمده از مطالعات قبلی را نشان می داد. پرنده بستری شده و درمان به مدت ۴۵ روز با داکسی سایکلین و نمونه برداری هفتگی به منظور تعیین حضور DNA *کلامیدیا پسیتاسی* در نمونه مدفوع و شکاف کامی انجام شد. نتایج آزمایشگاهی و رادیولوژی نیز پس از درمان در رنج طبیعی قرار داشتند. ژنوتیپ B به طور اولیه از خانواده *Clumbidea* (فاخته وکبوتر) جدا شده و گزارشات کمی از طوطی های مبتلا به این ژنوتیپ وجود دارد. بنا بر دانش ما، این اولین گزارش از جداسازی ژنوتیپ B از طوطی خاکستری آفریقایی کنگویی در ایران می باشد.
کلید واژگان: کلامیدیوزیس پرندگان، طوطی خاکستری آفریقایی کونگویی، ژنوتیپ B، ژن *ompA*، *PCR*

اثر وزن بدن بر بیان ژن‌های PPARsدر لایه ی گرانولوزای فولیکول F1درمرغ‌های مادر گوشتی

نیلوفر توانگر راد، حسین حسن پور، علی کدیور، اردشیر شیخ احمدی

گیرنده‌های فعال شده با تکثیرکننده‌ی پروکسیزومPeroxisome proliferator-activated receptorsخانواده‌ای از گیرنده‌های داخل هسته ای هستند که شامل PPARβ/δ, PPARα و PPAR می‌باشد. به PPARs عملکردهای بی‌شماری در بخش‌های مختلف بدن پستانداران و پرندگان از جمله دستگاه تناسلی نسبت داده شده است. در این پژوهش بیان ژنی PPARs در سلول‌های لایه‌ی گرانولوزای فولیکول F1 مرغ‌های مادر گوشتی چاق و لاغر درگیر اختلالات تخمگذاری، از طریق real time PCR کمی مورد ارزیابی قرار گرفت. مرغ‌های سن ۳۰ هفته به مدت ۳۰ روز به ۳ گروه با ۳ سطح غذایی مختلف: (F1) شاهد، (F1-20%) مصرف غذای ۲۰ درصد کمتر از گروه شاهد و (F1+40%) مصرف غذای ۴۰ درصد بیشتر از گروه شاهد، با ۳ تکرار در هر گروه (۱۰ پرنده در هر تکرار و ۳۰ پرنده در هر گروه) تقسیم شدند. تولید تخم مرغ در دو گروه تیمار نسبت به گروه شاهد به میزان معنی‌داری ($P<0.05$)کاهش یافت. بیان ژن‌های PPARα و PPARβ/δ در فولیکول F1 بین گروه‌های مختلف و از طریق آزمایش real time PCRتغییر معنی‌داری نشان نداد اما بیان ژن PPAR در گروه F1+40% به میزان معنی‌داری کاهش یافته و در گروه F1+20% در مقایسه با گروه شاهد تغییری نداشت. نتیجه گیری می‌شود که افزایش مصرف غذا منجر به کاهش تخم گذاری و کاهش بیان ژن PPARγ می‌شود اما بیان ژن‌های PPARα و PPARβ/δ را تغییر نمی‌دهد. کاهش سطح mRNA ژن PPARγ در فولیکول F1 مرغ‌های مادر گوشتی شاهدی بر دخالت این گیرنده در اختلالات ناشی از مصرف زیاد غذا است.

واژگان کلیدی: گیرنده‌های فعال شده با تکثیر کننده پروکسیزوم، سلول‌های گرانولوزا، مصرف غذا، مرغ مادر گوشتی

بررسی تاثیر اندازه فیزیکی سدیم زئولیت A بر سلامت و شاخص‌های رشد جوجه‌های گوشتی تغذیه شده با جیره‌های آلوده به آفلاتوکسین

بهمن پریزادیان کاوان[۱] (نویسنده مسؤول)، محمود شمس شرق[۲]
[۱]استادیار گروه علوم دامی، دانشگاه لرستان، [۲]دانشیار دانشگاه علوم کشاورزی و منابع طبیعی گرگان
پست الکترونیکی: Parizadian.b@lu.ac.ir

هدف: این آزمایش با هدف ارزیابی شاخص‌های سلامت و رشد جوجه‌های گوشتی تغذیه شده با جیره‌های آلوده به آفلاتوکسین مکمل‌سازی شده با سدیم زئولیت A انجام شد. مواد و روش ها: ۵۱۲ جوجه گوشتی راس ۳۰۸ با سن ۷ روز به‌طور تصادفی به ۸ گروه آزمایشی تقسیم شدند. جیره غذایی پرندگان با استفاده از آفلاتوکسین (۱ میلی‌گرم در کیلوگرم) آلوده شد و اثر تیمارها که شامل سطوح (۱/۵ و ۳ درصد) و اندازه‌های متفاوت (کوچکتر از ۲۵۰ میکرومتر، ۰/۴ تا ۰/۸ میلی‌متر و ۱ تا ۲ میلی‌متر) سدیم زئولیت A بودند، ارزیابی گردید. نتایج و بحث: بر اساس نتایج آزمایش، بیشترین افزایش وزن بدن و بهترین ضریب تبدیل غذایی در پرندگان تغذیه شده با جیره‌های غیرآلوده به آفلاتوکسین حاصل شد و کمترین وزن بدن و بدترین ضریب تبدیل غذایی در پرندگان تغذیه شده با جیره‌های آلوده به آفلاتوکسین مشاهده گردید. استفاده از سدیم زئولیت A (۳ درصد) با اندازه فیزیکی ۱-۲ میلی‌متر، وزن بدن را در مقایسه با گروه تغذیه شده با جیره حاوی آفلاتوکسین بهبود داد. جوجه‌های تغذیه شده با جیره‌های غیرآلوده به آفلاتوکسین بیشترین بازدهی انرژی و پروتئین را نشان دادند و کمترین راندمان انرژی و پروتئین در گروه تغذیه شده با جیره حاوی آفلاتوکسین مشاهده شد. بیشترین و کمترین درصد کبد به ترتیب در پرندگان تغذیه شده با جیره‌های آلوده به آفلاتوکسین و گروه دریافت کننده جیره غیرآلوده به آفلاتوکسین مشاهده گردید. آفلاتوکسین سبب افزایش معنی‌دار سطح آنزیم‌های کبدی آسپارتات ترانس‌آمیناز و آلکالین فسفاتاز شد. استفاده از سدیم زئولیت A میزان آنزیم کبدی آلکالین فسفاتاز را در پرندگان تغذیه شده با جیره‌های آلوده به آفلاتوکسین کاهش داد. آفلاتوکسین سبب کاهس مقدار خاکستر استخوان درشت‌نی جوجه‌های گوشتی شد. با توجه به نتایج می‌توان بیان کرد که افزودن سدیم زئولیت A به جیره‌های آلوده به آفلاتوکسین موجب بهبود رشد و سلامت کبد جوجه‌های گوشتی می‌شود.

کلمات کلیدی: جوجه‌های گوشتی، کلینوپتیلولیت، سدیم زئولیت A،آفلاتوکسین

بررسی اثرات مانان الیگوساکارید بر عملکرد، مورفولوژی روده و فلور میکروبی روده کور جوجه‌های گوشتی

محمد مهدی نجاری[۱]،هادی میرانزاده[۲]،کمال شجاعیان[۱]

۱- گروه علوم دامی دانشگاه زابل

۲- دانشگاه جامع علمی کاربردی مرکز تحقیقات آموزش ومنابع طبیعی اصفهان

miranzadeh2@hotmail.com*

در این مطالعه اثرات مانان الیگوساکارید را بر عملکرد رشد، پارامترهای خونی، مورفولوژی روده و فلور میکروبی روده کور جوجه‌های گوشتی ارزیابی شد. در این آزمایش از ۵۶۰ قطعه جوجه گوشتی نر یکروزه سویه راس ۳۰۸استفاده شد. این آزمایش در قالب طرح کاملاً تصادفی و با ۷ تیمار و ۴ تکرار برای هر تیمار انجام شد. تیمارهای مورد استفاده در این تحقیق شامل تیمار شاهد، تیمار کنترل مثبت(حاوی ۰/۰۲ گرم در کیلوگرم آنتی بیوتیک ویرجینیامایسین) و پنج سطح مکمل سازی مانان(۰/۵، ۱، ۱/۵، ۲ و ۲/۵ گرم در کیلوگرم) به جیره شاهد بود. در پایان آزمایش مشاهده شد،که جوجه های تغذیه شده با جیره‌های حاوی مانان در سنین ۲۱ و ۴۲ روزگی به طور معنی داری سنگین‌تر از سایر تیمارها بودند. علاوه بر این ضریب تبدیل غذایی به طور معنی داری در سنین ۲۱-۱ و ۴۲-۱روزگی تحت تاثیر مکمل سازی مانان قرار گرفته بود.وزن ماهیچه ران وسینه و همچنین وزن پانکراس و سنگدان به طور معنی داری تحت تاثیر مکمل سازی جیره‌ها قرا نگرفته بود. هر چند بازده لاشه، وزن کبد و روده باریک به طور معنی داری در جوجه‌های تغذیه شده با جیره‌های حاوی مانان افزایش یافته بود. سطوح کلسترول *HDL* تحت تاثیر مکمل سازی مانان قرار نگرفته بود ولی در مقابل سطوح کلسترول *LDL*، کلسترول کل و تری گلیسیرید در پلاسمای خون جوجه‌های تغذیه شده با تیمارهای حاوی مانان به طور چشمگیری کاهش یافته بود.ارتفاع پرزها و همچنین نسبت ارتفاع پرز به عمق کریپت روده باریک جوجه های تغذیه شده با تیمارهای حاوی مانان به طور معنی داری افزایش یافته بود. ولی مکمل سازی مانان هیچ تاثیری بر عمق کریپت نداشت. علاوه بر این pH محتویات هضمی ایلئوم به طور معنی داری در جوجه های تغذیه شده با مانان افزایش یاقته بود، ولی مکمل سازی تاثیری بر pH محتویات هضمی روده کور نداشت. جمعیت اشریشیاکلی و کلستریدیوم محتویات روده کور جوجه‌های تغذیه شده مانان به طور چشمگیری نسبت به تیمار شاهد کاهش یافته بود. همچنین مکمل سازی مانان باعث افزایش معنی دار جمعیت لاکتوباسیلوس‌های محتویات روده کور جوجه‌ها نسبت به تیمار شاهد شد.

لغات کلیدی: مکمل مانان اولیگو ساکارید،جوجه گوشتی، فلور روده کور،اشریشیا کلی

توزیع پروتئین های اصلی غشای خارجی در میان پاستورلا مولتوسیدا جدا شده از طیور در ایران

زینب بابایی[۱]،احمد رضا جباری[۲]،مجید اسمعیلی زاد[۳]*

۱- دانشجوی کارشناسی ارشد بیوتکنولوژی گرایش میکروبی دانشگاه آزاد اسلامی تهران شرق، ۲- دانشیار موسسه تحقیقات و سرم سازی رازی، کرج، ایران ، ۳-استادیارموسسه تحقیقات و سرم سازی رازی ،کرج ،ایران

آدرس نویسنده مسؤول: a.jabbari@rvsri.ac.ir

چکیده :باکتری گرم منفی پاستورلا مولتوسیدا مسؤول عفونت اقتصادی قابل توجهی در طیف گسترده ای از گونه های جانوری است . این ارگانیسم انواع بیماری ها و سندرم ها که شامل وبا مرغان، پنومونی نشخوارکنندگان و خوک، رینیت آتروفیک پیشرونده خوک (PAR)و سپتی سمی هموراژیک گاوی(HS) را سبب میشود.

بیماریزایی پاستورلامولتوسیدا با عوامل مختلف بیماریزایی شامل آدهسین ها (ptfA، fimA، hsf-1، hsf-2، pfhA، tadD)، نوروآمینیدازها (nanB، nanH)، عوامل مرتبط کسب آهن (exBD، tonB، fur، tbpA ، hgbA، hgbB)، سوپر اکساید دیسموتازها (sodA، sodC)، درمونکروتوکسین ها (toxA) و هیالورونیداز (pmHAS) و پروتئین های پورین غشای خارجی همراه میباشد.

هدف از این مطالعه شناسایی حضور ژن های کد کننده پروتئین های اصلی غشای خارجی شامل ompA، oma87، plpBو plpE در پاستورلا مولتوسیدا جدا شده از طیور بود.تعداد ۳۰جدایه پاستورلا مولتو سیدا به دست آمده از موارد پاستورلوزپرندگان در این مطالعه استفاده شد .تمام جدایه ها به روشPM-PCR با استفاده از پرایمرهای اختصاصی، KMT1به عنوان پاستورلا مولتوسیدا شناخته شدند.

براساس روش مولکولی تعیین تیپ کپسولی، تمام جدایه ها متعلق به نوع A تشخیص داده شدند. فراوانی چهار ژن مهم پروتئین های غشای خارجی شامل ompA، oma87،plpB،PlpE، مورد بررسی قرار گرفت .همه نمونه ها(۱۰۰٪) ژن های پروتئین غشاء خارجی ompA، oma87وplpBرا دارا بودندبا این حال، فراوانی حضور ژن plpE در میان پاستورلا مولتو سیدا جدا شده (۶۷٪) بود.

نتایج حاصل از این مطالعه نشان داد که پاستورلا مولتوسیداهایی که از پرندگان جدا شده بودندارای مهم ترین ژن های غشاء خارجی شناخته شده به عنوان عوامل لازم برای بیماریزایی ارگانیسم هستند.نقش پروتئین های اصلی غشای خارجی در پاتوژنز و ایمنی زاییپاستورلا مولتوسیدا نشان داده شده است .یافته های این مطالعه برای تهیه واکسن نوترکیب تحت واحد مناسب از جدایه های بومی در برابر پاستورلوز پرندگان کاربرد خواهد داشت.

بررسی سرولوژیک و ردیابی مولکولی ویروس های عامل آنفلوانزا (H9N2)، نیوکاسل و برونشیت عفونی درماکیان بومی منطقه اهواز

زهرا برومند[۱]، رمضانعلی جعفری[۲] و منصور میاحی[۳]

۱- استادیار بخش طیورگروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز

۲- دانشیار بخش طیورگروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز

۳- استاد بخش طیورگروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز

ویروس‌های آنفلوانزای پرندگان، برونشیت عفونی و نیوکاسل از مهم‌ترین عوامل بیماریزای طیور محسوب می شوند. هدف از این مطالعه مشخص کردن حضور ویروس‌های مذکور در ماکیان بومی منطقه اهواز بود. بدین منظور، تعداد ۱۰۰ مرغ با نشانه‌های تنفسی که به صورت سنتی در حیاط خانه‌ها نگهداری می شدند با تهیه نمونه خون و نیز سوآب از نای و کلوآک مورد بررسی قرار گرفتند. در تاریخچه، ۲۷٪ آن‌ها واکسن کشته نیوکاسل-آنفلوانزا را دریافت کرده بودند، اما هیچکدام در برابر برونشیت عفونی واکسینه نشده بودند. سرم¬های جمع آوری شده به وسیله آزمایش الیزا از نظر پادتن ضد برونشیت عفونی، و آزمایش مهار هماگلوتیناسیون از نظر پادتن ضد آنفلوانزا و نیوکاسل ارزیابی شدند. سوآب¬های نای و کلوآکی نیز در بررسی مولکولی با آزمایش زنجیره پلیمراز با نسخه برداری معکوس استفاده شدند. نتایج نشان داد که در آزمایش سرولوژیک، ۴۵٪ پرندگان برای ویروس آنفلوانزا،۷۷٪ برای ویروس نیوکاسل و ۳۸/۴ ٪ برای ویروس برونشیت عفونی مثبت بودند. در PCR ، ۹۵ درصد پرندگان در بررسی مولکولی به یکی از سه ویروس آلوده بودند. میزان ردیابی ویروس های آنفلونزا، نیوکاسل و برونشیت عفونی به ترتیب ۳۴٪، ۶۰٪ و ۵۵٪ بود همچنین آلودگی هم زمان به ویروس های آنفلونزا و نیوکاسل در ۱۳٪، به ویروس های آنفلوانزا و برونشیت عفونی در ۴٪، به ویروس های نیوکاسل و برونشیت در ۲۳٪ و به هر سه ویروس در ۷٪ پرندگان مشاهده شد. چنین نتیجه گیری می شود که ماکیان بومی منطقه اهواز مخزن مهم ویروس¬های بیماریزای پرندگان بوده و می توانند در انتقال آن¬ها به پرندگان صنعتی نقش داشته باشند

بررسی تیتر انتی بادی HI انفلوانزا(H9N2) درجوجه های گوشتی استان مازندران.

سینا فریدونی[۱] ، سعید شاطری[۲] ، سید علی حسینی علی آباد[۳]

۱. فارغ التحصیل دکتری دامپزشکی، ، دانشکده دامپزشکی، دانشگاه آزاد اسلامی، واحد بابل، بابل، ایران

۲. گروه بیماریهای پرندگان، دانشکده دامپزشکی، دانشگاه آزاد اسلامی، واحد بابل، ایران

۳. گروه دامپزشکی، دانشکده کشاورزی، دانشگاه آزاد اسلامی، چالوس، ایران

مسؤول ایمیل نویسنده: sina.f@outlook.com

بیماری آنفلوآنزای طیور یکی از مهمترین بیماری های صنعت طیور ایران و جهان است. بیماری آنفلوآنزا در حیوانات در اثر ویروس های آنفلـوآنزای تیپ A ایجاد می شود. تاکنون ۱۶ تحت تیپ هماگلوتینین (HA) و ۹ تحت تیپ نورآمینیداز (NA) شناسایی شده است. ایـن ویـروس هـا بـه دو پاتوتیپ بسیار بیماری زا (HPAI) و با بیماری زایی کم (LPAI) تقسیم بندی می گردند. از سال ۱۹۹۸ صـنعت طیـور کشـور درگیـر آنفلـوآنزای تیپ A، تحت تیپ H_9N_2 و پاتوتیپ LPAI می باشد. با توجه به اهمیت واکسیناسیون و تقویت سیستم ایمنی در پیشگیری از بیماری آنفلـوآنزا در این مطالعه تیتر آنتی بادی HI آنفلوآنزا در مرغداری‌های گوشتی مازندران که واکسن کشـته را در ۱روزگـی و ۷ روزگـی مصـرف نمـوده انـد و همچنین مرغداری های گوشتی که واکسن مصرف نمی کنند مورد بررسی قرار گرفت. نتایج بدست آمـده از ایـن بررسـی پـس از تجزیـه و تحلیـل آماری با نرم افزار SAS و روش چند دامنه‌ای دانکن نشان می‌دهد که تیتر آنتی‌بادی در گله‌هایی که واکسن کشته روغنی را در ۷ روزگـی مصـرف نموده اند نسبت به گله هایی که در ۱ روزگی مصرف نموده اند بیشتر بود و تفاوت از نظر آماری نیز معنی‌دار بوده است.

مطالعه پلی مورفیسم در ساختار ژن TonB در جدایه های طیوری *پاستورلا مولتوسیدا*

مطهره فیض آبادی فراهانی، مجید اسماعیل زاده، احمدرضا جباری

آهن یک عنصر اساسی است که تقریبا برای همه ی سلول های زنده مورد نیاز است. سلول های باکتری مکانیزم های مختلفی برای جذب این عنصر استفاده می کنند. بسته به نوع میزبان، باکتری می تواند از هر کدام از روش های سایدروفورها و پروتئین های غشاء خارجی یا هر دو این روش ها برای جمع آوری این عنصر از محیط و مولکول های اتصالی آهن مثل transferrin, lactoferrin, heme, ferritinghemoglotion استفاده کند.انتقال آهن به سلول باکتری با هر کدام از این سیستم های کارآمد نیازمند ژن TonB، که به سیتوپلاسم و غشاء خارجی متصل می شود، بدین طریق قادر می سازد به انتقال انرژی لازم برای این روند. وبای طیور، که توسط پاستورلامولتوسیدا ایجاد می شود، به عنوان یک بیماری باکتریایی با اهمیت بالای اقتصادی به دلیل مرگ و میر بالای ناشی از آن شناخته می شود، عامل مذکوز از کمپلکس exB-D-TonB برای انتقال آهن به سلول باکتری استفاده می نماید.

در این مطالعه سی ایزوله پاستورلامولتوسیدا موجود در آزمایشگاه ملی تحقیقات پاستورلا در موسسه رازی، جمع آوری شده از استان های شمالی(گیلان و مازندران)ایران، به منظور دسته بندی آنها بر اساس گروه های ژنوتایپی از نظر ژن TonBبررسی شدند.

روش مولکولیPM-PCR برای شناسایی ایزوله های پاستورلامولتوسیدا و روش PCR اختصاصی برای حضور ژن TonB در بین ایزوله استفاده گردید. برای طبقه بندی ژنوتایپی ایزوله ها بر اساس تفاوت سایز ژن TonB سنتز شده از ژل پلی اکریل آماید استفاده گردید. نتایج این مطالعه حضور ژن TonB بین تمامی ایزوله ها را نشان داد(۱۰۰). آنها به ۵ ژنوتایپ(پلی مورف) طبقه بندی شدند. حضور، الگو و فراوانی هر ژنوتایپ TonB می تواند برای فهم بهتر نقش این ژن در بیماری زایی مفید باشد و ما را در انتخاب روش های بهتر برای ارتقای قابلیت واکسن علیه پاستورلوز طیور هدایت نماید.

واژگان کلیدی: کسب آهن، ژنTonB، پاستورلا مولتوسیدا، وبای طیور، واکسن

آنالیز فیلوژنیک بخشی از ژن پروتئین فیوژن سه ویروس نیوکاسل جدا شده از گله های طیور گوشتی اهواز بین سال-های ۲۰۱۲ تا ۲۰۱۳

زهرا برومند[۱]، رمضانعلی جعفری[۲] و منصور میاحی[۳]

۱- استادیار بخش طیورگروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز

۲- دانشیار بخش طیورگروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز

۳- استاد بخش طیورگروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز

بیماری نیوکاسل یک بیماری ویروسی عفونی، به شدت واگیردار و بیماری زا در پرندگان است. فرم حاد بیماری نیوکاسل از نظر اقتصادی اثرات زیان باری در جهان بر صنعت طیور دارد. در بسیاری از کشورهای در حال توسعه به صورت آندمیک وجود دارد، بنابراین یک عامل محدود کننده مهم در توسعه صنعت طیور می باشد. دراین مطالعه سه ویروس نیوکاسل جدا شده ازگله های آلوده واکسینه با تلفات بالا مورد شناسایی ملکولی قرار گرفتند. در این مطالعه بخشی از توالی ژن F بدست آمده از جوجه‌های واکسینه با تلفات بالا مورد بررسی قرار گرفت و با سایر ویروس‌های نیوکاسل مقایسه شد. پس از مقایسه اسیدهای آمینه در منطقه شکاف پروتئین F ویروس های شناسایی شده با سویه های استاندرد حاد و کم حدت ویروس نیوکاسل مشخص گردید که ویرو س های موجود در نمونه های تحت مطالعه از سویه های حاد ویروس نیوکاسل می باشند و ترتیب اسیدهای آمینه آنها در منطقه شکاف پروتئین F به‌صورت 112 RRQKRF117 می‌باشد. آنالیز فیلوژنی سویه های شناسایی شده در این مطالعه قرابت ژنومی نزدیکی را با سایر جدایه‌های حاد ویروس نیوکاسل جدا شده از ایران دارد و در ژنوتیپ VIId از کلاس II قرار گرفت.

کلمات کلیدی: نیوکاسل، پروتئین فیوژن، فیلوژنی، اهواز

بررسی ایمنی‌زایی واکسن‌های زنده و کشته ویروس گامبورو به‌صورت مجزا یا ترکیبی در جوجه‌های گوشتی

زهرا برومند[۱]، رمضانعلی جعفری[۲]، فروغ مکی[۳]

۱- استادیار بهداشت و بیماری‌های طیور، دانشکده دامپزشکی دانشگاه شهید چمران اهواز

۲- دانشیار بهداشت و بیماری‌های طیور، دانشکده دامپزشکی دانشگاه شهید چمران اهواز

۳- دانشجوی دکترای دانشکده دامپزشکی دانشگاه شهید چمران اهواز

بیماری بورس عفونی یک بیماری مهلک است که توسط یک *بیرناویروس* ایجاد می‌شود.واکسیناسیون یکی از راه‌های مؤثر پیشگیری می‌باشد.به‌طور معمول دو نوع واکسن(زنده و کشته) برای ایمنی استفاده می‌شود.در مطالعه حاضر واکسن زنده و کشته گامبورو در جوجه‌های گوشتی مورد مقایسه قرار گرفت. ۲۷۰ قطعه جوجه گوشتی یک روزه در ۶ گروه هم وزن (A-F)تقسیم شدند: گروه A با واکسن زنده D78 به‌صورت خوراکی در روز ۱۹ واکسینه شد. گروه B واکسن‌های کشته و زنده را به ترتیب در روزهای ۳ و ۱۹ دریافت کرد. گروه C با واکسن‌های کشته و زنده به‌ترتیب در روزهای ۹ و ۱۹ واکسینه شد. گروه‌های D و E واکسن کشته را به‌ترتیب در روزهای ۳ و ۹ دریافت کردند. گروه F به عنوان گروه شاهد هیچ واکسنی دریافت نکرد. از هر گروه ۳ جوجه در ۳ روزگی و ۱۵ جوجه در روزهای ۱۹، ۲۶، ۳۳ و ۴۲ روزگی خونگیری شدند. سرم‌های حاصل به منظور ارزیابی پادتن ضد بیماری گامبورو مورد آزمایش الایزا قرار گرفتند. در ۴۲ روزگی، ۶ جوجه از هر گروه آزمایشی به صورت تصادفی انتخاب و به طور انفرادی وزن‌کشی و کشته شدند. بورس فابریسیوس و طحال به‌جهت محاسبه نسبت وزن‌شان به وزن زنده بدن وزن کشی شدند.اختلافات سطح سرمی پادتن در تمامی گروه‌ها در سنین ۳ و ۱۹ روزگی معنی‌دار نیست ($P>0/05$). سطح سرمی پادتن در گروه‌های B و D در سن ۲۶ روزگی از گروه F به‌طور معنی‌داری بیشتر است ($P<0/05$) اما اختلاف بقیه گروه‌ها در این روز معنی‌دار نیست ($P>0/05$). سطح سرمی پادتن در روزهای ۳۳ و ۴۲ در تمام گروه‌ها (به‌جز گروه‌های D و E در ۴۲ روزگی) معنی‌دار است ($P<0/05$). دررابطه با محاسبه نسبت وزن بورس فابریسیوس و وزن طحال به وزن بدن، بین هیچ یک از گروه‌ها اختلاف معنی‌داری مشاهده نشد ($P>0/05$). درنهایت بهترین نتیجه در گروه‌های با دریافت واکسن کشته و زنده حاصل شد. تأثیر ترکیب واکسن کشته و زنده بالاتر از واکسن زنده و کشته به تنهایی بود. بالاترین عیارهای پادتن در-حالی که واکسن زنده بعد از واکسن کشته استفاده شد، بدست آمد.

کلمات کلیدی: بیماری بورس عفونی، عیار پادتن، واکسن زنده و کشته، ایمنی خونی

آنالیز فیلوژنیک بخشی از ژن پروتئین هماگلوتینین سه ویروس آنفلوانزای پرندگان H9N2 جدا شده از گله های طیور گوشتی اهواز بین سال‌های ۲۰۱۱ تا ۲۰۱۳

زهرا برومند[۱]، ،رمضانعلی جعفری[۲]و منصور میاحی[۳]

۱- استادیار بخش طیورگروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز

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۳- استاد بخش طیورگروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز

صنعت طیورکشورایران ازسال ۱۳۷۷ درگیربیماری آنفلوانزای پرندگان می باشد .بروز بیماری باتلفات بالااین تصوررا ایجاد کرده است که ویروس آنفلوانزا در سطح مزرعه دچارتغییرات ژنتیکی شده است .دراین مطالعه سه ویروس آنفلوانزای طیور (H9N2) جدا شده ازگله های آلوده با تلفات بالا مورد شناسایی ملکولی قرار گرفتند .قطعه ۴۸۸ جفت باز در این ویروسها که در برگیرنده بخش میانی ژنوم پروتئین هماگلوتینین بود به روش RT-PCR تکثیر و سپس تعیین توالی نوکلئوتید انجام گرفت. آنالیز نوکلئوتیدها و اسیدهای آمینه نشان دهنده وجود سه ویروس بسیار شبیه به یکدیگر ولی متمایز از همدیگر بود. آنالیز فیلوژنی ۴۸۸ جفت‌باز محصولات گزارش شده از سایر نقاط جهان نشان داد، ویروس های آنفلوانزای طیور ایران رابطه بسیار نزدیکی با یکدیگر داشته و به احتمال فراوان دارای منشاء یکسانند .بیشترین قرابت ژنتیکی این ویروسها به ترتیب با ویروس‌های آنفلوانزای طیور کشورهند، تونس، اسرائیل، عراق و امارات متحده عربی بود.نتایج این مطالعه نشان داد که علیرغم بروز تلفات زیاد در سطح مزرعه، ویروسهای آنفلوانزای گزارش شده از سایر کشورهای اروپائی و آسیائی تغییرات ژنتیکی در ژن هماگلوتینین یک ویژگی مهم در ویروس های آنفلوانزا می باشد.

واژگان کلیدی: ویروس آنفلوانزا ، پروتئین هماگلوتینین، H9N2 ،آنالیز فیلوژنی

اثرات مقایسه ایی ساکارومایسس سرویسیه وآنتی بیوتیک محرک رشد بر روی ریخت شناسی روده کوچک در جوجه های گوشتی

مهدی هدایتی، میلاد منافی
استادیار گروه علوم دامی، دانشکده کشاورزی، دانشگاه ملایر
نویسنده مسؤول : mahvet77@gmail.com

یکی از روش های جایگزین آنتی بیوتیک محرک رشد در دان جوجه های گوشتی به کارگیری پروبیوتیک می باشد که پروبیوتیک حاوی ساکارومایسس سرویسیه با اثر گذاری بر ریخت شناسی روده کوچک بررسی شده است. برای این بررسی ۱۸۰ قطعه جوجه گوشتی سویه راس ۳۰۸ در قالب طرح کاملا تصادفی با ۳ تیمار و ۴ تکرار و ۱۵ جوجه در هر تکرار در نظر گرفته شده است. گروه های آزمایشی شامل گروه کنترل دریافت کننده جیره پایه و گروه دو شامل جیره پایه با ۰.۱ درصد پروبیوتیک و گروه سوم جیره پایه حاوی ۰.۱ درصد آنتی بیوتیک محرک رشدمی باشد. در روز ۴۲ از هر گروه آزمایشی ۸ نمونه کشتار شده و نمونه گیری از روده کوچک و سکوم اخذ شده است که بر این اساس کاهش معنی دار جمعیت باکتری های روده ایی در گروه دریافت کننده آنتی بیوتیک محرک رشد دیده شده است و بیشترین ارتفاع ویلی و نسبت ارتفاع به عمق کریپت در گروه دریافت کننده پروبیوتیک مشاهده شده است. کاهش عمق کریپت و کاهش تعدا سلول های گابلت به طور معنی دار در گروه دریافت کننده پروبیوتیک دیده شده است و براین اساس مصرف پروبیوتیک در بهبود شاخص های روده ایی موثر بوده است.
کلید واژه : ساکارومایسس، فلاوومایسین، محرک رشد، ریخت شناسی روده کوچک، جوجه گوشتی

بررسی اثرات عصاره‌ی نعناع فلفلی بر روی پاسخ تیتر ایمنی در جوجه های گوشتی تنش داده با SRBC

مهدی هدایتی[1]، ثریا سمایی[2]، میلاد منافی[1]
۱- استادیار گروه علوم دامی، دانشکده کشاورزی، دانشگاه ملایر
۲- دانش آموخته مقطع کارشناسی ارشد تغذیه طیور، گروه علوم دامی، دانشکده کشاورزی دانشگاه ملایر
نویسنده مسؤول : mahvet77@gmail.com

این تحقیق جهت بررسی اثر عصاره‌ی گیاه دارویی نعناع فلفلی بر روی تیتر ایمنی علیه نیوکاسل و آنفلوانزا در جوجه های گوشتی دریافت کننده SRBC انجام شده است.
این مطالعه با ۱۶۰ قطعه جوجه گوشتی راس ۳۰۸ در قالب طرح کاملا تصادفی با ۴ تیمار و ۴ تکرار و ۱۰ مشاهده در هر تکرار انجام شده است. که شامل تیمار کنترل دریافت کننده جیره پایه و تیمار آنتی بیوتیک محرک رشد دریافت کننده فلاوومایسین ۰.۰۴۵ درصد و تیمار سوم دریافت کننده عصاره نعناع فلفلی ۰.۱ درصد و تیمار چهارم دریافت کننده عصاره نعناع فلفلی ۰.۲ درصد بوده است. روزهای ۲۸ و ۳۵ به میزان ۰.۵ سی سی SRBC به تکرارهای زوج و در عضله راست جوجه های گوشتی تزریق شده و یک هفته بعد از هر تزریق نمونه خون جهت آنالیز تیتر خونی صورت گرفته است.
نتایج حاصله اثر معنی داری بین تیمارهای عادی و دریافت کننده SRBC در هنگامی که دریافت کننده عصاره نعناع فلفلی به میزان ۰.۲ درصد بوده است در تیتر نیوکاسل دیده شده است ولی اثر معنی داری در تیتر آنفلوانزا مشاهده نشده است.
کلید واژه : نعناع فلفلی، تیترایمنی، جوجه گوشتی، SRBC

بررسی اثر مقایسه ایی عصاره های مرزه خوزستانی و آویشن شیرازی با آنتی بیوتیک محرک رشد بر روی ارگان های ایمنی و سلول های ایمنی در جوجه های گوشتی تنش داده با SRBC

مهدی هدایتی[۱]، سمانه اکبری[۲]، میلاد منافی[۱]
۱- استادیار گروه علوم دامی، دانشکده کشاورزی، دانشگاه ملایر
۲- دانش آموخته مقطع کارشناسی ارشد تغذیه طیور، گروه علوم دامی، دانشکده کشاورزی دانشگاه ملایر
نویسنده مسؤول: mahvet77@gmail.com

این تحقیق جهت بررسی مقایسه ایی اثرات عصاره های گیاهان دارویی مرزه خوزستانی با آویشن شیرازی بر ارگان های ایمنی و سلول های ایمنی در جوجه های گوشتی دریافت کننده SRBC انجام شده است.
در این مطالعه ۲۰۰ قطعه جوجه گوشتی راس ۳۰۸ در طرح کاملا تصادفی در ۵ تیمار و ۴ تکرار و ۱۰ مشاهده در هر تکرار انجام شده است. که شامل تیمار کنترل دریافت کننده جیره پایه و تیمار آنتی بیوتیک محرک رشد دریافت کننده فلاوومایسین ۰.۰۴۵ درصد و تیمار سوم دریافت کننده عصاره مرزه و تیمار چهارم دریافت کننده عصاره آویشن هر کدام ۰.۰۵ درصد و تیمار پنجم مخلوط عصاره های مرزه و آویشن هر کدام ۰.۰۲۵ درصد بوده است. روزهای ۲۸ و ۳۵ به میزان نیم سی سی SRBC به تکرارهای زوج و در عضله راست جوجه های گوشتی تزریق شده است.در روز ۴۲ از هر تکرار دو مرغ انتخاب شده و اقدام به خونگیری و کشتار شده و وزن ارگان های ایمنی و سلول های ایمنی خون بررسی شده است.نتایج حاصله اثر معنی داری بین تیمارهای عادی در وزن طحال و تیموس مشاهده نشده است اما بورس فابریسیوس در گروه افزایش معنی دار وزن داشته است و در تکرارهای دریافت کننده SRBC که افزایش معنی دار بورس فابریسیوس، تیموس و طحال نسبت به تکرار های دریافت نکرده، مشاهده شده است. کاهش تعداد لنفوسیت های خونی در روز ۳۵ و یک هفته بعد از تزریق SRBC در گروه های دریافت کننده همزمان عصاره های مرزه و آویشن دیده شده و افزایش بازوفیل ها و نوتروفیل ها نیز مشاهده شده است. لذا مصرف هر دو عصاره در شرایط تنش زای ایمنی نقش مهمی در بهبود وضعیت ایمنی در مرغان داشته است.
کلید واژه : مرزه خوزستانی، آویشن شیرازی، ارگان های ایمنی، سلول های ایمنی، جوجه گوشتی، SRBC

شناسایی سویه‌ی جدید S1 از رئوویروس‌های ایجادگر تنوسینوویت از گله های مرغ مادر ایران

مهدی هدایتی[۱و۲]، بهرام شجاعدوست[۲]، سید مصطفی پیغمبری[۲]، آرش قلیان چی لنگرودی[۲]
۱- استادیار گروه علوم دامی، دانشکده کشاورزی، دانشگاه ملایر
۲- دپارتمان بیماری های طیور، دانشکده دامپزشکی، دانشگاه تهران

هدف از این بررسی شناسایی رئوویروس های ایجادگر تنوسینوویت در پرندگان از گله های مرغ مادر ایران به روش RT-PCR و RFLP و در ادامه بررسی فلوژنتیک سویه های جدا شده بود. در این مطالعه از گله های مرغ مادر با سن بالای ۴۵ هفته، نمونه مدفوعی با سواپ اخذ گردید و به آزمایشگاه منتقل گردید و در نهایت بعد از مخلوط کردن نمونه ها از یک مزرعه، ۱۰۰ نمونه جهت بررسی حضور رئوویروس ها مورد استفاده قرار گرفت. در این مطالعه برای تشخیص رئوویروس های ایجادگر تنوسینوویت از پرایمرهایی اختصاصی برای نواحی ژنومی S1 با باند هدف ۱۰۲۳ pb و S4 با باند هدف ۴۳۷bp استفاده شد.
نتایج نشان دهنده این است که ۵ نمونه با استفاده از پرایمرهای ناحیه ژنومی S1 و ۶ نمونه با استفاده از پرایمرهای ناحیه ژنومی S4 مثبت شدند که موارد مثبت با ۵ آنزیم هضم کننده (*Bcn*I, *Dde*I, *Hae*III, *Hinc*II, *Taq*I) مورد هضم آنزیمی قرار گرفتند. آنالیز قطعات حاصله از هضم آنزیمی محصولات PCR در تمامی نمونه های مثبت دلالت بر همسان بودن الگوی هضم آنزیمی نمونه ها با الگوی هضم سویه های S1133 و750505 داشت. در ادامه مطالعات فیلوژنتیک صورت گرفته که نشان دهنده شباهت سویه های جدا شده در ایران با سویه S1133 در حدود ۹۹.۲٪ بوده است.
کلید واژه : رئوویروس پرندگان، گله های مرغ مادر، سویه S1

مشاهده و شناسایی باکتری E-COLI در خروسهای مرغ مادر تخم گذار نژاد بونز با علائم چشمی در ایران

امیرحسین خوانساری، سعید چرخکار، رضا حسینی شهیدی، علی خداداد فخرآبادی، نصراله رهبر

اشریشیا کلی یک باکتری گرم منفی است و انواع آن در دستگاه گوارش پرندگان پیدا می شود و بیشتر سویه های آن غیر بیماریزا هستند اما برخی از سروتایپهای بیماری زای E-COLI میتوانند بیماریهایی نظیر عفونت کیسه زرده ، تورم صفاق ، پریتونیت ، عفونت مجرای تخم ، التهاب غشای مفاصل ، عفونتهای تنفسی ، تورم ناف و آبسه کف پا ایجاد نمایند .

در این مطالعه ، مشاهده لکه سفید رنگی بر روی قرنیه چشم خروسهای فارم مادر تخمگذار نژاد بونز در سن ۳۹ هفتگی در جولای سال ۲۰۱۳ گزارش گردیده است .

با توجه به تاریخچه و علائم ، بروز زخم های قرنیه می تواند توسط برخی از عوامل نظیر مسمومیت گاز آمونیاک ، بیماری مارک ، بیماری AE ایجاد شود که در لیست تشخیص تفریقی مد نظر قرار گرفت .

در ابتدا این ضایعه به شکل توده سفید رنگی در قرنیه شروع به رشد کرده و سپس تمامی سطح قرنیه چشم را پوشاند بطوریکه خروس توانائی دیدن ار آن سمت را از دست می داد ، در نهایت کل چشم از حدقه بیرون زده و تخلیه می شد .

با وجود جدا شدن E-Coli از نمونه های چشم ارسالی به آزمایشگاه و ایجاد عارضه و کوری یک طرفه در خروسها ، در مرغهای همان سالنها تا انتهای دوران تولید گله ، هیچ گونه علائم مشابهی دیده نشد .

بروز این عارضه تنها در یک چشم و فقط در خروسها دیده شد .

تاثیر عصاره آرتیشو بر عملکرد مرغ تخمگذار در مقیاس تجاری

نصراله رهبر*[۳]، سعید چرخکار[۱]، رضا حسینی شهیدی[۲]، امیر حسین خوانساری[۳]، علی خداداد فخرآبادی[۱]

۱ دانشگاه آزاد اسلامی، واحد علوم و تحقیقات، تهران، ایران

۲ دانشجوی بیوتکنولوژی، گروه پاتوبیولوژی، دانشکده دامپزشکی، دانشگاه فردوسی مشهد، مشهد، ایران

۳ کلینیسین فارم، شرکت سیمرغ، واحد خراسان رضوی، ایران

N.rahbar@yahoo.com

هدف: استفاده از جیره فشرده در پرندگان تجاری برای افزایش بهره وری تاثیرات منفی بر شرایط متابولیک پرنده و ارگان های داخلی مانند کبد و متعاقبا کارایی پرنده داشته است. عصاره های گیاهی به عنوان افزودنی های خوراکی یکی از راه حل های این مشکل می باشند. این مطالعه برای بررسی اثر عصاره ارتیشو بر کارایی مرغ تخمگذار نگهداری شده در سیستم قفس در مقیاس تجاری طراحی شده است.

موارد و روش کار: در این مطالعه دو گروه پرنده تحت شرایط یکسان نگهداری شدند: ۵۵۰۰۰ مرغ تخمگذار نژاد بونز در شرایط نگهداری یکسان (نور، دما..) ، در سن بعد از پیک (۵۳ هفته) با علائم خفیف ضایعات کبدی انتخاب شدند. یک گروه تحت درمان با عصاره آرتیشو در دان (۲۰۰ گرم در کیلوگرم) برای ۴۵ روز قرار گرفت. گروه دیگر با جیره بدون مواد افزودنی به عنوان گروه کنترل در نظر گرفته شد. درصد تولید، مرگ و میر، دریافت غذا، و وزن تخم مرغ بصورت روزانه و وزن بدن هفته ای دو بار اندازه گیری شد. بعد از روز ۴۵ داده های دو گروه مورد تجزیه و تحلیل قرار گرفت.

نتایج و بحث: در پایان تست درصد تولید گروه درمان به اندازه ی گروه کنترل افت نکرد(۵.۶۹٪ در گروه کنترل در مقابل ۴.۵۵٪ در گروه تحت درمان). درصد مرگ و میر تجمعی در گروه تحت درمان نتایج بهتری نشان داد(۱.۷۹ در مقابل ۱.۸۶). در گروه تحت درمان افزایش معنی داری در وزن تخم مرغ مشاهده نشد(۶۳.۴۲ در مقابل ۶۶۳.۵۲ گرم) و همچنین هیچ تغیری در میزان مصرف غذا بوجود نیامد (۱۱۸ در مقابل ۱۱۸ گرم در روز). وزن بدن بطور معناداری در گروه درمان افزایش یافت (۱۶۲۰ به ۱۶۳۱ در گروه کنترل در مقابل ۱۶۰۰ به ۱۶۳۸ در گروه تحت درمان)

کلمات کلیدی: عصاره آرتیشو، نژاد بونز، مرغ تخمگذار، عملکرد مرغ تخمگذار، شرایط متابولیک.

بررسی مقایسه‌ای آلودگی به انگل کریپتوسپوریدیوم در جوجه‌های گوشتی مرغداری‌ها با طیور بومی در شهرستان‌های اطراف تبریز

پریسا شهبازی[۲]،ثنا غفاری[۳*]حسین هاشم زاده فرهنگ[۱]
۱- استادیار گروه پاتوبیولوژی ، دانشگاه آزاد اسلامی واحد تبریز ، دانشکده دامپزشکی، تبریز، ایران
۲- استادیار گروه پاتوبیولوژی، دانشگاه تبریز، دانشکده دامپزشکی، تبریز، ایران.
۳- دانشجوی سال آخر دکترای دامپزشکی، دانشگاه تبریز، ایران.
پست الکترونیک نویسنده مسوول:sana_ghafari@yahoo.com

توصیف بیمار-کریپتوسپوریدیوزیس از جمله بیماری‌های مهم در دام، طیور و انسان است که هم از نظر بهداشتی و هم از لحاظ اقتصادی دارای اهمیت فراوانی می‌باشد. کریپتوسپوریدیوم یک تک یاخته انگلی ازشاخه اپی کمپلکسا است که منجربه اختلال دردستگاه گوارش وبروزاسهال و یا درگیری دستگاه تنفس و بورس فابرسیوس می‌گردد. در صورت بروز عفونت‌های هم‌زمان به‌خصوص ابتلا به بیماری‌های تضعیف کننده سیستم ایمنی مانند گامبورو، کریپتوسپوریدیوم بیماری‌زایی بیشتری داشته و به صورت گوارشی عوارض زیادی ایجاد می‌کند.
مواد و روش کار- این مطالعه جهت بررسی میزان شیوع کریپتوسپوریدیوزیز در مرغداری های گوشتی و طیور بومی شهرستان های اطراف تبریز انجام شد. از مجموع ۸۰۰ مورد, ۴۰۰ نمونه مدفوعی از ۲۰ فارم جوجه گوشتی و ۴۰۰ نمونه مدفوعی از جوجه های بومی جمع آوری و به روش زیل نلسن تغییریافته رنگ آمیزی و با استفاده از میکروسکوپ نوری مورد ارزیابی قرار گرفتند.
نتیجه و سر انجام :نتایج حاصله در مطالعات صورت گرفته نشان داد که آلودگی به انگل کریپتوسپوریدیوم هم در جوجه‌های گوشتی و هم در طیور بومی منطقه وجود دارد (میزان شیوع کلی ۷/۱۲٪ بود). که براساس این آمار درصد درگیری در طیور بومی(۹٪) بیشتر از جوجه‌های گوشتی مرغداری‌ها (۸/۲۵٪) بود. و از آن جا که در جوجه‌های گوشتی در مواقع استرس و وجود سایر بیماریها در گله شدت علائم و عوارض این تک یاخته‌ای بیشتر می‌شود لذا در طیور بومی نوع نگهداری و تغذیه آزاد آنها در محیط می‌تواند دلیلی بر علت این اختلاف درصد باشد.
کلمات کلیدی: کریپتوسپوریدیوم، تبریز، طیور بومی، جوجه گوشتی

بررسی اثرات جداگانه ویتامین های موجود در محلول خوراکی ویتامین(AD3E) بر روی روند بهبود سازی مرغ گوشتی دارای لنگش در یک واحد مرغداری در شهرستان زابل

فاروق سارانی[۱]،محمدتقی خمر[۲]،آیدا داوری[۳]،علی ریاسی[۴]
[۱،۲،۴]:دانشجوی دکترای حرفه ای دامپزشکی،دانشکده دامپزشکی زابل
[۳]:استادیاردانشگاه زابل،دانشکده دامپزشکی ،بخش پاتوبیولوژی

استفاده از این ویتامین محلول در درمان کمبودهای ویتامینه، بهبود سرعت رشد،افزایش تولید تخممرغ بارور، بهبود کیفیت پوسته تخممرغ، افزایش اشتها، بهبود سیستم ایمنی بدن ،پیشگیری و درمان ناهنجاریهای اسکلتی کاربرد دارد.به طور تفضیلی ویتامین Aنقش مهمی در حفاظت از بافت اپی تلیال از جمله شبکیه چشم، پوست و غشاهای مخاطی ایفا کرده و در نتیجه به عنوان یک محافظ در برابر عفونت های عمومی بدن مطرح است.ویتامین D3در تنظیم و تصحیح متابولیسم کلسیم و فسفر خون نقش اساسی ایفا میکند.ویتامین Eنقش مهمی در رشد و باروری، افزایش مقاومت بدن وحفظ ثبات ویتامین A داشته و به طور کلی به عنوان یک آنتی اکسیدان طبیعی مطرح میباشد.. برای انجام آزمایش از میان ۱۲۰۰۰قطعه جوجه که دربین انها موارد ابتلای زیادی مشهود بود؛ تعداد۱۰۰ جوجه به روش تصادفی انتخاب و در ۴ گروه۲۵عددی تقسیم شدند .گروه ها بصورت مجزا تحت تیمار با ویتامین های ۱.۲.۳ (تهیه شده از مرکزبیوسنتر زابل)قرار گرفتند .گروه اول شاهد (که ویتامینی دریافت نکردند) ,گروه دوم ۰.۵ سی سی ویتامین A,گروه دوم 0.3 سی سی ویتامین D3وگروه ۴، ۰.۴ گرم ویتامینE به صورت خوراکیاز سن ۲۰ روزگی تا ۴۵ روزگی به مدت ۲۵ روز در شرایط یکسان ومناسب دریافت داشتند.مشاهدا میگردد که اثر ویتامین د۳ در تسریع بهبودی نسبت به دو ویتامین دیگر بیشتر است.
کلیدواژه:ویتامین AD_3E،مرغ گوشتی، لنگش،زابل

تاثیر مدت زمان مواجه با آب الکترولیز شده خنثی بر کاهش آلودگی به *سالمونلا تیفی موریوم* و *اشریشیاکلی* در پوست و فیله ماکیان تازه

دکتر علی فضل آرا [۱]، دکتر مهدی پورمهدی [۱]، جمال ملک زاده [۲]
۱-گروه بهداشت مواد غذایی، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز، اهواز، ایران
۲-دانش آموخته کارشناسی ارشد بهداشت مواد غذایی، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز، اهواز، ایران
نویسنده مسؤول: a.fazlara@scu.ac.ir

مقدمه و هدف: آب الکترولیز شده در سال های اخیر به عنوان یک ماده ی ضدعفونی کننده مفید مطرح شده است. امروزه استفاده از انواع محلول های آب الکترولیز شده به عنوان ماده ی ضدعفونی کننده در صنایع غذایی، پزشکی، دندانپزشکی، دامپروری، پرورش طیور و ... مورد توجه قرار گرفته است. از ویژگی های مطلوب این ماده ی ضدعفونی کننده می توان به ارزان بودن، ایمن و بی خطر بودن و عدم تاثیر سوء بر محیط زیست و عدم بر جای گذاری مواد شیمیایی اشاره کرد. این مطالعه با هدف بررسی تاثیر مدت زمان مواجه با آب الکترولیز شده خنثی بر کاهش آلودگی به *سالمونلا تیفی موریوم* و *اشریشیاکلی* در پوست و فیله ماکیان تازه انجام شده است.

مواد و روش کار: در این مطالعه از آب الکترولیز شده خنثی با غلظت کلر فعال ppm ۱۰۰ و مدت زمان مواجه ۱، ۵، ۱۰، ۱۵ و ۳۰ دقیقه بر روی پوست و فیله مرغ تازه تلقیح شده به ترتیب با 10^6 log/cm^2 و 10^6 log/g از باکتری های فوق الذکر استفاده شد. همچنین از آب مقطر به عنوان محلول کنترل در شرایط مشابه استفاده گردید.

نتایج و بحث: نتایج این تحقیق نشان داد در کلیه شرایط میزان کاهش باکتری های مورد مطالعه در تیمار فیله و پوست مرغ با آب الکترولیز خنثی نسبت به آب مقطر دارای تفاوت معنی داری هستند ($P<$ ۰/۰۱). تیمار فیله با آب الکترولیز خنثی به مدت ۱۵ دقیقه باعث از بین رفتن کامل باکتری *اشریشیا کلی* شد به گونه ای که این باکتری در روش کشت سطحی قابل شناسایی نبود. بیشترین میزان کاهش *اشریشیاکلی* در تیمار آب الکترولیز شده ی خنثی در پوست، در زمان ۳۰ دقیقه مواجه، ۲/۶۳ log/cm^2 بود. به همین ترتیب بیشترین کاهش *سالمونلا تیفی موریوم* در تیمار فیله و پوست با آب الکترولیز خنثی در زمان مواجه ۳۰ دقیقه اتفاق افتاد که میزان کاهش آن به ترتیب در فیله و پوست ۲/۵۱ log/g و۲/۵۴ log/cm^2 بود. بطور خلاصه نتایج این مطالعه نشان می دهد که استفاده از آب الکترولیز خنثی یک روش موثر در کاهش باکتری های *سالمونلا تیفی موریوم* و *اشریشیا کلی* در فیله و پوست مرغ بود. بنابراین استفاده از آب الکترولیز خنثی در شستشوی لاشه مرغ های کشتارشده در خط تولید و چیلرهای کشتارگاه طیور، می تواند به عنوان یک روش ضدعفونی مناسب مورد توجه قرار گیرد.

کلمات کلیدی: آب الکترولیز خنثی، *سالمونلا تیفی موریوم*، *اشریشیاکلی*

بررسی شیوع و حساسیت آنتی‌بیوتیکی سویه‌های جدا شده‌ی سالمونلا از واحدهای مرغداری ارومیه

جعفر طایفه باقرلو [۱]، علیرضا طالبی [۱]
[۱] گروه آموزشی علوم درمانگاهی دانشکده دامپزشکی دانشگاه ارومیه،ارومیه، ایران
ایمیل نویسنده مسؤول: J.tayefeh@urmia.ac.ir

مقدمه: هدف از این مطالعه تعیین میزان شیوع و حساسیت آنتی‌بیوتیکی سویه‌های جدا شده سالمونلا از مرغداری‌های ارومیه بود. سالمونلا یکی از مهمترین عوامل بیماریزای طیور می‌باشد که جنس سالمونلا دارای بیش از ۲۵۰۰ سروار می‌باشد که از نظر آنتی‌ژنی قابل تفریق می‌باشند. از مهمترین بیماری‌های ناشی از سالمونلا در طیور می‌توان به پولوروم، تیفوئید مرغان و پاراتیفوئید یا سالمونلوز اشاره کرد که موجب خسارات زیادی بر صنعت طیور می‌شوند. طیور و فراورده های آن به عنوان یکی از مهمترین منابع آلودگی و مسمومیت انسان به شمار می‌روند، از ین رو از نظر سلامت عمومی نیز اهمیت فراوانی دارند.

مواد و روش کار:۳۸۰ نمونه از مرغداری‌های ارومیه (مزارع گوشتی و مرغ مادر گوشتی) جمع‌آوری شد. نمونه‌ها از فروردین تا آذر سال ۹۴ جمع‌آوری و به آزمایشگاه دامپزشکی منتقل شد.نمونه‌ی سواب از نمونه‌های قلب، کبد، کیسه صفرا، روده و زرده‌ی تخم‌مرغ گرفته و به محیط‌های غنی‌سازی مانند سلنیت F براث و تتراتیونات سدیم منتقل و به مدت ۴۸ ساعت در انکوباسیون ۳۷ ^oC قرار داده شد. نمونه‌ها برای جداسازی سالمونلا و تایید آن به محیط‌های افتراقی مانند مک‌کانکی براث، اس اس آگار و TSI منتقل شد و به مدت ۲۴ ساعت در ۳۷ ^oC انکوبه شد. آزمایش حساسیت آنتی‌بیوتیکی نیز در محیط مولر هینتون آگار و با استفاده از ۹ دیسک آنتی بیوتیکی و با استفاده از روش انتشار دیسک (Kirby-Bauer) انجام شد.

نتایج: ۳۰ سویه سالمونلا از کل ۳۸۰ نمونه جداسازی شد و میزان شیوع آلودگی سالمونلا ۷.۹ درصد بود. میزان حساسیت آنتی‌بیوتیکی سویه‌های سالمونلای جدا شده با استفاده از روش انتشار دیسک انجام شد و با استفاده از جدول مربوط به ممانعت از رشد و روش توصیه شده‌ی NCCLS تعیین شد. بیشترین میزا حساسیت آنتی‌بیوتیکی به ترتیب برای فوزباک (۷۲.۲٪)، فلورفنیکول (۶۳.۳٪) و لینکواسپکتین (۵۰٪) ثبت شد. همچنین بیشترین میزان مقاومت آنتی‌بیوتیکی برای فلومکوئین و جنتامایسین گزارش شد. در نتیجه آنتی‌بیوتیک های فوزباک (فسفومایسین) و فلورفنیکول برای درمان عفونت‌های سالمونلایی ناشی از پاراتیفوئیدها توصیه می‌شود.

کلمات کلیدی: سالمونلا، شیوع، حساسیت آنتی‌بیوتیکی، طیور ارومیه

مطالعه تاثیر اندازه فیزیکی کلینوپتیلولیت و سدیم زئولیت A بر کیفیت گوشت جوجه‌های گوشتی تغذیه شده با جیره‌های آلوده شده با آفلاتوکسین

بهمن پریزادیان کاوان[۱] (نویسنده مسؤول)، محمود شمس شرق[۲]
[۱]استادیار گروه علوم دامی، دانشگاه لرستان، [۲]دانشیار دانشگاه علوم کشاورزی و منابع طبیعی گرگان
پست الکترونیکی: Parizadian.b@lu.ac.ir

هدف: این تحقیق به منظور ارزیابی تاثیر کلینوپتیلولیت و سدیم زئولیت A بر کیفیت گوشت جوجه‌های گوشتی تغذیه شده با جیره‌های آلوده و غیرآلوده به آفلاتوکسین انجام شد. مواد و روش‌ها: جهت تعیین اثرگذاری تیمارها بر پارامترهای کیفیت گوشت جوجه‌های گوشتی، آزمایشی با استفاده از ۸۹۶ قطعه جوجه گوشتی در قالب طرح کاملاً تصادفی با استفاده از دو سطح (۱/۵ و ۳ درصد) و سه اندازه فیزیکی مختلف (کوچکتر از ۲۵۰ میکرومتر، ۰/۴ تا ۰/۸ میلی‌متر و ۱ تا ۲ میلی‌متر) کلینوپتیلولیت و سدیم زئولیت A انجام شد. در روز ۴۲ آزمایش دو قطعه پرنده با میانگین وزنی مشابه گروه آزمایشی انتخاب و پس از کشتار نمونه‌های گوشت به منظور ارزیابی کیفیت گوشت مورد ارزیابی قرار گرفتند. شاخص ماندگاری نمونه‌های گوشت بر اساس سنجش مقدار مالون‌دی‌آلدئید اندازه‌گیری گردید و نتایج آن بر اساس میلی‌گرم مالون‌دی‌آلدئید در کیلوگرم گوشت بیان شد. نتایج حاصله از آزمایش با استفاده از نرم افزار SAS تحلیل شد. نتایج و بحث: نمونه‌های گوشت ران جوجه‌های گوشتی تغذیه شده با جیره‌های غیرآلوده به آفلاتوکسین کمترین مقدار مالون‌دی‌آلدئید را نشان دادند و بیشترین مقدار مالون‌دی‌آلدئید در نمونه‌های گوشت پرندگان تغذیه شده با جیره‌های آلوده به آفلاتوکسین مشاهده شد. استفاده از کلینوپتیلولیت به مقدار ۳ درصد با اندازه فیزیکی ۱-۲ میلی‌متر مقدار مالون دی‌آلدئید گوشت ران را در پرندگان تغذیه شده با جیره‌های آلوده به آفلاتوکسین کاهش داد. بنابراین بر اساس یافته‌های تحقیق حاضر می‌توان نتیجه‌گیری نمود که مکمل‌سازی جیره‌های پرندگان تغذیه شده با جیره‌های آلوده به آفلاتوکسین با کلینوپتیلولیت اثر مثبتی بر ماندگاری نمونه‌های گوشت ران در طی مدت ذخیره‌سازی از طریق کاهش مقدار مالون دی‌آلدئید دارد.
کلمات کلیدی: جوجه‌های گوشتی، کلینوپتیلولیت، سدیم زئولیت A، کیفیت گوشت، آفلاتوکسین

مطالعه توان ایمنی‌زایی واکسن مقاوم به حرارت ND.TR.IRبه روش‌های مختلف واکسیناسیون در جوجه‌های بومی

رضا زارع[۱]، محمد حسن‌زاده[۲]، محمد عبدالشاه[۳]
[۱]دانشجوی دکتری تخصصی بهداشت و بیماریهای طیور، دانشکده دامپزشکی، دانشگاه شهید چمران، اهواز، [۲]استاد گروه بیماریهای طیور، دانشکده دامپزشکی، دانشگاه تهران، [۳]متخصص بهداشت و بیماری‌های طیور، مؤسسه تحقیقاتی واکسن و سرم‌سازی رازی
نویسنده مسؤول: Reza.zare90@yahoo.com

مقدمه:پرورش مرغ درروستاهای ایران بسیارمعمول است وبه عنوان یک منبع درآمد برای خانواده درنظرگرفته می‌شود. شواهد نشان می‌دهند در حدود ۷۰- ۸۰ درصداز تلفات، در جوجه‌هایی که در روستاها به روش‌های سنتی پرورش داده می‌شوند،بعلت عوامل مختلف و اساساً بیماری نیوکاسل است. به دلیل حضور مداوم ویروس در منطقه، تنها راه برای جلوگیری از این بیماری واکسیناسیون است. اما همانطور که می‌دانیم واکسیناسیون با توجه به آب و هوای گرم ایران و مشکل مدیریت همانند زنجیره سرد با شکست بزرگ همراه است.

مواد و روش کار:در این بررسی ۲۰۰ قطعه جوجه بومی یک‌روزه به پنج گروه مختلف با روش‌های مختلف واکسیناسیون تقسیم شدند. توان ایمنی‌زایی واکسن مقاوم به حرارت بیماری نیوکاسل با واکسن‌های رایج مورد ارزیابی و مقایسه قرار گرفت.

گروه۱: گروه کنترل، بدون دریافت واکسن.

گروه۲: واکسیناسیون باواکسن B_1 ولاسوتابه روش قطره چشمی در روزهای ۱۰و ۲۰ روزگی.

گروه ۳: واکسیناسیون باواکسن مقاوم به حرارت بیماری نیوکاسل (ND.TR.IR، مؤسسه تحقیقاتی واکسن و سرم‌سازی رازی)به روش قطره چشمی درروزهای ۱۰ و ۲۰ روزگی.

گروه ۴: واکسیناسیونباواکسن ND.TR.IRبه روش آب آشامیدنی درروزهای ۱۰ و ۲۰ روزگی.

گروه ۵: واکسیناسیونبا واکسن ND.TR.IRبه روش مخلوط درخوراک درروزهای ۱۰ و ۲۰ روزگی.

تمام گروه‌ها بجز گروه کنترل در ۲۸ روزگی بصورت داخل عضلانی به چالش کشیده شدند (۲۰ پرنده از هر گروه بصورت تصادفی برای چالش انتخاب شده بودند). نمونه‌های خون در پنج روز مختلف، شامل روزهای ۱، ۱۰، ۲۰، ۲۸ و ۴۰ جمع‌آوری شدند. تست HI روی نمونه‌های خون جمع‌آوری شده صورت گرفت.

نتایج و بحث:بر اساس تیتر HI، واکسن ND.TR.IRقادر به القاء حفاظت قابل قبول در برابر بیماری نیوکاسل و کاهش میزان مرگ و میر بود. اگرچه تفاوت-هایی در حفاظت ایجاد شده بین روش‌های مختلف استفاده شده برای برنامه واکسن ایجاد شده‌است (قطره چشمی، آب اشامیدنی و مخلوط در خوراک). روش قطره چشمی محافظت بهتری را نسبت به دو روش دیگر ایجاد کرده‌است. نکته اصلی واکسن ND.TR.IRمقاوم به حرارت بودن و انتقال آسان بدون نیاز به استفاده از زنجیره‌ی سرد است. دوماً، اعمال واکسیناسیون قطره چشمی در جوجه‌های بومی ممکن است مشکل باشد، اما ترجیح داده می‌شود. واکسن می‌تواند بترتیب از طریق آب آشامیدنی یا مخلوط در خوراک اعمال شود.
واژه‌های کلیدی: بیماری نیوکاسل، واکسن مقاوم به حرارت بیماری نیوکاسل

شناسایی باکتری های گرم منفی مسبب مرگ و میر در جوجه بلدرچین های ژاپنی

زهرا برومند[۱]، رمضانعلی جعفری[۲]، داریوش غریبی[۳]، کتایون کاظمی[۴]
۱-استادیار بهداشت و بیماری‌های طیور، دانشکده دامپزشکی دانشگاه شهید چمران اهواز
۲-دانشیار بهداشت و بیماری‌های طیور، دانشکده دامپزشکی دانشگاه شهید چمران اهواز
۳-استادیار میکروبیولوژی، دانشکده دامپزشکی دانشگاه شهید چمران اهواز
۴-دانشجوی دکترای دانشکده دامپزشکی دانشگاه شهید چمران اهواز

آلودگی تخم رایج‌ترین علت مرگ و میر زود هنگام در جوجه بلدرچین ژاپنی است. هدف ما بررسی نقش باکتری‌های گرم منفی در مرگ این جوجه‌هاست. بدین منظور ۱۰۰ قطعه جوجه بلدرچین تلف شده یا در حال مرگ زیرسن ۱۰ روزگی از ۱۰ مزرعه در اهواز به دست آمد. نمونه‌ها از کبد و کیسه زرده گرفته شد، کشت خطی بر روی پلیت‌های مک‌کانکی، سبز درخشان (BG)، سالمونلا-شیگلا (S-S) و XLD داده شد و در دمای ۳۷ درجه سانتی‌گراد به مدت ۴۸-۲۴ ساعت انکوبه شدند. باکتری‌های جدا شده به منظور بررسی خلوص و استفاده برای تست‌های بیوشیمایی استاندارد، مجدداً در پلیت ژلوز خون‌دار کشت داده شدند. تأیید سروتیپ سالمونلا توسط مؤسسه تحقیقات واکسن و سرم سازی رازی انجام شد. در نهایت حساسیت تمامی جدایه‌ها به ۱۲ آنتی‌بیوتیک (شرکت پادتن طب، تهران، ایران)، از جمله انروفلوکساسین (۵µg)، اکسی-تتراسایکلین (۳۰µg)، داکسی‌سایکلین (۳۰µg)، سولتریم (۱.۲۵ µg /۲۳.۷۵)، فلورفنیکل (۳۰µg)، لینکواسپکتین(۱۵µg /۲۰۰)، فسفومایسین (۲۰۰µg)، سفوتاکسیم (۳۰µg)، سفتریاکسون(۳۰µg)، سیپروفلوکساسین(۵µg)، جنتامایسین(۳۰µg)، سفالکسین (۳۰µg) مورد بررسی قرار داده شد. نتایج نشان داد ۷۸ قطعه از ۱۰۰ قطعه جوجه بلدرچین مورد بررسی آلوده بودند. باکتری‌های جدا شده شامل اشریشیا کلی (۴۴٪)، سالمونلا روزیزی(۵٪)، سالمونلا تیفی‌موریوم (۳٪)، پروتئوس ولگاریس (۵٪)، پروتئوس میرابیلیس (۵٪)، کلبسیلا نومونیا (۸٪)، انتروباکتر کلواکه (۴٪)، انتروباکتر آئرژنوزا (۴٪)، بودند.

در بیش‌ترین و کم‌ترین حساسیت به سفتریاکسون (۱۰۰٪) و داکسی‌سایکلین (۲۴٪)، در بین جدایه‌های اشریشیا کلی ،به جنتامایسین، سولتریم، اکسی‌تتراسایکلین، فسفومایسین، فلورفنیکل و فسفومایسین (۱۰۰٪) و انروفلوکساسین (۲۷.۵٪) در بین جدایه‌های سالمونلا، به سولتریم و سفتریاکسون (۱۰۰٪) و لینکواسپکتین و تتراسایکلین (۰٪) در بین جدایه‌های انتروباکتر، به فسفومایسین (۱۰۰٪) و سولتریم، لینکواسپکتین و سفالکسین (۴۴.۵٪) در بین جدایه‌های پروتئوس، به سفتریاکسون (۱۰۰٪) و داکسی‌سایکلین (۳۱٪) در بین جدایه‌های کلبسیلا مشاهده شد. می-توان نتیجه گرفت باکتری‌های گرم منفی از علل عمده مرگ زود هنگام در جوجه بلدرچین ژاپنی می‌باشد

واژگان کلیدی: بلدرچین ژاپنی، حساسیت آنتی بیوتیکی، مرگ زود هنگام

تعیین و شناسایی ویروس هپاتیت E پرندگان در گله مادر گوشتی در ایران

ریما مرشد، حسین حسینی

اهداف: ویروس هپاتیت E پرندگان از اعضای جنس هپه‌ویروس از خانواده هپه‌ویریده می‌باشد و از ماکیان با سندرم کبد بزرگ و سندرم هپاتیت-اسپلنومگالی جدا شده است. این سندرم‌ها سبب افزایش مرگ‌ومیر و کاهش تولید تخم‌مرغ و بزرگ شدن کبد و طحال در پرندگان می‌شوند. ویروس هپاتیت E را می‌توان به چهار ژنوتیپ مختلف تقسیم کرد: ژنوتیپ ۱ در استرالیا و کره، ژنوتیپ ۲ در امریکا، ژنوتیپ ۳ در اروپا و چین، ژنوتیپ ۴ در مجارستان و تایوان. هدف از این مطالعه شناسایی ویروس هپاتیت E پرندگان در گله‌های طیور ایران بوده است.

مواد و روش‌ها: در زمستان ۱۳۹۳یک گله مادر گوشتی ۳۴ هفته با ۵٪ کاهش تولید در روز و افزایش تلفات روزانه و یافته‌های کالبدگشایی سندرم کبد و طحال بزرگ و مایع خونی در محوطه شکمی گزارش شد. پنج نمونه کبدی از لاشه‌های این گله به آزمایشگاه ارسال و با روش واکنش زنجیره پلی‌مراز مورد بررسی قرار گرفت.

یافته‌ها و نتیجه‌گیری: هیچ باکتری در کشت باکتریایی از کبدها جدا نشد درحالیکه در همه پنج نمونه در واکنش زنجیره‌ای پلی‌مراز وجود ویروس هپاتیت E تایید شد. تعیین توالی نوکلئوتیدی و تحلیل فیلوژنتیک قطعه ۱۸۶ bp ژن هلیکاز، کمتر از ۹۲٪ شباهت بین ژنوم ویروس هپاتیت E ایران و سایر ویروس‌های هپاتیت E یافت شده در جهان نشان داد. درواقع، این مطالعه اولین گزارش حضور ویروس هپاتیت E در گله‌های طیور ایران است.

واژه‌های کلیدی: ویروس هپاتیت E، گله مادر گوشتی، PCR، ایران

مقایسه پاسخ ایمنی ضدواکسن بیماری آنفولانزا در سه سویه جوجه گوشتی راس ۳۰۸، کاب ۵۰۰ و هوبارد اف ۱۵

محیا عبدالشاه*[1] غلامحسین رؤفی[2] منصور میاحی[3]
۱. فارغ التحصیل دانشکده دامپزشکی دانشگاه شهید چمران
۲. کلینیسن دامپزشکی در بخش خصوصی
۳. استاد بهداشت و بیماری‌های طیوردانشکده دامپزشکی دانشگاه شهید چمران
*Hobab100@gmail.com

به منظور مقایسه‌ی پاسخ ایمنی ضد واکسن بیماری آنفولانزا در سه سویه‌ی متداول جوجه‌ی گوشتی در ایران، تعداد ۳۶۰۰۰ قطعه جوجه‌ی یک روزه از سه سویه‌ی راس ۳۰۸، کاب ۵۰۰ و هوبارد اف۱۵ خریداری شد و در ۶ سالن، ۶۰۰۰ قطعه‌ای با دو تکرار از هر سویه، در شرایط پرورش مشابه (جوجه یک روزه از مادران هم سن، تغذیه و مدیریت پرورش یکسان) به مدت ۴۹ روز پرورش داده شدند. جوجه‌ها پس از انتقال و وزن‌کشی اولیه، واکسینه و در سالن توزیع شدند. برنامه واکسیناسیون گله ضد بیماری نیوکاسل و گامبورو با خونگیری از ۲۰ جوجه در یک روزگی تعیین شد. جوجه‌ها ی هر ۳ گروه بر اساس برنامه تنظیم شده به روش مشابه واکسینه شدند. عیار پادتن ضد واکسن آنفولانزا در ۷، ۱۷، ۲۷، ۳۵، ۴۲ و ۴۸ روزگی به وسیله آزمایش ممانعت از هموگلوتیناسیون تعیین شد. در ۴۸ روزگی، آخرین نوبت خونگیری (۴۸ روز پس از واکسن شب اول)، بین گروه راس و هوبارد و نیز بین کاب و هوبارد اختلاف معنی‌داری وجود داشت ($p<۰/۰۵$) به گونه‌ای که به ترتیب سویه‌ی کاب بیشترین عیار و سپس راس و در آخر سویه‌ی هوبارد پایین‌ترین عیار را در مقایسه‌ی با دو گروه دیگر داشت.
نتایج نشان داد سویه کاب دارای بالاترین عیار پادتن ضد واکسن آنفولانزا بود و سویه‌ی هوبارد پایین‌ترین عیار پادتن را نشان داد. سویه‌ی راس۳۰۸ از نظر پاسخ ایمنی در جایگاه دوم قرار داشت. بنابراین می‌توان گفت پاسخ یه یک برنامه واکسیناسیون مشابه در سویه های تجاری مختلف یکسان نیست.

کنه ها و حشرات تشخیص داده شده در بوقلمون و بلدرچین

ابراهیم باباحمدی
دانشکده دامپزشکی، دانشگاه ایلام، ایران،
ebrahim_12@yahoo.com

در شاخه بندپایان یک گروه قابل توجهی از انگل‌ها وجود دارد که می‌تواند به پرندگان خانگی سرایت کنند، این‌ها می‌توانند در پرهای مرغ، به عنوان بافت همبند، پوست و دستگاه تنفسی، پیدا شوند.نمونه مورد بررسی در این گروه از پرندگان در دوره مربوطه سال‌های ۲۰۱۳ و ۲۰۱۴ مورد دسته بندی قرار گرفتند.اولین بار روی یک اردک و ۳ بلدرچین کار شد.گونه‌های تشخیص داده شده، گروه‌های ذکر شده زیر بودند: در اردک (moschataCairina)Megninia SPP و در بلدرچین (coturnixCoturnixginglymusMegninia).
در دوره سال ۲۰۱۴ تعداد ۲۲ اردک، تعداد ۹ غاز و ۷ بوقلمون مورد بررسی و تشخیص قرارگرفتند و در این گروه مرغ ها ، در اردک ginglymuraMegninia، SPPMegninia و gallinaeMenopon.
در غازها (AnserAnser) : discidicusBresphosceles و شپش طبقه بندی شده، گونه Neoconocephalusturbinatum ((Amblycera: Colpocephaly)
و در بوقلمونها: (Meleagrisgallopavo)، ginglymuraMegninia. مشخص شدند.
کلید واژه: اردک، بوقلمون، بلدرچین، کنه، شپش

ایجاد پلاکت وسط سویهV4ویروس عامل بیماری نیوکاسل برروی کشت سلولی و بررسی مولکولی با روش واکنش زنجیره پلیمراز نسخه برداری معکوس(RT-PCR)

محمد جواد مهربانپور[۱]، ساناز سبحانی[۲]
موسسه تحقیقات واکسن وسرم سازی شیراز[۲]، دانشگاه آزاد اسلامی جهرم
۲

امروزه دربسیاری ازکشورهای دنیا واکسن کلون شده مورد استفاده قرارمیگیرد. جهت کلون کردن یک ویروس،یکی از راهها رشد ویروس برروی کشت سلول وجداکردن پلاکهای مجزا و متفاوت و بررسی آنها ازلحاظ مورفولوژی و ژنتیکی است.
دراین تحقیق،ابتداسلولهای(Madin-Darby Canine Kidney MDCK) بصورت تکلایه و بطور استاندارد کشت داده شد. رقتهای مختلف ویروس به سلولهای تکلایهMDCKهمراه باتریپسین،آگار وسولفات منبزیوم اضافه شد. ویروس توانست برروی سلولهای فوق تکثیر وایجاداثر سایتوپاتیک (CPE) وپلاک نماید. دررقت$^{-۶}$۱۰ تعداد ۶ پلاک که ازلحاظ شکل واندازه تفاوت داشتندبرداشته شدندو جهت تکثیربه تخم مرغ جنین دار ۱۱-۹ روزه تلقیح گردید. بعداز ۴۸ ساعت مایع آلانتوئیک تخم مرغ حاوی پلاک برداشت ونسبت به جداسازیRNAهرپلاک اقدام گردید. منطقه شکست (Cleavage site)پروتئین ادغامی(Fusion) با تستRT-PCRانجام شدومحصولPCRخالص سازی و سکانس گردید. سکانس نوکلئوتیدها وآمینو اسیدها برای هرپلاک باسوش های ثبت شده دربانک ژنی مقایسه شد. سکانس نوکلئوتیدهای تمامی پلاکهای بدست آمده ۹۷ تا ۹۹ ٪ همخوانی باویروسV4 در بانک ژنی راتایید نمود. هدف ازاین پژوهش ایجاد پلاک ازسوش V4 ویروس نیوکاسل برروی سلولهایMDCKجهت ایجادپلاکهای مجزا ودرنهایت بررسی مولکولی پلاکهای ایجادشده میباشد .
کلیدواژه: ویروس نیوکاسل،واکنش زنجیره پلیمراز نسخه برداری معکوس،کشت سلولی

بررسی میزان شیوع آلودگی تک یاخته تریکوموناس گالینه در کبوتران شهرستان قزوین درسال۱۳۹۳

جابر داودی[۱]،افشین بهمن شیستری[۱]*
۱-گروه انگل‌شناسی دامپزشکی، دانشگاه آزاد اسلامی واحد ابهر، ابهر-ایران
نویسنده مسؤول* : jaber_davoudi@yahoo.com

مقدمه: بیماری تریکومونیازیس در کبوتر و پرندگان در اثر انگل تک یاخته ای بنام تریکوموناس گالینه ایجاد می شود . این انگل فاقد مرحله کیستی و بیشتر به شکل ترفوزئیت دیده می شود. تغذیه جوجه کبوتر توسط والدین با شیره چینه دان یکی از راههای مهم انتقال آلودگی است . مصرف آب و غذای آلوده ، عشق بازی هنگام جفت گیری و استحمام در آب آلوده از راههای انتقال بیماری هستند.
هدف:بررسی میزان شیوع کبوتران خانگی منطقه قزوین به تک یاخته تریکو موناس گالینه
روش تحقیق: به منظور جمع آوری نمونه های این بررسی ، که از بهمن ۹۲ لغایت خرداد ماه ۹۳ انجام گرفت شهر قزوین به مناطق شمال ، جنوب ، شرق و غرب تقسیم شد . سپس محل هایی که کبوتر خانگی نگه داری می شدند ، شناسایی گردید . پس از مراجعه به محل های تعیین شده ، نسبت به تکمیل فرم اطلاعات اقدام گردید . آنگاه ، دهان هر پرنده را باز نموده و با سواب از ناحیه دهان ، حلق و حنجره نمونه برداری به عمل آمده و به سرعت سوآب درون لوله آزمایش گذاشته می شد و لوله های حاوی سوآب در مجاورت یخ جهت تشخیص به آزمایشگاه انگل شناسی دانشگاه آزاد اسلامی واحد ابهر منتقل گردیدند.
یافته ها: . از بین ۲۰۰ کبوتر مورد مطالعه ، ۱۴۳ کبوتر (۷۱/۵٪) به تریکوموناس گالینه آلوده بودند ، بالاترین و کمترین میزان آلودگی کبوتران به ترتیب در مناطق جنوب (۷۷ ٪) و شمال (۵۶ ٪) بود . کمترین میزان آلودگی در کبوتران بالای ۳ سال مشاهده گردید و میزان آلودگی در فصل گرم (۸۲ ٪) نسبت به فصل سرد (۶۰ ٪) بیشتر بود. . از نظر آلودگی اختلاف معنی داری بین مناطق مختلف قزوین ، سنین مختلف ، ۲ فصل سرد و گرم و در بین کبوتران نر و ماده وجود نداشت.
بحث ونتیجه گیری: نتایج مطالعات فوق نشان می دهد تریکوموناس در ماکیان و سایر پرندگان به نسبت های مختلف وجود دارد و بالاترین میزان آلودگی در جهان مربوط به کبوتر می باشد که با نتایج مطالعه حاضر مطابقت دارد ومیزان آلودگی در کبوتران شهر قزوین بالا می باشد ، این امر ممکن است به دلیل مساعد بودن شرایط جوی شهر قزوین برای بقاء انگل و عدم رعایت بهداشت مناسب در محل های پرورش کبوتران و یا به دلیل عدم اطلاع کافی از نحوه انتقال و انتشار بیماری در بین صاحبان گله ها باشد .
کلمات کلیدی : تریکوموناس گالینه ، کبوتر خانگی ،قزوین

الگوی RAPD-PCR و مقاومت داروئی جدایه های *استافیلوکوکوس ارئوس* بدست آمده ازپرندگان زینتی

سید سینا باقری، سید مصطفی پیغمبری، محمد سلطانی، محمد ملکان*
گروه بیماریهای طیور، دانشکده دامپزشکی دانشگاه تهران
seyedsinabagheri@gmail.com

عفونتها یا ستافیلوکوکی درپرندگان وسایرحیوانات بسیارشایع می‌باشدکه معمولا عامل مسبب آن *استافیلوکوکوسارئوس*می‌باشد که با وجود اهمیت آن در پرندگان زینتی تاکنون مطالعه ای در مورد عفونت های استافیلوکوکی در پرندگان زینتی ایران انجام نشده است. هدف از این مطالعه بررسی الگوی مقاوت دارویی جدایه*استافیلوکوکوسارئوس* از پرندگان زینتی ارجاعی به کلینیک تخصصی پرندگان دانشکده دامپزشکی دانشگاه تهران و همچنین تعیین الگوی RAPD-PCR این جدایه‌ها بود. طی مدت ۴ ماه اقدام به نمونه گیری از پرندگان گردید. پس از تایید با روش های باکتریولوژیک، نهایتاً ۵۳ نمونه *استافیلوکوکوسارئوس* جداسازی گردید. روش استاندارد دیسک دیفوزیون برای تعیین حساسیت جدایه ها به ۳۰ عامل ضد میکروبی مورد استفاده قرار گرفت. همچنین جدایه های*استافیلوکوکوسارئوس* توسط روش RAPD-PCR با دو جفت پرایمر ۱۰ نوکلئوتیدی مورد تایپینگ قرار گرفتند و گروه بندی پس از تعیین الگوی باندها در الکتروفورزDNAرویژلاگارز انجام گردید. پس ازانجام تست حساسیت آنتی بیوتیکی بر روی جدایه‌های *استافیلوکوکوسارئوس* پرندگان زینتی،بیشترین درصد مقاومت به اگزاسیلین (۵۸ درصد)،کلیندامایسین(۵۳ درصد)،متی‌سیلین(۵۳ درصد) مشاهده گردید. کمترین درصد مقاومت آنتیبیوتیکی هم نسبت به کلرامفنیکل (۴درصد)،لینکواسپکتین (۸درصد)،جنتامایسین(۹ درصد) بوده است.
دربین جدایه های*استافیلوکوکوسارئوس*،وقوع مقاومت چندگانه بسیارشایع بود به طوری که آنهاحداقل به صفروحداکثربه ۱۷ دارو مقاوم بودند. همچنین ۴۳ الگوی مقاومت دارویی شناسایی شد. پس از انجام تست RAPD-PCR بر روی ۵۳ نمونه *استافیلوکوکوسارئوس* پرندگان، ۵ الگو بدست آمد که A تا E نامگذاری شدند. از مجموع ۵۳ نمونه ای که مورد آزمایش قرار گرفته بودند ۲۰ درصد نمونه ها الگوی A، ۶۲ درصد الگوی B، ۳ درصد الگوی C، ۹ درصد الگوی Dو ۳درصد الگوی E را نشان دادند نتایج حاصل از مقاومت آنتی‌بیوتیکی وRAPD-PCR این مطالعه می‌تواند بهمنظورپایشاپیدمیولوژیکجدایه های *استافیلوکوکوسارئوس* پرندگان راهگشا باشد.
کلمات کلیدی: *استافیلوکوکوسارئوس*، پرندگان زینتی، RAPD-PCR، حساسیت آنتی بیوتیکی

جداسازی ، شناسایی و بررسی مقاومت آنتی بیوتیکی سروتیپ های مختلف *سالمونلا* درطیور استان آذربایجان شرقی

ایرج خلیلی[1] ، سهیلا مرادی بیدهندی[2] ، محمد تقی خلیلی[3] ، مهدی صادقی آذر[4]*
۱-موسسه تحقیقات واکسن و سرم سازی رازی - آزمایشگاه ویروس بیوبانک، ۲موسسه تحقیقات واکسن و سرم سازی رازی – بخش میکروبیولوژی ۳، موسسه تحقیقات واکسن و سرم سازی رازی – منطقه شمالغرب کشور، ۴بخش بیماریهای طیور اداره کل دامپزشکی استان آذربایجانشرقی

جنس سالمونلا متعلق به خانواده انتروباکتریاسه، کلاس گاما پروتئو باکتر و دسته انترو باکتریا می باشد. سالمونلاهای زیادی از مرغ، بوقلمون، اردک، غاز، گنجشک و سایر پرندگان اهلی و وحشی جدا شده است. بیماری سالمونلوز در پرندگان و بویژه مرغ شامل اسهال سفید باسیلی (پولوروم)،که عامل آن سالمونلا پولوروم می باشد، تیفوئید مرغان که عامل آن سالمونلا گالیناروم است و پاراتیفوئید مرغان که به وسیلهٔ سروتیپ های مختلف ایجاد می شود. سالمونلوز یک بیماری مشترک انسان و دام بوده و در دنیا از نظر اقتصادی حائز اهمیت می باشد . بررسی و شناسایی توزیع و فراوانی سروتیپهای مختلف سالمونلاها در یک منطقه جغرافیایی با منطقه دیگر متفاوت بوده و تنها سالمونلا تیفی موریوم از لحاظ شیوع گسترده گی جهانی دارد. هدف ازاین تحقیق تعیین گسترش سروتیپ های سالمونلادرمرغهای مادرگوشتی،تعیین سروتیپ وبررسی میزان حساسیت سالمونلاهای جداشده نسبت به آنتی بیوتیک دراستا ن آذربایجانشرقی بود.
مواد و روش :استان آذربایجانشرقی در شمالغرب کشور واقع شده است و مساحت آن $47830\ km^2$ (۲/۸ درصد از مساحت کشور) را شامل میشود. نمونه گیری از مزارع مرغ مادر صورت گرفت. تعداد فارم های فعال در استان آذربایجان شرقی ۱۹ فارم در زمان اجرای طرح بوده و از مجموع ۱۹ واحد فعال در سطح استان ، ۶ فارم مادر گوشتی انتخاب و تعداد ۸۸۳ نمونه اخذ گردید.نمونه ها جهت کشت اولیه و تشخیص های افتراقی توسط آزمایشات بیوشیمیایی و سرولوژیکی به بخش میکروبیولوژی موسسه رازی انتقال یافت.
نتایج:از تعداد ۸۸۳ سواب گرفته شده از مزارع مرغ مادرگوشتی و تخمگذاردر استان آذربایجان شرقی با استفاده از محیط های انتخابی ،اختصاصی و همچنین آزمایشات تفریقی ۶ نمونه سالمونلا جدا گردید. نتایج سروتایپینگ ۶ نمونه جدا شده شامل سالمونلا آدلاید(O35)۲مورد، سالمونلا تیفی موریوم(O4) ۲ مورد، سالمونلا انتریتیدیس(O9) ۱ مورد و سالمونلا (O35)S.II۱ مورد می باشد. در بررسی نتایج آنتی بیوگرام در ۶ نمونه جدا شده نشان داد که تمام نمونه ها نسبت به سفالوتین، سفالکسین و کلیستین مقاوم بودند. همچنین تمام جدایه ها نسبت به جنتامیسین، تری متوپریم+سولفومتوکسازول، کانامایسین، کلرامفنیکل، استرپتومایسین، سیپروفلوکساسین، فورازولیدون، فلورفنیکول، پایپراسیلین، سفپیم، افلوکساسین، نالیدیکسیک اسید، ایمی پنم، سفیکسیم، سفتریاکسون، انروفلوکساسین، آمیکاسین حساس بودند.
کلید واژه : سالمونلا ، طیور ، آنتی بیوگرام ، استان آذربایجانشرقی

مطالعه ی آناتومیکی دستگاه گوارش در کلاغ نوک قرمز

محسن عباسی[۱]، میلاد رستمی[۲]، فروغ پیرهادی[۲]، عباس پیرزاده[۱]
۱.گروه علوم پایه، دانشکده دامپزشکی، دانشگاه لرستان، خرم آباد، ایران،
۲. دانشجوی دکترای حرفه ای دامپزشکی، دانشکده دامپزشکی، دانشگاه لرستان، خرم آباد، ایران

چکیده: دستگاه گوارش حیوانات با رژیم غذایی آنها سازگار می شود و در پرندگان دستگاه گوارش تفاوت دارد. کلاغ نوک قرمز از خانواده ی کلاغ ها و راسته ی گنجشک سانان می باشد.
مواد و روش کار: در این مطالعه ویژگی های آناتومیکی کانال گوارش کلاغ نوک قرمز ارزیابی شد. دوکلاغ بالغ به وسیله ی اتر آرام کشی شدند. نمونه ها در محلول فیکساتیو نگهداری شدند. اجزا مختلف دستگاه گوارش اندازه گیری شدو عکس های مورد نیاز به دقت تهیه شدند.
نتایج و بحث: کلاغ نوک قرمز سکوم خیلی کوتاه و مستقیمی دارد. طول سکوم کمتر از یک سانتی متر می باشد، در حالی که طول سکوم مرغ بیشتر از سی سانتی متر می باشد. این پرنده چینه دان ندارد.
طول کلی روده ی کوچک و بزرگ در این گونه از کلاغ در مقایسه با مرغ کوچکتر است.
کلمات کلیدی: مجرای گوارش، آناتومی، کلاغ نوک قرمز.

مطالعه عفونت تجربی همزمان ویروس آنفلوانزا (H9N2) باسروتیپ B/۷۹۳ویروس برونشیت عفونی درجوجه‌های SPF

پیمان بیژن زاد*[۱]، رضا ممیز[۲]، محمد حسن بزرگمهری فرد[۳]، محمدحسن حبل الورید[۲]، سیدعلی پوربخش[۲]، آیدین عزیزپور[۴]، محسن محمودزاده[۲]
۱- گروه علوم درمانگاهی،واحدتبریز،دانشگاه آزاداسلامی،تبریز،ایران.
۲- موسسه تحقیقات واکسن وسرمسازی رازی،کرج،ایران
۳- دانشکده علوم تخصصی دامپزشکی،گروه بیماری‌های طیور،دانشگاه آزاداسلامی،واحدعلوم وتحقیقات،تهران،ایران
۴-دانشکده کشاورزی مشگین شهر،دانشگاه محقق اردبیلی،اردبیل،ایران
نویسنده مسؤول: drbijanzad@gmail.com

هدف:آنفلوانزا پرندگان وسروتیپ-B/۷۹۳برونشیت عفونی ازبیماری‌های ویروسی مهم صنعت طیورتجاری ایران می‌باشند. بنظرمی‌رسد عفونت‌های همزمان با این دو ویروس به‌صورت طبیعی رخ می‌دهد.
مواد و روش کار:انتشار بافتی ویروس(A/chicken/Iran/m.1/2010(H9N2 و ویروس IR/773/2001(IBV) در اندام‌های مختلف جوجه‌هایSPF مورد بررسی قرارگرفت، بدینمنظور ۸۴ جوجه یک‌روزهSPFبه‌صورت تصادفی در چهارگروه (۲۱جوجه درهرگروه) درایزولاتورهای بافشارمثبت توزیع شدند. درسن ۱۲روزگی جوجه‌های گروه-۱ با 10^6 EID50 ویروس آنفلوانزا،گروه-۲ با10^3EID50 ویروس برونشیت عفونی،گروه-۳ با 10^6 EID50 ویروس آنفلوانزا و 10^3 EID50 ویروس برونشیت عفونی به‌روش قطره چشمی به‌طورهمزمان آلوده شدند،وگروه-۴ به‌عنوان گروه شاهد درنظرگرفته شد. ازاندام‌های مختلف از روز ۲-۱۲ پس از تلقیح نمونه برداری گردید. جهت بررسی انتشار ویروس‌ها ازروش-RT PCRاستفاده گردید.
نتایج و بحث:درگروه-۲،ویروس برونشیت درتمام بافت‌های موردمطالعه به‌غیراز طحال ودرگروه-۳،نیزازتمامی اندام‌ها به غیراز طحال ردیابی گردیدند،اما تکثیر ویروس درنای وبورس درگروه-۳ طولانی‌تر بود. درگروه-۳ ویروس آنفلوانزا،درتمامی بافت‌ها به‌جزء لوزه‌های سکومی ردیابی شد،درحالی که درگروه-۱ ویروس تنها درنای،ریه‌ها،طحال وکلوآک شناسایی شد. جراحات هیستوپاتولوژی درگروه عفونت همزمان شدیدتربودو شامل آتروفی نسبی فولیکول‌ها دربورس،نازک شدن بخش قشری تیموس،طولانی‌ترشدن روند بهبودی در ریه و نای بود. درکلیه نیز پرخونی،خونریزی،ونکروز لوله‌ها درگروه‌های تلقیح شده با ویروس مشاهده شد.نتایج نشان دادکه عفونت همزمان با این ویروس‌ها منجربه تغییرات شدید پاتولوژیکی شده وانتشار ویروس‌ها دربافت‌های مختلف را طولانی‌ترمی‌نماید.
کلمات کلیدی:آنفلوانزای پرندگان (H9N2)،برونشیت عفونی (سروتیپ B/۷۹۳)،
عفونت همزمان،جوجه‌هایSPF،روش مولکولی،هیستوپاتولوژی

بررسی اثرات سطوح مختلف اسید آمینه متیونین بر روی عملکرد و خصوصیات لاشه در جوجه های گوشتی

حسین منصوری یار احمدی۱ ، جعفر فخرایی۱ ، ادریس سعیدی۲ ، ایرج دانیالی۳*
۱-استادیار گروه علوم دامی دانشکده کشاورزی و دامپروری دانشگاه آزاد اسلامی واحد اراک ۲- دانشجوی دکترای تخصصی دانشکده کشاورزی و دامپروری دانشگاه آزاد اسلامی واحد اراک۳- دانش آموخته کارشناسی ارشد دانشکده کشاورزی و دامپروری دانشگاه تهران
Edi.saeidi@yahoo.com

به منظور بررسی اثرات سطوح مختلف اسید آمینهمتیونین بر عملکرد و خصوصیات لاشه جوجه های گوشتی در دوره آغازین(۰-۱۰روز) ، میانی (۱۱-۲۸روز) ، پایانی (۲۹-۴۲روز)ونهایی(۰-۴۲روز)آزمایشی با استفاده از ۴۸۰ جوجه خروس یکروزه گوشتی از سویه راس ۳۰۸ در قالب طرح کاملاً تصادفی شامل ۴تکرار ۴ تیمار که در هر تکرار ۳۰ قطعه مورد استفاده قرار گرفت.تیمارهای آزمایشی شامل سه سطح متیونین۵٪ ، ۱۰٪ ، ۱۵٪ مازاد بر توصیه NRC (1994)طراحی گردید. جوجه ها از روز اول روی بستر و با جیره هایی که براساس احتیاجات سویه راس متوازن شده بودند بطور آزاد تغذیه شدند. طول دوره پرورش ۴۲ روز و در طی این مدت عملکرد جوجه ها به صورت پایان هر دوره برای هریک از تیمارها ثبت گردید و وزن ، مصرف خوراک اندازه گیری ، ضریب تبدیل غذایی محاسبه شد.آنالیز داده ها با نرم افزارSAS ، تجزیه و میانگین ها با آزمون چند دامنه ای دانکن مقایسه شدند.نتایج نشان داد که اضافه نمودن ۱۰٪ اسیدآمینهمتیونین، اضافه وزن روزانه و ضریب تبدیل غذایی را به طور معنی دار تا سن ۲۸ روزگی بهبود ببخشید ($P<۰/۰۵$) این سطح باعث کاهش معنی دار درصد سینه و افزایش معنی دار نسبت ران به لاشه گردید ($P<۰/۰۵$) ، سطوح متیونین باعث کاهش معنی دار چربی حفره بطنی شد. ($P<۰/۰۱$). سطح ۱۰٪ مکمل متیونین بالاترین اضافه وزن نهایی را ایجاد نموده گرچه سطح ۱۵٪ نسبت به گروه شاهد اضافه وزن معنی داری را نشان نداد اما نسبت به سطح ۱۰٪ مکمل متیونین کاهش داشت.نتایج این آزمایش پیشنهاد می کند که سطح ۱۰٪ مازاد اسید آمینهمتیونین باعث بهبود عملکرد و صفات لاشه در جوجه گوشتی می شود.
واژه های کلیدی :اسید آمینه متیونین، جوجه های گوشتی، کیفیت لاشه و عملکرد

مقایسه اثر داروهای ضد کوکسیدیال کیم‌کوکسید، فارم کوکسید باآمپرولیوم و مونتزین بر روی انگل آیمریا تنلا در شرایط آزمایشگاهی

*مجتبی اسمعیل پور روشن**
دانشگاه آزاد اسلامی واحد گرمسار-دکتری دامپزشکی
dr.mojtaba63@gmail.com

مقدمه: بیماری کوکسیدیوز یکی از پر هزینه‌ترین بیماری‌ها در جهان است که توسط انگلی از گروه تک یاخته‌ها از جنس آیمریا ایجاد می شود. این بیماری بیشتر حیوانات اهلی به ویژه پرندگانی مثل بوقلمون، اردک و جوجه‌ها و پستاندارانی مانند گوسفند، گاو و خوک را مبتلا می‌کند.
مواد و روش ها: در این بررسی اثر دو داروی کیم‌کوکسید و فارم کوکسید علیه بیماری کوکسیدیوز روده‌ی کور با دو داروی دیگر به نام‌های آمپرلیوم و مونتزین روی جوجه‌های گوشتی آزمایش شد. در این آزمایش چهار گروه ۲۰ قطعه‌ای برای هر چهار دارو فراهم شد. دو گروه ۲۰ قطعه‌ای نیز به عنوان شاهد(یک گروه مبتلا و درمان نشده و گروه دیگر سالم و بدون مصرف هیچ نوع دارو) آماده شد. خورانیدن دارو به جوجه‌ها دو روز قبل از مبتلا نمودن به بیماری تا ده روز بعد از ابتلا انجام گرفت. بقیه عمر، جوجه‌ها از تغذیه ساده و معمولی استفاده کردند. جوجه‌ها به طور اختیاری در سن چهارده روزگی با خورانیدن تعداد ۱۰۵ اووسیست از آیمریا تنلا به عفونت مبتلا شدند. تعداد جوجه‌ها برای محاسبه آماری استاندارد ۲۵ جوجه یعنی **n= 25** تعیین گردید. ولی تا ۲۰ جوجه به طور حداقل انتخاب گردید. دوز مصرفی داروی ضد کوکسیدیال که به جوجه‌ها خورانیده شد برای مونتزین ۱۰۰ «پی پی ام» و برای بقیه داروها ۱۲۵ «پی پی ام» بود. دفع اووسیست‌ها در یک گرم مدفوع با آزمایش «مک ماستر» کنترل شد و نتایج با آنالیز وار یانس(مغایرت تحلیلی) و مقایسه تناسب مضاعف محاسبه شد.
یافته‌های پژوهش: بعد از درمان، هیچ کدام از گروه‌های دریافت کننده داروی ضد کوکسیدیال، علائم بالینی کوکسیدیوز روده‌ی کور را نشان ندادند که دال بر درمان کامل آن ها بوده است. ضمناً توانایی ادامه زندگی تمام گروه‌ها، به جز گروه شاهد، صد در صد بوده است. از بین گروه‌های درمان شده با چهار داروی ضد کوکسیدیال تحت آزمایش و گروه‌های شاهد در سن چهل و دو روزگی جوجه‌ها، تفاوتی در وزن بدن مشاهده نشد. فقط در یکی از گروهای شاهد یعنی گروه مبتلا و درمان نشده، ۲۰ درصد تلفات مشاهده گردید. هر دو داروی فارم کوکسید و کیم‌کوکسید اثرات ضد کوکسیدیوزیس روده‌ای قابل توجهی داشتند.
بحث و نتیجه‌گیری: آمپرولیوم دارویی کوکسیدیوستاتیک است و با طیف وسیعی علیه کوکسیدیا عمل می‌کند. آمپرولیوم علیه آیمریا تنلا و آیمریا برونتی بسیار موثر است. اما علیه دیگر گونه‌های ایمریا این توانایی را ندارد. به دلیل کم خونی‌هایی که این بیماری انگلی در جوجه‌ها ایجاد می کند بایستی به مسئله وزن نیز توجه داشت، زیرا هر نوع خون ریزی در دستگاه گوارش اثر منفی روی ارگانیسم دارد. مونتزین نوعی کوکسیدسید است که، به طور کلی، برای پیش‌گیری از بیماری کوکسیدیوز در جوجه‌های نژاد برویلر استفاده شده است. مونتزین از بیماری‌زایی دیگر ایمریا ها خوب پیش‌گیری می‌کند. در گروه‌های درمان شده با کیم‌کوکسید و فارم‌کوکسید هیچ گونه دفع اووسیستی مشاهده نگردید، که این نکته احتمالاً نشان دهنده‌ی اختلال و توقف در ادامه ی چرخه‌ی زندگی انگل بوده است. با شناسایی مکانیسم اثر درمانی سریع داروهای کیم کوکسید و فارم کوکسید علیه بیماری کوکسیدیوز روده کور می توان گام‌های مثبتی در جهت مبارزه با این بیماری سرکوبگر سیستم ایمنی و کشنده در صنعت طیور اتخاذ نمود.

واژه های کلیدی: داروی ضد کوکسیدیال، کوکسیدیوز روده، اووسیت آیمریا تنلا، طیور

ارزیابی اثر کافور بر نفوذ اسپرم در غشای پری‌ویتلین زرده تخم بلدرچین‌های ژاپنی

اصغر صداقت، محمدامیر کریمی ترشیزی، شعبان رحیمی*
گروه علوم طیور، دانشکده کشاورزی دانشگاه تربیت مدرس
Karimitm@modares.ac.ir

اهداف: در دهه‌های اخیر همراستا با انتخاب ژنتیکی پیوسته جهت افزایش عملکرد تولید طیور، اختلالات تولیدمثلی نیز افزایش یافته‌اند. از این‌رو یک همبستگی منفی بین تولیدمثل و تولید در طیور مشاهده می‌شود که بموجب آن سرعت رشد بالا سبب ایجاد اختلالاتی نظیر کاهش باروری شده است. قابل توجه است که نفوذ اسپرم در غشای پری‌ویتلین (IPVL) زرده یک همبستگی مثبتی با باروری دارد. مطالعه حاظر به تأثیر افزودن کافور به جیره بر نفوذ اسپرم در IPVLزرده تخم بلدرچین‌های ژاپنی پرداخته است.

مواد و روش‌ها: تعداد ۲۸۰ قطعه جوجه بلدرچین یکروزه به صورت تصادفی درون ۷ تیمار و ۴ تکرار (۱۰ پرنده در هر تکرار) و در قالب طرح بلوک‌های کامل تصادفی قرار گرفتند و جوجه‌ها از یک تا ۲۶ هفتگی تیمارها را دریافت می‌کردند. تیمارها شامل: صفر، ۲۵۰، ۵۰۰، ۷۵۰، ۱۰۰۰، ۵۰۰۰ و ۱۰۰۰۰ppm کافور بودند. در ۲۲ هفتگی نرها از گله جدا شده و ارزیابی نفوذ اسپرم شروع شد. تخم‌ها روزانه جمع‌آوری شدند و زرده از آلبومن جدا شد. در ناحیه ژرمینال دیسک (GD) غشای ویتلین به مساحت ۱/۵ سانتی‌متر مربع برداشته شد. سپس غشای مذکور در PBSشسته شد و بر روی لام به صورت کاملاً صاف قرار گرفت. سپس فرمالین ۲۰ درصد روی آن ریخته شد و معرف شیف نیز به آن افزوده شد. نهایتاً با بزرگنمایی100xدر زیر میکروسکوپ نوری تعداد سوراخ‌های ایجاد شده توسط اسپرم ثبت شدند.

نتایج و بحث: به طور کلی بیشترین شدت نفوذ اسپرم در IPVLپس از جداسازی نرها از گله در تیمار ۱۰۰۰۰ppm مشاهده شد ($P<0.05$)و بیشترین استمرار یا تداوم نفوذ اسپرم نیز در همین تیمار مشاهده شد، در حالیکه طول این استمرار در تیمار شاهد سریعاً کاهش یافت و در روز ۱۴ پس از جداسازی نرها به صفر رسید. به‌طور معکوسی پرندگانی که کافور را دریافت کردند، بویژه بالاترین سطح کافور بیشترین استمرار نفوذ اسپرم در IPVLرا پس از جداسازی نرها نشان دادند. بنابراین بر طبق نتایج این تحقیق به نظر می‌رسد پرندگانی که کافور را دریافت کرده‌اند می‌توانند اسپرم‌ها را بمدت طولانی‌تری (مشخصاً در این آزمایش تا ۱۸ روز پس از جداسازی نرها) در توبول‌های ذخیره اسپرم نگهداری کنند.

کلمات کلیدی: کافور، غشای پری‌ویتلین زرده تخم، باروری، بلدرچین ژاپنی

مطالعه درون‌تنی و برون‌تنی تأثیر ضدمیکروبی کافور بر برخی باکتری‌های گرم منفی و گرم مثبت در بلدرچین‌های ژاپنی

اصغر صداقت، محمدامیر کریمی ترشیزی، شعبان رحیمی*
گروه علوم طیور، دانشکده کشاورزی دانشگاه تربیت مدرس
Karimitm@modares.ac.ir

اهداف: فلور باکتریایی روده نقش مهمی در سلامتی و عملکرد پرندگان ایفا می‌کند. در سیستم پیشرفته تولیدات طیور، عوامل استرس‌زای محیطی و بسیاری از فاکتورهای دیگر ممکن است بر حساسیت به پاتوژن‌ها و نهایتاً عملکرد پرنده تأثیرگذار باشند. دستکاری عملکرد روده و اکوسیستم میکروبی در پرندگان توسط افزودنی‌های خوراکی به عنوان یک ابزار مهم برای بهبود راندمان غذایی و عملکرد رشد بخوبی ثابت شده است. تحقیق حاظر به صورتدرون‌تنی و برون‌تنیجهت ارزیابی تأثیر کافور بر برخی باکتری‌های روده انجام گرفت.

مواد و روش‌ها: در قالب یک مطالعه درون‌تنی، ۲۸۰ قطعه جوجه بلدرچین یکروزه در ۲۸ قفس جداگانه (۱۰ قطعه در هر قفس) با ۷ تیمار و ۴ تکرار و شرایط محیطی کنترل شده در قالب طرح بلوک‌های کامل تصادفی بمدت ۴۲ روز استفاده شدند. تیمارها شامل سطوح مختلف کافور (صفر، ۲۵۰، ۵۰۰، ۷۵۰، ۱۰۰۰، ۵۰۰۰ و ۱۰۰۰۰ppm) بودند. در انتهای آزمایش پرندگان کشتار شدند و در شرایط آسپتیک محتوای ایلئوم جمع‌آوری و در PBSرقیق شدند. جمعیت میکروبی کلی‌فرم‌ها، باکتری‌های اسید لاکتیک، کل باکتری‌های هوازی و باکتری‌های اسپورزا بررسی شدند. فعالیت ضدمیکروبی کافور به صورت برون‌تنی نیز علیه *انتروکوکوسفکالیس*، *سالمونلا انتریتیدیس*، *سالمونلا پلوروم*، *سالمونلا تیفی‌موریوم*، ۳ سروتایپ*ای.کولای* (O_2, O_{78}:K_{80} and O_1:K_1)، *لاکتوباسیلوس کازئی*، *لاکتوباسیلوس رامنوسوس* و *لاکتوباسیلوس پلانتاروم* بررسی شد. کافور در دی‌متیل‌سولفوکساید حل شد و سری رقت در میکروپلیت انجام شد. سپس درون پتری‌دیش کشت داده شدند و بمدت ۲۴ تا ۴۸ ساعت انکوبه شده و تعداد کلنی‌ها شمارش شدند.

نتایج و بحث: نتایج درون‌تنی حاکی بر افزایش باکتری‌های اسیدلاکتیک با افزایش دوز کافور بود. جمعیت کلی‌فرم‌ها نیز یک رفتار درجه دوم نشان دادند، به‌طوریکه بیشترین جمعیت کلی‌فرم‌ها مربوط به گروه‌های صفر، ۲۵۰ و ۱۰۰۰۰ppm کافور بودند ($P<0.05$). مطالعه برون‌تنی مشخص کرد که کافور یک اثر باکتریواستاتیک دارد و در غلظت‌های ۲۵ و ۵۰mg/ml توانست باکتری‌های گرم مثبت شامل *لاکتوباسیلوس کازئی*، *لاکتوباسیلوس رامنوسوس* و *لاکتوباسیلوس پلانتاروم* را مهار کند اما در غلظت‌های ۱۲/۵، ۲۵ و ۵۰mg/ml باکتری‌های گرم‌منفی مهار شدند. بر طبق نتایج تحقیق حاظر به نظر می‌رسد کافور فعالیت بیشتری علیه باکتری‌های گرم‌منفی دارد.

کلمات کلیدی: کافور، باکتری‌های اسیدلاکتیک، کلی‌باسیل، فعالیت ضدمیکروبی، بلدرچین

مطالعه حساسیت آنتی بیوتیکی استافیلوکوکوس اورئوس کوآگولاز مثبت جدا شده از آرتریت گله های مرغ مادر شمال غرب ایران

فرهاد عرب‌باغی[۱]، جعفر طایفه باقرلو[۱*]، علیرضا طالبی[۱]

[۱] گروه علوم درمانگاهی، *دانشکده دامپزشکی، دانشگاه ارومیه*، ارومیه، ایران

ایمیل نویسنده مسؤول: J.tayefeh@urmia.ac.ir

مقدمه: هدف از این مطالعه بررسی حساسیت آنتی‌بیوتیکی استافیلوکوکوس اورئوسجدا شده از آرتریت گله‌های مرغ مادر شمال غرب ایران بود. عفونت استافیلوکوکی به دلیل خسارات ناشی از کاهش وزن‌گیری، کاهش تولید تخم‌مرغ و عوارض ناشی از استئومیلیت و لنگش، از اهمیت فراوانی در صنعت طیور سراسر جهان برخوردار است. مهمترین عوارض ناشی از عفونت استافیلوکوکوس اورئوس که در بازرسی لاشه مرغ در کشتارگاه مشاهده می‌شود، شامل تنوسینوویت (تورم غلاف تاندون ها)، نکروز سر استخوان ران، آرتریت و پری آرتریت و آبسه ی کف پایی می باشد. استافیلوکوکوس‌های مقاوم به متیلیسین (MRSA) که به آنتی‌بیوتیک‌های گروه بتالاکتام مانند داروهای نیمه سنتتیک پنیلیسین مقاوم می‌باشند، از نظر بهداشت عمومی اهمیت زیادی دارند.

مواد و روش کار: در این مطالعه ۱۲ فارم مرغ مادر گوشتی با علایم لنگش و فلجی برای عفونت استافیلوکوکی بررسی شدند. سواپ از سینوویال مفاصل مرغ‌های درگیرگرفته و در محیط آگار خون‌دار ۵ درصد، به مدت ۲۴ تا ۴۸ ساعت و در دمای ۳۷°C انکوبه شد. استافیلوکوکوس اورئوس دارای پرگنه‌های گرد، صاف، بتاهمولیتیک و با قطر ۱ تا ۳ میلی‌متر و اغلب با رنگدانه‌ی نارنجی بودند. تست مانیتول و کوآگولاز نیز برای تشخیص و تایید استافیلوکوکوس انجام شد. برای تعیین حساسیت و مقاومت آنتی‌بیوتیکی از محیط مولر هینتون و با روش انتشار دیسک، دیسک‌های آنتی‌بیوتیکی مورد نظر در محیط قرار داده شد. حساسیت آنتی‌بیوتیکی با استفاده از جداول مربوط به منطقه‌ی ممانعت از رشد و با روش توصیه شده‌ی NCCLS تعیین شد.

نتایج:استافیلوکوکوس اورئوس کوآگولاز مثبت از ۴۹ مورد از ۶۰ نمونه آرتریت و با میزان شیوع ۸۱.۶۶٪ جداسازی شد. بیشترین حساسیت آنتی‌بیوتیکی به ترتیب برای آموکسی‌سیلین (۹۵.۷٪)، فوزباک (۸۹٪)، دیفلوکساسین (۸۷.۶٪) و داکسی‌سایکلین (۷۸.۵٪) گزارش شد. همچنین بیشترین مقاومت آنتی‌بیوتیکی برای اریترومایسین (۹۶.۱٪) و جنتامایسین (۹۰٪) ثبت شد. در نتیجه میزان شیوع آرتریت ناشی از استافیلوکوکوس اورئوس در گله‌های مرغ مادر شمال غرب ایران بالاست و تست حساسیت آنتی‌بیوتیکی میتواند به درمان صحیح آرتریت استافیلوکوکوس اورئوس کمک کند.

کلمات کلیدی: استافیلوکوکوس اورئوس، حساسیت آنتی‌بیوتیکی، مرغ مادر گوشتی، ایران

بررسی مقایسه ای پارامتر های مختلف تابلوی خونی در سه گونه ی پرنده ی شکارچی و گوشت خوار بومی منطقه شهرکرد

ثمین مدرسه قهفرخی[۱]، عبدالکریم زمانی مقدم[۲]، امیر دهقانی سامانی[۲]

[۱] دانشجوی دکترای عمومی دامپزشکی، دانشکده دامپزشکی، دانشگاه شهرکرد، شهرکرد، ایران، [۲] گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه شهرکرد، شهرکرد، ایران

آدرس الکترونی نویسنده مسؤول: amir@stu.sku.ac.ir و amirds2008@gmail.com

تابلوی خونی یا شمارش تام خونی به عنوان یک آزمون تشخیصی در شناسایی موارد کم خونی، عفونت ها و درگیری با سایر بیماری ها می باشد. عقاب طلایی یکی از گونه های شکاری بزرگ در نیم کره ی شمالی زمین می باشد که دارای گسترش بالای جغرافیایی می باشد و در مناطق وسیعی از اوراسیا، شمال آفریقا و شمال امریکا گسترش دارد. سارگپه یکی از گونه های شناسایی شده از پرندگان شکاری می باشد که در مناطق وسیعی از اروپا و آسیا گزارش شده است. این پرنده عمدتا در نزدیک زمین زندگی می کند به جز در فصول سرد و نیز در گونه های خاص این پرنده. عقاب نقطه دار یکی از پرندگان شکاری از خانواده ی عقاب هاست و معمولا از گونه های مهاجر به شمار می آید. در این مطالعه تابلوی خونی گونه های فوق در منطقه شهرکرد مورد مطالعه قرار گرفت. نمونه ی خون به همراه ماده ی ضد انعقاد از پرندگان اخذ شد. در مرحله ی بعد گسترش خونی بلافاصله از هر پرنده تهیه شد و پس از ثبوت رنگ آمیزی شد. در مرحله ی بعد هماتوکریت و شمارش تفریقی و تام گلبول های سفید هر گونه و پرنده به دقت محاسبه گردید. نتایج این مطالعه نشان داد که برای عقاب طلایی میزان هماتوکریت ۴۳ درصد، تعداد تام گلبول های سفید ۱۳۰۰۰ عدد در هر میکرولیتر، میزان ۶۵ درصد هتروفیل، ۲۳ درصد لنفوسیت، ۳ درصد مونوسیت، ۸ درصد ائوزینوفیل و ۱ درصد بازوفیل وجود داشت در مورد سارگپه میزان هماتوکریت ۴۰ درصد، تعداد تام گلبول های سفید ۱۲۲۰۰ عدد در هر میکرولیتر، میزان ۶۱ درصد هتروفیل، ۲۶ درصد لنفوسیت، ۴ درصد مونوسیت، ۷ درصد ائوزینوفیل و ۲ درصد بازوفیل وجود داشت و نهایتا در مورد عقاب نقطه دار میزان هماتوکریت ۴۷ درصد، تعداد تام گلبول های سفید ۱۴۰۰۰ عدد در هر میکرولیتر، میزان ۶۸ درصد هتروفیل، ۲۱ درصد لنفوسیت، ۳ درصد مونوسیت، ۷ درصد ائوزینوفیل و ۱ درصد بازوفیل وجود داشت. تشابهات بسیار زیادی بین نتایج این مطالعه و نتایج مطالعه ی میلر و همکاران وجود دارد.

واژگان کلیدی: پارامتر های تابلوی خونی، پرندگان شکاری، شهرکرد

اولین گزارش آلودگی به شپش جونده *پکتینوفیگوس فورفیکولاتوس* در *پلیکان سفید بزرگ* در شهرکرد، ایران

ثمین مدرسه قهفرخی[۱]، عبدالکریم زمانی مقدم[۲]، امیر دهقانی سامانی[۲]
[۱] دانشجوی دکترای عمومی دامپزشکی، دانشکده دامپزشکی، دانشگاه شهرکرد، شهرکرد، ایران،
[۲] گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه شهرکرد، شهرکرد، ایران
آدرس الکترونی نویسنده مسؤول: amir@stu.sku.ac.ir و amirds2008@gmail.com

گونه های *پلیکان سفید بزرگ* که به نام های پلیکان سفید شرقی، پلیکان رزی و نیز پلیکان سفید هم شناخته می شوند از خانواده ی پلیکان ها می باشند. این پرندگان عمدتا از طریق شکار ماهی ها تغذیه کرده و در سطح دریاها و آب های تازه زندگی می کنند. گونه های *پلیکان سفید بزرگ* در سال ۲۰۱۴ میلادی جزء فهرست قرمز پرندگان در معرض خطر انقراض سازمان های جهانی قرار گرفتند. گونه های *پلیکان سفید بزرگ* در مناطق وسیعی از جنوب شرق اروپا تا آسیا و افریقل پراکنده شدند و این امر لزوم نگرانی و آشنایی بیشتر با این گونه ها را در دنیا پر رنگ تر می کند. شپش های جونده یکی از مهم ترین گونه های انگل خارجی در پرندگان می باشند که حیات پرندگان و سلامتی آن ها را تحت تاثیر قرار می دهند. این مطالعه به بررسی یکی از گونه های شپش جونده در *پلیکان سفید بزرگ* می پردازد. یک قطعه *پلیکان سفید بزرگ* آسیب دیده با علائم لاغری مفرط و عدم توانایی در پرواز به کلینیک دامپزشکی دانشگاه شهرکرد ارجاع داده شد. در معاینات ابتدایی تعداد زیادی انگل خارجی در سطح بدن و روی بال های پلیکان آسیب دیده مشاهده گردید. بلافاصله انگل ها با پنس استریل جمع آوری و به آزمایشگاه انگل شناسی منتقل شدند. در آزمایشگاه انگل های جدا شده به طور دقیق مورد مطالعه قرار گرفتند. بر اساس کلید های تشخیصی انگل های جدا شده به عنوان گونه ی *پکتینوفیگوس فورفیکولاتوس* شناسایی شدند. آلودگی به انگل *پکتینوفیگوس فورفیکولاتوس* در ترکیه توسط اونور گریسگین و همکاران و نیز دیک و همکاران گزارش گردیده است. نتایج این مطالعه انگل *پکتینوفیگوس فورفیکولاتوس* را به عنوان یکی از شپش های رایج در جمعیت پلیکان ها در مناطق ذکر شده معرفی می نماید.

واژگان کلیدی: پلیکان، شپش جونده، شناسایی، شهرکرد

اثر آلودگی به انگل خونی *هموپروتئوس کلومبه* بر تابلوی خونی کبوتر

امیر دهقانی سامانی[۱]، خداداد پیرعلی خیرآبادی[۲]
[۱] گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه شهرکرد، شهرکرد، ایران
[۲] گروه پاتوبیولوژی، دانشکده دامپزشکی، دانشگاه شهرکرد، شهرکرد، ایران
آدرس الکترونی نویسنده مسؤول: amir@stu.sku.ac.ir و amirds2008@gmail.com

انگل ها حیات و تولید پرندگان را تحت تاثیر قرار می دهند، به خصوص با تحت تاثیر قرار دادن جذب مواد غذایی و اختلال در عملکرد های ضروری و طبیعی در بدن میزبان. انگل هموپروتئوس کلومبه انگلی خونی است که به طور طبیعی در کبوتر های مناطق حاره و تحت حاره ای بروز می کند. در این مطالعه اثر آلودگی به انگل هموپروتئوس کلومبه بر تابلوی خونی و تعداد گلبول های سفید کبوتر های آلوده مورد مطالعه قرار گرفت. نمونه ی خون از ۱۰۰ کبوتر به صورت تصادفی در شهرکرد گرفته شد. نمونه ها از ورید بالی پرنده ها اخذ شدند و گسترش ها پس از رنگ آمیزی در خصوص آلودگی به انگل خونی هموپروتئوس کلومبه توسط میکروسکوپ نوری مورد مطالعه قرار گرفتند. هماتوکریت و تعداد تام و تفریقی سلول های خونی برای هر گسترش تعیین گردید. نتایج این مطالعه نشان داد که هماتوکریت در کبوتر های آلوده به انگل هموپروتئوس کلومبه نسبت به کبوتر های سالم افزایش معنا داری داشت. همچنین افزایش معنا دار در تعداد تام گلبول های سفید پرندگان مبتلا نسبت به پرندگان سالم مشاهده شد. تفاوت معنا دار بین تعداد تفریقی لنفوسیت ها و نیز ائوزینوفیل ها در پرندگان آلوده و پرندگان سالم مشاهده گردید. اگر چه نتایج این مطالعه و مطالعات مشابه بخشی از آثار آلودگی به انگل های خونی را در پرندگان مشخص می نمایند اما هم چنان موارد نامشخص زیادی در این خصوص وجود دارد.

واژگان کلیدی: تابلوی خونی، کبوتر، گلبول سفید، هموپروتئوس کلومبه

اثر آلودگی به انگل خونی *هموپروتئوس کلومبه* بر شاخص های سیستم آنتی اکسیدان کبوتر

امیر دهقانی سامانی[۱]، خداداد پیرعلی خیرآبادی[۲]
[۱] گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه شهرکرد، شهرکرد، ایران
[۲] گروه پاتوبیولوژی، دانشکده دامپزشکی، دانشگاه شهرکرد، شهرکرد، ایران
آدرس الکترونی نویسنده مسؤول: amir@stu.sku.ac.ir و amirds2008@gmail.com

گزارش شده که انگل ها موجب تحت تاثیر قرار گرفتن حیات و تولید پرندگان می شوند ، به خصوص با تحت تاثیر قرار دادن جذب مواد غذایی و اختلال در عملکرد های ضروری و طبیعی در بدن میزبان سبب بروز اختلال و نواقصی در عملکرد طبیعی بدن پرندگان می گردند. به طور شایع انگل خونی *هموپروتئوس کلومبه* در کبوتر های مناطق حاره و تحت حاره ای دیده می شود. در این مطالعه اثر آلودگی به انگل *هموپروتئوس کلومبه* بر شاخص های سیستم آنتی اکسیدان کبوتر های آلوده به این انگل در مقایسه با پرندگان سالم مورد مطالعه قرار گرفت. نمونه ی خون از ۱۰۰ کبوتر به صورت تصادفی در شهرکرد گرفته شد. نمونه ها از ورید بالی پرنده ها اخذ شدند و گسترش ها پس از رنگ آمیزی در خصوص آلودگی به انگل خونی *هموپروتئوس کلومبه* توسط میکروسکوپ نوری مورد مطالعه قرار گرفتند. شاخص های سیستم آنتی اکسیدان شامل: تولیدات پراکسیداسیون چربی های خون، توان احیای آهن پلاسما، غلظت اوریک اسید پلاسما، فعالیت آنزیم سوپر اکسید دیسموتاز و آنزیم کاتالاز برای هر نمونه تعیین گردید. نتایج این مطالعه نشان داد که پراکسیداسیون چربی های خون، توان احیای آهن پلاسما، غلظت اوریک اسید پلاسما و فعالیت آنزیم کاتالاز در کبوتر های آلوده به انگل *هموپروتئوس کلومبه* نسبت به کبوتر های سالم افزایش معنا داری داشت. اما فعالیت آنزیم سوپر اکسید دیسموتاز در کبوتر هاس آلوده نسبت به کبوتر های سالم کاهش معنا داری داشت. اگر چه نتایج این مطالعه و مطالعات مشابه بخشی از آثار آلودگی به انگل های خونی را بر شاخص های سیستم آنتی اکسیدان در پرندگان مشخص می نمایند اما هم چنان موارد نامشخص زیادی در این خصوص وجود دارد. توصیه می شود در مطالعات بعدی اثر آلودگی به انگل ها را بر سایر پارامتر ها مورد مطالعه قرار گیرد.

واژگان کلیدی: انگل های خونی، استرس اکسیداتیو، کبوتر، *هموپروتئوس کلومبه*

گزارش ارزیابی عیار آنتی بادی ناشی از واکسن رئوویروس با استفاده از آزمایش الایزا در مرحله قبل از تولک بری از یک مزرعه مرغ مادر از هیبرید ۳۰۸ راس در کرمانشاه

*نیکو ذوالنوری۱، ابراهیم حشمتی۲
۱دکترای عمومی دامپزشکی، مزرعه مرغ مادر صحنه، صحنه_ کرمانشاه.
۲کارشناس فنی علوم دام و طیور، مزرعه مرغ مادر صحنه، صحنه_ کرمانشاه.
zonoory.nikoo@yahoo.com

هدف:رئوویروس های پرندگان در اغلب گله های طیور یافت می شوند و حتی ممکن است منجر به برخی بیماری های مهم از قبیل آرتریت رئوویروسی، التهاب تنوسینوویت، بیماری مزمن تنفسی، سندرم سوءجذب و کوتولگی و برخی بیماری های دیگر شوند که به ویژه کنترل آن در مرغ مادر نسبت به سایر پرندگان از اهمیت بسزایی برخوردار است. مطالعه حاضر می‌تواند به مدیریت کنترلی برای زمان مناسب واکسن‌دهی کمک کند.
مواد و روش ها: در این مطالعه طی دو مرحله خونگیری مربوط به قبل و پس از واکسن دهی_به ترتیب در سن ۱۲ و ۵۸ هفتگی که قبل از تولک بری است_ هر بار ۲۵ نمونه سرم جدا گردید. این در حالی بود که تجویز واکسن غیرفعال شده سویه S1133در سن ۱۹ هفتگی انجام پذیرفت. سپس سرم ها به وسیله الایزای غیرمستقیم مورد ارزیابی قرار گرفتند و داده های بین دو گروه ۱۲ و ۵۸ هفته از لحاظ آماری با استفاده از آزمون t مقایسه شدند.
نتیجه گیری و بحث:بین میانگین تیتر آنتی بادی در مرحله قبل و پس از واکسن دهی اختلاف معنی دار وجود داشت $p<0/05$میانگین عیار آنتی بادی و درصد CVبه ترتیب در مرحله قبل و پس از واکسن ۳۰۱۲، ۲/۳۸ %و ۶۰۰۲، ۳۱ %به دست آمد. به نظر می رسد که با وجودی که فاصله زمانی نسبتاً زیادی از تجویز واکسن سپری شده است اما همچنان پاسخگوی حفاظت ایمنی شده است، این درحالی است که اغلب توصیه شده است که این واکسن طی دو مرحله پرورش و قبل از تولید تخم مرغ استفاده شود، بنابراین تجویز تنها یک مرتبه واکسن در سن ۱۹ هفته کفایت می نماید کما اینکه از لحاظ هزینه اقتصادی مقرون به صرفه می باشد و از عوارض ناشی از تجویز واکسن مانند استرس، می کاهد. با این وجود در مورد اثرات سینرژیک و تداخلی آن با سایر واکسن ها و اثرات محیطی نیاز به مطالعه های بیش تری است و ممکن است در مزارع مختلف متفاوت باشد. یکنواخت سازی وزنی گله و تجویز واکسن های IBD_EDS_IBV, FPو نیوکاسل در سن ۶۱ هفتگی نیز می تواند به طور غیرمستقیم بر کنترل آن مؤثر باشد.

کلمات کلیدی: رئوویروس، واکسن، سن، عیار آنتی بادی.

مقایسه اثرات روش‌های مختلف تولک‌بری اجباری بر شاخص تولید و کیفیت تخم در بلدرچین ژاپنی (Coturnix japonica)

فلسفی‌منش م[۱]، زمانی‌مقدم ع.ک[۲]، خواجعلی ف[۳]، مهرایی م.ح[۴]، حیدری ع[۵*]
۱.عضو سازمان دامپزشکی ایران، اصفهان، اصفهان، ۲. دانشیار، گروه علوم درمانگاهی،دانشگاه شهرکرد، ایران
۳. استاد، گروه علوم دامی، دانشگاه شهرکرد، ایران، ۴.رزیدنت بهداشت و بیماری‌های طیور، گروه علوم درمانگاهی، دانشگاه شهرکرد، ایران
۵. دانش‌آموخته دکترای عمومی دامپزشکی، دانشگاه شهرکرد، ایران
aliheidariiri@gmail.com

مقدمه:بلدرچین ژاپنی (Coturnix japonica) یکی از مهم‌ترین پرندگان تجاری با عملکردی عالی در تولید تخم در سراسر جهان به حساب می‌آید. تولک، فرآیندی طبیعی است که به ریزش دوره‌ای پرها و پردرآوری مجدد به همراه استراحت به دستگاه تولیدمثل اطلاق می‌شود. هرچند مکانیسم تحریکی همچنان نامشخص است، فاکتورهای مختلف و موثر شناخته شده ای چون کوتاه شدن طول روز، تغییرات غذایی و محدودیت پرنده از آب و غذا را می‌توان نام برد.تولک‌بری اجباری صرفاً به دلیل اهداف اقتصادی و به منظور طولانی نمودن عمر تولید مثلی پولت‌ها طی دومین چرخه تخم‌گذاری بدون جایگزین نمودن آن‌ها انجام می‌گیرد.برآن شدیم تا سه روش مختلف تولک‌بری اجباری را از نظر شاخص تولید و کیفیت تخم، با روش سنتی گرسنگی بر روی این پرنده مقایسه کنیم.

مواد و روش کار: در این آزمایش از ۷۲ بلدرچین ماده نژاد ژاپنی با سن ۷۰ روزگی و متوسط وزن ۱۰±۲۷۰ گرم استفاده شد. بلدرچین‌ها به طور تصادفی به ۴ تیمار (روش‌های تولک‌بری) تقسیم شدند. هر تیمار شامل ۳ تکرار و هر تکرار، شامل ۶ قطعه بلدرچین مولد بود. تیمار یک: استفاده از جیره سبوس گندم، تیمار دو: گرسنگی بدون محدودیت آب، تیمار سه: استفاده از ۹۰ درصد پودر یونجه در جیره پایه و تیمار چهار: به کار بردن ۱۵۰۰۰ppm اکسید روی (ZNO)در جیره پایه. دوره‌ی استرس در هر چهار روش، تا افت ۲۵ تا ۳۰ درصد وزن بدن (تا چهار روز) ادامه یافت و پس از آن دان از جیره پایه به صورت آزاد در اختیار پرندگان قرار گرفت.

بحث و نتیجه گیری: در راستای مقایسه‌ی تولک‌بری به این چهار روش مختلف، نتایج نشان می‌دهد که شاخص‌های تولید روزانه‌ی تخم، وزن تخم، بازده غذا، کیفیت تخم و غیره نتایجی بهتر یا لااقل هم‌سطح روش گرسنگی به خصوص به روش روی بیان می‌کنند. اختلافات معنی‌دار ($P<۰/۰۵$) در مورد پارامترهای کاهش وزن کل دستگاه تولید مثلی و وزن اویداکت بین تیمار گرسنگی و سایر تیمارها مشاهده شد.با توجه به تحقیق انجام گرفته و با لحاظ نتایج بدست آمده، می‌توان به این نتیجه رسید که روش‌های تغذیه‌ای تولک‌بری را می‌توان جایگزین روش مرسوم تولک‌بری نمود تا ضمن رعایت حقوق حیوانات، به نتایج مورد نظر درکیفیت و بازده تخم رسید.

کلمات کلیدی: بلدرچین ژاپنی، تولک‌بری اجباری، گرسنگی، اکسیدروی، پودر یونجه، سبوس گندم.

آلودگی گونه های هموپروتئوس در کبوترهای یکی از باغ های پرندگان ایران

مریم رسولی [۱و۲*]، مهسا درفشی [۳]
[۱*] گروه پاتوبیولوژی آموزشکده دامپزشکی شهمیرزاد، دانشگاه سمنان، سمنان، ایران
[۲] گروه پاتوبیولوژی دانشکده دامپزشکی سمنان، دانشگاه سمنان، سمنان، ایران
[۳] آموزشکده دامپزشکی شهمیرزاد، دانشگاه سمنان، سمنان، ایران
ایمیل نویسنده مسوول: Mrdvmp@yahoo.com, Mrvpar@semnan.ac.ir

اهداف: هموپروتئوس (*Haemoproteus*) انگلی تک یاخته در گروه هموسپوریدین ها می باشد که می تواند پرندگان را آلوده کند. هموپروتئوس انگل ناشی از بندپایان است و پشه های جنس کولیکوئیدس و مگس های هیپوبوسکید می توانند به عنوان ناقل و میزبان نهایی مطرح باشند. بیماری در پرندگان ممکن است از بی علامت تا شدید بروز کند. کم خونی، لاغری، کاهش وزن و افسردگی از شایع ترین علائم این بیماری در پرندگان است. هدف از این مطالعه سنجش میزان شیوع هموپروتئوس در کبوترهای یکی از باغهای پرندگان، شناسایی گونه های آلوده کننده و تغییرات ناشی از این آلودگی در گلبولهای سفید و قرمز پرندگان آلوده می باشد.

مواد و روش کار: در این مطالعه، از ورید بال ۵۰ کبوتر یکی از باغهای پرندگان نزدیک تهران خونگیری به عمل آمده و گسترش خونی تهیه گردید. گسترش های خونی به آزمایشگاه انگل شناسی منتقل شده، با متانول ثابت شده و با رنگ گیمسا رنگ آمیزی گردیدند. گونه های هموپروتئوس بر اساس ریخت شناسی و کلیدهای تشخیصی شناسایی شدند.

نتایج و نتیجه گیری: ۱۴ مورد از ۵۰ نمونه اخذ شده (۲۸٪، ۴۰٪-۱۵ با فاصله اطمینان ۹۵٪) به انگل هموپروتئوس آلوده بودند. مراحل مختلف انگل از گامتوسیت های جوان تا میکرو و ماکرو گامتوسیت در گسترش های خونی رنگ آمیزی شده، قابل مشاهده بودند و گونه های مختلفی از انگل، شناسایی گردید. علاوه بر این، تغییراتی در هتروفیل ها و لنفوسیت های پرندگان آلوده و افزایش گلبول های قرمز لیز شده در برخی از نمونه ها وجود داشت. در ایران آلودگی کبوترها به هموپروتئوس گزارش شده است ولی متاسفانه داروهای ضد مالاریا حضور انگل در خون را کاهش می دهند ولی آن را از بین نمی برند، بنابراین بهتر است اقداماتی برای شناسایی ناقلین و کنترل آنها انجام پذیرد.

رسوب احشایی اورات در یک مرغ لهستانی

مراد رحیمی
گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه رازی
rahimi@razi.ac.ir

هدف: گزارش بروزرسوب احشایی اورات در یک قطعه مرغ لهستانی، که اصولاً به عنوان پرنده ای زینتی و برای نمایش پرورش داده می شود.
مواد و روشهای کار: در تیرماه ۱۳۹۴، لاشه یک قطعه مرغ بالغ لهستانی برای کالبدگشایی به مرکز خدمات تخصصی طیور، کرمانشاه ارجاع داده شد. مجموعاً چهار قطعه از این نژاد در باغ پرندگان کرمانشاه نگهداری و با جیره تجاری استارتر ماکیان گوشتی تغذیه می شدند. پرنده درست قبل از ارجاع به کلینیک تلف شده بود. کالبدگشایی به طور روتین انجام شد. وضعیت بدنی پرنده خوب بود. رسوبات سفید گچی بر روی سطوح سروزی قلب و کبد و در اپیتلیوم مری و نای مشاهده شد. کلیه راست به طور کامل آتروفی و میزنای راست با مواد سفید گچی مسدود شده بود. آزمایش مورکساید بر روی رسوبات جمع آوری شده از پریکارد و سطح سروزی کبد انجام شد. نمونه هایی از قلب، کبد و کلیه برای هیستوپاتولوژی به آزمایشگاه ارسال شد که پس از پروسه کردن، تهیه برش و رنگ آمیزی با هماتوسیلین و ائوزین، با میکروسکوپ نوری مورد بررسی قرار گرفتند.
نتایج و جمعبندی: ظاهر شدن رنگ بنفش در آزمایش مورکساید، وجود اورات در رسوبات را تأیید کرد. در مشاهده میکروسکوپی، کلیه به صورت فیزیکی، به وسیله رسوب اورات، آسیب دیده بودو نفوذ تعدادی سلول آماسی هم مشاهده شد. دژنرسانسونکروزشدیدسلولهای پوششی لوله های کلیوی چشمگیر بود. در قلب، پریکاردیت، نکروز فیبرهای عضلانی قلب و توفوس (درپریکارد و میوکارد) مشاهده شد. هیستوپاتولوژی کبد نکروز هپاتوسلولار مالتی فوکال و آماس حاد را نشان داد. رسوباحشاییاورات پیامد نارسایی شدید کلیوی است که منجر به افزایش اسید اوریک خون (هایپریوریسمی) می شود. در طیور، جدا از نارسایی کلیوی، میزان پروتئین مازاد بر نیاز پرنده هم ممکن است سبب هایپریوریسمی شود. دهیدراسیون ناشی از محرومیت از آب علت معمول رسوباحشاییاورات در طیور اهلی است. موارد بروز رسوباحشاییاورات در طیور به عوامل عفونی مانند سویه های نفروتروپیک ویروس برونشیت عفونی و کریپتوسپوریدیوز کلیوی و عوامل غیرعفونی از جمله کمبود ویتامین آ، یورولیت و درمان با بیکربنات سدیم هم نسبت داده شده است. هرچند ممکن است دیگر اتیولوژیها به تنهایی یا همراه هم باعث رسوب احشایی اورات در این مورد شده باشند، اما پروتئین مازاد بر نیاز شاید دلیل عمده بوده باشد، چون این پرنده در مراحل مختلف زندگی با جیره تجاری استارتر ماکیان گوشتی تغذیه شده بود.
واژه های کلیدی: هایپریوریسمی، آزمایش مورکساید، مرغ لهستانی، توفوس، رسوباحشاییاورات

گزارش ابتلای گله‌های گوشتی حاصل از مادران واکسینه شده ضد رئوویروس به بیماری رئوویروس

منصور میاحی[۱]، سروش خادمیان[۲]، حسین حسینی[۳]
[۱] استاد بهداشت و بیماری‌های طیور دانشکده‌دامپزشکیِ دانشگاه شهید چمران اهواز
[۲]دانشجوی دکترای تخصصیِ بهداشت و بیماری‌های طیور دانشکده‌ی دامپزشکیِ دانشگاه شهید چمران اهواز، [۳]استادیار دانشکده دامپزشکی دانشگاه آزاد
Dr.s.khademian@gmail.com

در گله گوشتی به ظرفیت ۷۰/۰۰۰ قطعه هفته اول نشانه‌های لنگش و عدم تعادل در راه رفتن مشاهده گردید. با توجه به تلفات هفته اول (زیر ۱٪)،عدم وجودعلائم عفونت و چرک احتمال کمبود تغذیه ای مواد معدنی و ویتامینه مطرح گردید.با بررسی فرمولاسیون خوراک و تقویت گله با مواد معدنی و ویتامینه به آب آشامیدنی بهبودی حاصل نگردید. پرورش بصورت سکس جدا بوده و لنگش یکطرفه و نشسته بر روی یک مفصل در خروس مشاهده گردید. با افزایش سن موارد لنگش بیشتر گردید.میزان ابتلا در هفته دوم به ۵٪ رسید. میزان تلفات نرمال (۰.۱٪ روزانه) بود.
سن ۱۵ روزگی ۱۰نمونه پرنده جهت کشت باکتریایی از مفاصل ارسال ولی پاسخ آزمایش منفی بود.روز ۳۰،۳۰ نمونه خون جهت سنجش پادتن ضد رئو ویروس به روش ELISA به آزمایشگاه ارسال و همزمان ارسال مجدد نمونه جهت کشت از مفاصل انجام گرفت. نتایج آزمایش ELISA سرم با کیت بیوچک با میانگین ۸۰۳۸ با پراکندگی ۲۲٪ بود. همچنین*استافیلوکوس اورئوس* در کشت از مفاصل جدا شد.
بحث و نتیجه گیری: در ارزیابی میزان پادتن مادری هفته اول ویژه رئوویروس در محدوده ۲۰۰۰ بود، افزایش پادتن در ۳۰ روزگی، در کنار نشانه‌های بالینی لنگش،باز ماندن از رشد و FCR بالا در پرنده های مبتلا همراه بود. تورم و پارگی تاندون گاسترونمیوس،درگیری کندیل واپیکندیل ها،تغییر رنگ مایل به سبز مفصل در اثر پارگی عروق و نشت خون مشاهده گردید.به رئوویروس مشکوک شدیم و ۳۰ قطعه پرنده زنده از۳ سن مختلف جوجه های حاصل از یک گله مادر به آزمایشگاه مولکولی جهت تشخیص حضور ویروس رئوویروس ارسال گردید. گله ۳۵روزه تنها درتاندون مفصل، در جوجه های ۱۵ روزه درروده و در جوجه ۷ روزه هم روده و هم پانکراس به لحاظ حضور رئو ویروس در آزمون RT-PCR مثبت گردید.در بررسی سکوآنس تولی نوکلئوتیدی، هر ۳ ویروس مثبت شده دارای تولی یکسان بوده که میتواند موید انتقال از منبع واحد میباشد.
این جوجه‌های گوشتی نتاج گله مادری بودند که یک نوبت واکسن زنده S1133 در سن ۱۰ روزگی و دو نوبت واکسن کشته رئو ویروس در سنین۱۰ و ۲۰ هفته دریافت نموده است و پادتن هومورال اندازه گیری شده در آزمون ELISAغیرمستقیم در شروع تولید میانگین تیتر ۱۰۰۰۰ بود. طبق بررسی های گرفته در منطقه بروز لنگش‌های رئو ویروس در مزارع گوشتی علیرغم واکسیناسیون گله های مادر روبه افزایش است که میتواند فرضیه تغییر سویه ویروس در حال چرخش در مزارع با سویه واکسن را تقویت نماید.

Key words: Reovirus, Identification, Broiler, Elisa, RT-PCR

بررسی تست حساسیت آنتی‌بیوتیکی سویه های "ای کولای" جدا شده از لاشه های طیور گوشتی صنعتی ارجاعی به آزمایشگاه در شهرستان سبزوار در شش ماهه ابتدایی سال ۱۳۹۴ با استفاده از تست آنتی‌بیوگرام

زهرا سالاری[۱] ، موسی الرضا صادقیان[۲] ، سید امیر حسینی[۲]
۱. دانش‌آموخته دکترای دامپزشکی ۲. دانش‌آموختگان کارشناسی علوم آزمایشگاهی دامپزشکی
salari_z44@yahoo.com

مقدمه و هدف: باکتری ای کولای شامل سویه های بیماریزا و غیربیماریزایی هست که در دستگاه گوارش پستانداران و پرندگان زندگی می‌کنند. سویه هایی از این باکتری برای انسان بخصوص آنهایی که با صنعت طیور درارتباطند منجر به اسهال می‌شود. این باکتری هم به عنوان باکتری اولیه و هم ثانویه می‌تواند منجر به عفونت‌های سیستمیک و یا موضعی شود. این باکتری به نسبت در گله‌های طیور صنعتی شهرستان سبزوار شیوع داشته و خسارات اقتصادی، تلفات، کاهش رشد، مقاومتهای آنتی‌بیوتیکی و عدم پاسخ به درمان از عوارض استفاده خودسرانه آنتی‌بیوتیکها توسط افراد ناآگاه و عدم استفاده از تست آنتی‌بیوگرام توسط کلینیسین‌ها در درمان عفونتهایی که توسط این باکتری صورت می‌گیرد، می‌باشد.
مواد و روش کار: از تمامی لاشه‌های ارسالی به آزمایشگاه، بر روی محیط مک‌کانکی کشت داده شد. نمونه‌ها از قلب و کبد انتخاب شده بود، و سپس پرگنه هایی از آنرا به محیط کشت مولرهینتون آگار انتقال داده و سپس حساسیت آنها سنجیده شد.
نتایج و بحث: نتایج تحقیق در جدول زیر به درصد به نمایش درآمده است. لازم است قبل از تجویز هرگونه آنتی‌بیوتیکی ابتدا یک تست آنتی-بیوگرام گرفته شود و حساسیت آن سنجیده و سپس اقدام به درمان آنتی‌بیوتیکی کنیم، و برای جلوگیری بیشتر از مقاومت آنتی‌بیوتیکی از تجویز خودسرانه آنتی‌بیوتیکها بپرهیزیم. اقدام در حفظ مسایل بهداشتی و مدیریتی و استفاده از پروبیوتیکها توصیه می‌گردد.

شناسایی ویروس های شبه برونشیت "DY12-2" در عراق: اولین گزارش در خاورمیانه

ولید صکر[۱]، آرش قلیانچی لنگرودی[۲]، وحید کریمی[3]، امید مددگار[۴]، مسعود هاشم زاده[۵]
۱گروه میکروبیولوژی و ایمنولوژی، دانشکده دامپزشکی، دانشگاه تهران، ۲گروه بیماریهای طیور، دانشکده دامپزشکی، دانشگاه تهران
۳موسسه واکسن و سرم سازی رازی، ایران
ایمیل نویسنده مسوول: arashghalyanchi@gmail.com

کلیات: بیماری برونشیت عفونی (IBV)، بیماری بسیار واگیردار ماکیان می باشد که توسط ویروسی از جنس گاما کرونا ویروس ها ایجاد می شود. برونشیت عفونی بعنوان مهمترین عامل ایجاد بیماریهای تنفسی و خسارات شدید اقتصادی در صنعت پرورش طیور عراق و بسیاری دیگر از کشورها شناخته می شود. ویروس برونشیت عفونی ژنوتیپ های مختلفی دارد که ایمنی متقاطعی بین آنها اثبات نشده است. بدلیل بروز متداول جهش های نقطه ای و باز آرایی های ژنی در این ویروس و در نتیجه ایجاد واریانت های گوناگون، کنترل این بیماری دشوار و پیچیده می باشد. مطالعه حاضر به بررسی حضور سویه DY12-2 در کشور عراق پرداخته است. تنوع ژنتیکی و تکاملی ویروس برونشیت اغلب از طریق ژن S1مرد بررسی قرار می گیرد. این ژن دارای تنوع بسیار و ارتباط نزدیک با سروتیپ های مختلف می باشد، با این وجود ویروس های یک سروتیپ نیز می توانند درجات بالایی از گوناگونی را در خارج از ژن S نشان دهند.
مواد و روش کار: یک صد نمونه از درگیری های برونشیت جوجه های گوشتی طی سالهای 2015-2014 از مناطق مرکزی و جنوبی عراق جمع آوری شد. برای تایید بیماری برونشیت در نمونه ها از روش diagnostic nested RT-PCR استفاده شد. در این مطالعه برای بررسی ژنوتیپ ویروس ها از روش های سکانس ژنی و بررسی های فیلوژنیک بروی منطقه بسیار متغییر ژن S1 بهره برده شد.
بحث و نتیجه گیری: باز آرایی های مورد انتظار بواسطه بررسی های بیشتر بروی سکانس ژن S1 در ویروس های شبه DY12-2 تایید شد. این ویروس ها دارای شباهت بالایی (۹۸/۷۲ ٪) با ویروس های CK/CH/SC/DY12-2 ، CK/CH/ZJ/QZ12-2 و CH/Guangdong/Xindadi (GU938442) می باشند. سویه Dy12-2 در پی ایجاد بازآرایی ژنی در ویروس های CK/CH/GD/LZ09 و TA09 در چین بوجود آمده و اکنون از سویه های در حال گردش چین محسوب می شود. در این مطالعه برای اولین بار حضور ویروس های شبه DY12-2 در عراق طی سالهای 2015-2014 اثبات شده است. با توجه به ماندگار شدن این ژنوتیپ جدید در چین، میتوان پیش بینی نمود که در آینده این ژنوتیپ در عراق و خاورمیانه نیز حضور پایدار خواهد داشت.
واژگان کلیدی: ویروس برونشیت عفونی، ژنوتیپ شبه DY12-2، بررسی های فیلوژنیک، جوجه های گوشتی، عراق

جداسازی کمپیلوباکتر ژژونی و کولی از گوشت بلدرچین ، کبک و شتر مرغ

حمیدرضا کاظمینی، حمیدرضا عکاف زاده، ابراهیم رحیمی

گونه های کمپیلوباکتر یکی از شایع ترین عوامل گاستروانتریت حاد باکتریایی در انسان هستند که عموما از طریق مواد غذایی با منشا دامی به انسان منتقل می شوند. این مطالعه با هدف بررسی شیوع گونه های کمپیلوباکتر ، از گوشت خام بلدرچین ، کبک ئ شتر مرغ در شهرستان اهواز - ایران صورت پذیرفت. از خرداد ماه ۱۳۸۸ تا اسفند ماه ۱۳۸۹ تعداد ۱۰۴ نمونه مشتمل بر ۵۰ نمونه بلدرچین ، ۳۰ نمونه کبک و تعداد ۲۴ نمونه گوشت خام شترمرغ از گوشت فروشی های سطح شهر اهواز جمع آوری و از نظر حضور گونه های کمپیلوباکتر مورد آنالیز قرار گرفتند. گونه های کمپیلوباکتر از ۲۸ تعداد نمونه از ۵۰ (۵۸درصد) نمونه بلدرچین، ۹ نمونه از ۳۰ نمونه ی کبک (۳۰ درصد) و تعداد ۳ نمونه از ۲۴ نمونه شترمرغ (۱۲/۵ درصد) جداسازی شدند. از تعداد ۴۰ نمونه جدا شده ، تعداد ۳۶ (۹۰ درصد) تای آن کمپیلوباکتر ژژونی و تعداد ۴ (۱۰ درصد) تای باقی مانده مربوط به کمپیلوباکتر کولی بودند. نتایج حاصل از این مطالعه نشان داد با توجه به مصرف بالای گوشت طیور در شهر اهواز و به دلیل آلودگی بالای این گوشت به ارگانیسم کمپیلوباکتر و یا حتی آلودگی های پس از فرآوری و به منظور تضمین امنیت غذایی گوشت طیور بایستی قبل از مصرف به طور مناسبی پخته شوند.

کلمات کلیدی: کمپیلوباکتر ، بلدرچین ، کبک ، شترمرغ

بررسی شیوع و مقاومت ضد میکروبی سویه های سالمونلا از گوشت خام بوقلمون ، شتر مرغ و کبک در ایران

ابراهیم رحیمی، حمیدرضا عکاف زاده، حمیدرضا کاظمینی، مهرداد عامری

هدف از این مطالعه تعیین شیوع سالمونلا ، شامل سروتیپ ها و حساسیت ضد میکروبی سویه های سالمونلا ی کشف شده از گوشت خام بوقلمون ، شتر مرغ وکبک در اصفهان - ایران بود.

تعداد ۲۴۹ نمونه بوقلمون ، شتر مرغ وکبک به طور تصادفی از ۸ گوشت فروشی از فروردین ۱۳۸۶ تا خرداد ۱۳۸۷ ، جمع آوری گردید. تمام نمونه ها از نظر حظور سالمونلا ، سروتیپینگ و از نظر حساسیت ضد میکروبی مورد آزمایش قرار گرفتند.

شیوع سرتاسری سالمونلا ۶/۸ ٪ بود. شیوع سالمنلا از لحاظ آماری به طور معناداری در گوشت بوقلمون (۹/۷ ٪) بیشتر از گوشت شترمرغ (۴/۶ ٪) بود. از هیچ یک از نمومه های گوشت کبک ، سالمونلا جدا نشد . سویه های سالمونلا های جدا شده از گوشت بوقلمون و شتر مرغ شامل ۴ سروتیپ مختلف شامل : سالمونلا انتریکا – سروتیپ تیفی موریوم ، سالمونلا انتریکا – سروتیپ انتریتیدیس ، سالمونلا انتریکا – سروتیپ آگونا ، سالمونلا انتریکا – سروتیپ پاراتیفی ، بودند. حساسیت ۱۷ سویه جدا شده به ۱۲ داروی ضدمیکروبی با استفاده از روش دیسک دیفوزیون (دیسک منتشر) ، تعیین شد. مقاومت به نالیدیکسیک اسید شایع ترین (۵۸/۸ ٪) یافته بود و به دنبال آن مقاومت به تتراسایکلین (۴۱/۲ ٪) ، استرپتومایسین (۲۹/۴ ٪) ، تری متوپریم (۲۳/۵ ٪) ، کلرامفنیکل (۱۱/۸ ٪) و سیپروفلوکساسین (۵/۹ ٪) ، بیشترین بودند.

کلمات کلیدی: مقاومت ضد میکروبی ، شترمرغ ، کبک ، سالمونلا ، بوقلمون

شناسایی و جداسازی گونه های کمپیلوباکتر از گوشت خام طیور و بوقلمون در ایران

ابراهیم رحیمی، حمیدرضا کاظمینی، حمیدرضا عکاف زاده

گونه های کمپیلوباکتر به عنوان شایع ترین پاتوژن های باکتریایی عامل گاستروانتریت در انسان ها در سرتاسر جهان بوده و مصرف گوشت طیور مشکوک به آلودگی با این میکروارگانیسم ها منجر به بروز بیماری خواهد شد. بنابراین این مطالعه با هدف تعیین میزان شیوع گونه های کمپیلوباکتر از گوشت خام در شهرستان اهواز – ایران ، انجام پذیرفت. از خردادماه ۱۳۹۲ تا بهمن ماه ۱۳۹۳ ، تعداد ۱۱۰ نمونه گوشت خام شامل : ۶۰ عدد طیور ، ۵۰ عدد بوقلمون به طور تصادفی از گوشت فروشی های سطح شهر اهواز – ایران خریداری و از نظر حظور گونه های کمپیلوباکتر مورد آزمایش قرار گرفتند . گونه های کمپیلوباکتر از تعداد ۳۰ (۲۷.۲۷ ٪) نمونه از ۱۱۰ نمونه جدا شدند. بیشترین میزان شیوع گونه های کمپیلوباکتر در گوشت طیور (۶۱.۷ ٪) و به دنبال آن در گوشت بوقلمون (۳۸.۳ ٪) بودند . بیشترین میزان شیوع گونه های کمپیلوباکتر جدا شده از گوشت خام مربوط به کمپیلوباکتر ژژونی (۸۸.۳ ٪) و بقیه مربوط به کمپیلوباکتر کلی (۱۱.۷ ٪) ، بودند . تمام ۳۰ سویه شناسایی شده به عنوان کمپیلوباکتر ژژونی و کمپیلوباکتر کلی به روش PCR نیز مثبت بودند . به طور معناداری میزان شیوع گونه های کمپیلوباکتر در نمونه های گرفته شده در فصل تابستان (۴۴.۱) ، بیشتر بودند. بنابراین، به منظور تضمین امنیت غذایی گوشت طیور بایستی قبل از مصرف به طور مناسبی پخته شوند.

کلمات کلیدی : کمپیلوباکتر ، گوشت خام ، طیور ، بوقلمون .

بررسی اثرات ناشی از بیماری برونشیت بر معدوم‌سازی گله‌هایطیور گوشتی کشور در سال ۱۳۹۱

نفیسه قاسمی[1]، سعیدبکایی[1]، سید علی غفوری[2]، سعید امیرحاجیلو[2]، محمدحسین فلاح[1]*
۱- دانشکده دامپزشکی دانشگاه تهران
۲- سازمان دامپزشکی کشور
***Ghasemi86dvm@yahoo.com**

سندرم کمپلکس تنفسی یکی از مشکلات مهم صنعت طیور کشور در دوره پرورش بویژه در گله‌های طیور گوشتی می‌باشد و بعنوان یک عامل مهم ایجاد خسارت اقتصادی در حال افزایش است. در بین عوامل ایجادکننده سندرم کمپلکس تنفسی،بیماری برونشیت یک بیماری ویروسی حاد وبسیار مسری ماکیان است و یکی از شایع ترین بیماری های طیور محسوب می شود که کنترل آن بسیار مشکل است. دراین مطالعه اطلاعات سوابق ثبت شده در پرونده ۱۴۷ واحد مرغداری گوشتی که به دلیل داشتن تلفات بالا با روند صعودی در ۵ روز متوالی در سال ۱۳۹۱ در کل کشور معدوم شده بودند، استخراج و با استفاده از نرم‌افزار آماری SPSS (16.0)تجزیه و تحلیل شد. نتایج نشان داد که بیماری برونشیت بعد از بیماری نیوکاسل بیشترین مشارکت را در وقوع سندرم کمپلکس تنفسی داشته است. در بین گله‌های معدوم شده، واکسیناسیون یک عامل اصلی محسوب می‌شد که طبق نتایج، فراوانی نسبی واحدهای معدوم شده‌ای که تنها یکنوبتواکسن برونشیت زنده به کار برده‌اند بیشتر از واحدهای معدوم شده‌ای است که دو نوبت واکسیناسیون برونشیت زنده انجام داده‌اند (بترتیب ۶۶٪ و ۲۶/۵٪)($P<0.001$). علاوه براین روش واکسیناسیون واکسنبرونشیت زنده نیز به عنوان یک عامل مؤثر در معدوم‌سازی، نشان داده شد که فراوانی نسبی واحدهای معدوم شده‌ای که در نوبت اول واکسیناسیون برونشیت از روش اسپری (۴۹٪) و در نوبت دوم از روش خوراکی (آشامیدنی) استفاده کردند (۲۵/۲٪) به طور معنی‌داری بیشتر می‌باشد($P<0.001$). به طور کلی بنظر می‌رسد برونشیت بعنوان یک عامل مؤثر در ایجاد سندرم کمپلکس تنفسی و معدوم‌سازی گله‌های گوشتی کشور دخیل است و انجام دو نوبت واکسیناسیون با واکسن زنده برونشیتو آن هم با روش اسپری در هر دو نوبت در دوره پرورش، می‌تواند در کاهش این معدوم‌سازی مؤثر باشد.

کلمات کلیدی: برونشیت، کمپلکس تنفسی، معدوم سازی گله، واکسیناسیون، ایران

اثر ژنوتیپ ناحیه پروموتور ژن گاما اینترفرون بر جایگاه اتصال فاکتورهای رونویسی در مرغ بومی خوزستان

سالم مرمضی[1]، حسن حبیبی[1]
گروه علوم دامی، دانشکده کشاورزی و منابع طبیعی، دانشگاه خلیج فارس بوشهر

مقدمه: شناسایی ژنهای درگیر در سیستم ایمنی جهت مطالعه سیستم ایمنی و برنامه‌های اصلاح نژاد طیور از اهمیت بالایی برخودار هستند. یکی از عواملی که سطح رونوشت برداری این ژنها را تحت تاثیر قرار می‌دهد چندشکلی در ناحیه بالادست ژنها بوده که در جایگاه اتصال فاکتورهای رونویسی قرار دارند. در مطالعه حاضر اثر ژنوتیپ جایگاه‌های اتصال فاکتورهای رونویسی ژن گاما اینترفرون به عنوان ژنی که در سیستم ایمنی دخالت دارد بر روی جایگاه های اتصال فاکتورهای رونویسی مرغ بومی خوزستان مورد مطالعه قرار گرفت.
مواد و روشها: جهت شناسایی چندشکلی‌های ناحیه بالادست ژن گاما اینترفرون، DNA از ۲۰ نمونه خون مرغ بومی خوزستان با استفاده از روش فنل-کلروفروم استخراج گردید و ناحیه دربرگیرنده پروموتور ژن با استفاده از پرایمر و PCR تکثیر شد. محصول PCR پس از خالص سازی در دو جهت توسط شرکت ماکروژن توالی یابی شد. توالی توسط نرم افزار Mega5 ویرایش شد و بعد از آن جهت شناسایی اثر ژنوتیپ بر جایگاه اتصال فاکتور های رونویسی، آنالیز برخطی توسط نرم افزار TFscansite صورت گرفت.
نتایج و بحث: در این مطالعه دو چندشکلی در ناحیه بالادست ژن گاما اینترفرون جوجه‌های بومی خوزستان شناسایی شد. این تنوع ژنتیکی مشابه ژنوتیپ‌های این ژن در پایگاه داده NCBI با شماره ثبت EF692494.1 و EF692495.1 بوده است. جهش‌ها G347A و C553T و براساس EF692494 نامگذاری گردیده شدند (GC= ژنوتیپ ۱ و AT=ژنوتیپ ۲). آنالیز In Silico نشان داد که ناحیه پروموتور این ژن جایگاه‌های اتصال زیادی برای فاکتورهای رونویسی دارد. همچنین مشاهده شد که چندشکلی G347A در ژنوتیپ ۲ باعث از دست دادن جایگاه اتصال فاکتور رونویسی GATA-1_CS2 شده است. علاوه بر این، جهش C553T در ژنوتیپ ۲ جایگاه اتصال فاکتورهای رونویسی AP-2-alpha/gamma، gamma-IRE_CS و Thy-1-FP-VI/VII را نیز نداشته است. این نتایج نشان می‌دهد که ژنوتیپ ۲ تعدادی از جایگاه های اتصال فاکتورهای رونویسی را از دست داده که ممکن است سطح رونوشت برداری این ژن را کاهش دهد. بنابراین مطالعات دیگری نیاز هست انجام گیرد تا ارتباط بین ژنوتیپ های ناحیه پروموتور این ژن با سطح بیان و سیستم ایمنی مورد ارزیابی قرار گیرند.
کلمات کلیدی: ژن اینترفرون، چندشکلی، فاکتورهای رونویسی، آنالیز In Silico، سیستم ایمنی، مرغ بومی خوزستان.

شناسایی جایگاه اتصال عناصر سرکوب کننده و فاکتورهای هسته ای کارکردی در پروموتور ژن Gal2 مرغ بومی خوزستان

سالم مرمضی[1]، حسن حبیبی[1]، جبار جمالی[2]
گروه علوم دامی، دانشکده کشاورزی و منابع طبیعی، دانشگاه خلیج فارس بوشهر
گروه علوم دامی، دانشکده کشاورزی، دانشگاه ایلام

مقدمه: شناسایی جایگاه اتصال عناصر سرکوب کننده و فاکتورهای هسته‌ای کارکردی یا جایگاه‌های اتصال فاکتورهای رونویسی (TFBSs) اولین گام جهت کشف کدهای تنظیمی DNA است. مطالعه بیان و شناسایی TFBSها در ناحیه پروموتور ژنهای سیستم دفاعی بدن هم از لحاظ سیستم ایمنی و هم از لحاظ اصلاح نژاد از اهمیت زیادی برخوردار می‌باشند. در مطالعه حاضر، آنالیز In Silico به منظور شناسایی جایگاه‌های اتصال فاکتورهای رونویسی در ناحیه بالا دست ژن Gal2 که در سیستم ایمنی دخالت دارد در مرغ بومی خوزستان انجام شد.
مواد و روشها: نمونه‌های DNA ژنومی از ۲۰ مرغ بومی خوزستان بدست آمد. این DNA ژنومی با استفاده از روش فنل-کلروفروم از سلول‌های سفید خون استخراج گردید. براساس ژن Gal2 مرغ (GenBank accession No. AY621317.1)، یک جفت پرایمر برای تکثیر ناحیه پروموتور ژنGal2 طراحی گردید. محصول واکنش چرخه پلی مراز (PCR) به شرکت ماکروژن برای توالی یابی ارسال گردید. نتایج توالی‌یابی با استفاده از نرم افزار Mega5 ویرایش گردید. در ادامه توالی برای هر گونه جهش مورد مطالعه قرار گرفت و در پایان آنالیز In Silico جهت شناسایی جایگاه اتصال فاکتورهای رونویسی در ناحیه پروموتور ژن Gal2 با استفاده از نرم افزار برخط TFscansite انجام گرفت.
نتایج و بحث: در نمونه‌های مورد مطالعه جهت این تحقیق، نتایج توالی‌یابی نشان داده‌اند که چندشکلی در ناحیه پروموتور ژن Gal2 وجود ندارد. آنالیز In Silico نشان داد که ناحیه پروموتور ژن Gal2 دارای جایگاه‌های اتصال فراوانی برای فاکتورهای رونویسی CdxAT، betaP-F1، lysozyme-ET، c-Myb، MCBF_RS، H1-box، GATA-CTCF و HiNF-A-CTCF می‌باشد. این نتایج نشان داده که ژن Gal2 بوسیله تعداد زیادی فاکتور رونویسی تنظیم می‌شود و فاکتورهای رونویسی زیادی می‌توانند سطح رونوشت برداری آن را تحت تاثیر قرار دهند. براین اساس می‌توان گفت که ژن Gal2 به عنوان یک ژن کاندیدا برای مطالعات بعدی بخصوص مطالعات مربوط به سیستم ایمنی و بیان ژن مناسب دانست.
کلمات کلیدی: ژن Gal2، فاکتورهای رونویسی، مرغ بومی خوزستان، سیستم ایمنی

بررسی الگوی مقاومت دارویی سالمونلاهای جداشده از طیور گوشتی اطراف شهرستان سنندج،کردستان

دولت یابی س.، پیغمبری ص.م.*
گروه بیماری‌های طیور،دانشکده دامپزشکی،دانشگاه تهران،تهران،ایران
ایمیل نویسنده مسؤول:s.dolatyabi@gmail.com

مقدمه:سالمونلا یکی از مهمترین عوامل بیماریزای مشترک انسان و دام است که شیوع آن یکی از علل نگرانی در جوامع بشری است. روند استفاده نادرست و بی‌رویه از داروهای ضدمیکروبی در واحدهای پرورش طیور،باعث افزایش میزان مقاومت در پاتوژن‌های باکتریایی طیور شده است. هدف از این مطالعه بررسی الگوی مقاومت دارویی در سالمونلاهای جداشده از گله‌های طیور گوشتی اطراف شهرستان سنندج در استان کردستان است.
مواد و روش کار: میزان مقاومت چهار جدایه سالمونلا از میان ۲۰ گله گوشتی(۲۲۲۰ نمونه مدفوعی) اطراف شهرستان سنندج بر علیه ۲۰ ترکیب ضد میکروبی بر اساس روش استاندارد دیسک دیفوزیون انجام شد.
بحث و نتیجه گیری: همه سالمونلاهای جداشده به فلورفنیکول، سفکسیم، سفتریاکسون، سفتازیدیم و جنتامایسین حساسیت کامل داشتند و همچنین هر چهار جدایه سالمونلا نسبت به فلومکوئین، نالدیسیک اسید و جنتامایسین مقاوم بودند.درصد جدایه‌هایی که به این داروها مقاوم بودند، عبارت است از: ۱۰۰٪ به نالدیسیک اسید، ۷۵٪ به لینکوسپکتین،انروفلوکساسین، فلومکوئین و تتراسایکلین. در بین چهار جدایه سالمونلا وقوع مقاومت چندگانه شایع بود به طوری که آن‌ها حداقل به پنج دارو مقاوم بودند. مقاومت چندگانه به ۱۱ و ۱۲ ترکیب ضد میکروبی در بین ۲۵٪ از جدایه‌ها مشاهده شد. نتایج این مطالعه مقاومت جدایه‌های سالمونلای طیور به ترکیبات ضدمیکروبی معمول در این صنعت رانشان می‌دهد.این یافته‌ها برای صنعت طیور ایران دارای اهمیت و از نقطه نظر بهداشت عمومی نیز مورد توجه است.
کلمات کلیدی: مقاومت، سالمونلا، طیور، سنندج، ایران

مقایسه ید وداروی برم هگزین موجود در بازار

هادی حق بین نظرپاک[1]،شاهرخ رنجبربهادری[2]،هادی قاسمی نوقابی[3]*
[1]گروه علوم درمانگاهی،دانشکده دامپزشکی،دانشگاه آزاداسلامی واحدگرمسار،گرمسار،ایران [2]گروه پاتوبیولوژی،،دانشکده دامپزشکی،دانشگاه آزاداسلامی واحدگرمسار،گرمسار،ایران، [3]دانشجوی دکتری دامپزشکی،،دانشگاه آزاداسلامی واحدگرمسار

مقدمه:برم هگزین بازکننده مجاری تنفسی و رقیق کننده موکوس است وازطرفی احتمالا بخاطرتحریک فعالیت آنزیم لیزوزومالو درنتیجه شکستن رشته های پروتئینی موکوپلی ساکاریدی،ویسکوزیته آنرا کاهش میدهد.علاوه براین برم هگزین با افزایش ترشحات موکوسی رقیق شده،باعث بالارفتن سطح پادتنهای IgAوIgG در مجاری تنفسی میشود که دردرمان علامتی بیماریهای عفونی تنفسی بسیارمؤثراست.
مواد و روش کار:هدف از این مطالعه ارزیابی کارایی برم هگزین۱٪ محلول در آب ساخت شرکت A و مقایسه آن با محصول مشابه ساختشرکتB می باشد.این مطالعه در مزرعه پرورش مرغ گوشتی به ظرفیت ۳۰۰۰۰ قطعه که واجد ۴ سالن مجزا بود انجام گرفت در هر سالن تعداد ۲۰۰ پرنده به عنوان گروه شاهد در نظر گرفته شد.سالن ها دارای شرایط یکسان از نظر مدیریت،تغذیه،سن،نژاد و.... بودند.در سن ۳۰ روزگی پرندگان درگیر با بیماری های تنفسی شدند.از روز ۳۱ به یک سالن داروی Aو به سالن دیگر داروی B را دادیم.درمان در ۳۵ روزگی پایان بافت.سپس ما به مقایسه علائم درمانگاهی،کالبد گشایی،میانگین وزن روزانه،دان مصرفی،ضریب تبدیل غذایی بین گروه های درمان شده و شاهد پرداختیم.ضریب تبدیل غذایی در سالنی که داروی A دریافت کرده بود در روزهای ۴۸،۴۲،۳۸،۳۵،۳۲به ترتیب ۱.۷۱, ۱.۷۹, ۱.۸۲, ۱.۹۷, ۲ و در گروه شاهد یک ۱.۷۱, ۱.۸۱, ۱.۹۲, ۲.۰۵, ۲.۰۹ بود.ضریبتبدیلغذاییدر سالنی که داروی Bدریافت کرده بود درروزهای۴۸،۴۲،۳۸،۳۵،۳۲به ترتیب۱.۷, ۱.۷۶, ۱.۸, ۱.۹۵, ۱.۹۹ودرگروه شاهد دو ۱.۷, ۱.۸۲, ۱.۹۲, ۲.۰۷, ۲.۱۱ بود.
نتیجه گیری :نتایج حاصله درمطالعه حاضردرمورد میزان وزن،ضریب تبدیل غذایی،درصدتلفات بیانگر شرایط بهتر گروههای درمان شده باداروی برم هگزین۱٪درمقایسه باگروههای شاهد درمان نشده با دارو می باشد.هرچندکه این تفاوتها به لحاظ آماری واجد اختلاف معنی دار نبود ولیکن به لحاظ بالینی بهبود مشخصت نفسی باآغاز درمان درگروههای درمانی،درمقایسه باگروههای شاهدرویت گردید.با توجه به نتایج به دست آمده ازمطالعه حاضر داروی برم هگزین۱٪ساخت شرکت A همانند داروی مشابه ساخت شرکت B واجد اثرات درمانی درروندکنترل شرایط بالینی وعوارض تنفسی درپرندگان موردمطالعه بود.
کلمات کلیدی:برم هگزین،بازکننده مجاری تنفسی،رقیق کننده موکوس،ضریب تبدیل غذایی،درصدتلفات

مقایسه ید وداروی انروفلوکساسین موجوددربازار

هادی حق بین نظرپاک*[۱]،شاهرخ رنجبربهادری[۲]،آرین شریفی [۳]،یاسرصلبی[۳]،هادی قاسمی نوقابی[۴]
[۱]گروه علوم درمانگاهی،دانشکده دامپزشکی،دانشگاه آزاداسلامی واحدگرمسار،گرمسار،ایران، [۲]گروه پاتوبیولوژی،،دانشکده دامپزشکی،دانشگاه آزاداسلامی واحدگرمسار،گرمسار،ایران، [۳]دانش آموخته دکتری دامپزشکی،،دانشگاه آزاداسلامی واحدگرمسار،گرمسار،ایران، [۴]دانشجوی دکتری دامپزشکی،،دانشگاه آزاداسلامی واحدگرمسار،گرمسار،ایران

مقدمه: انروفلوکساسین دارویی باکتریسید و وسیع الطیف از گروه فلوروکینولون ها می باشد که از طریق مهار عمل آنزیم DNA gyrase باعث توقف همانند سازی DNA و در نتیجه مرگ باکتری ها می شود. این دارو برای درمان و کنترل بیماری های ناشی از باسیل ها و کوکسی های گرم منفی هوازی و باکتری های گرم مثبت و ... استفاده می گردد.

مواد و روش کار: هدف از این مطالعه ارزیابی کارایی محلول خوراکی انروفلوکساسین سدیم ۱۰٪ شرکت A و مقایسه آن با محصول مشابه ساخت شرکت B می باشد. . این مطالعه در مزرعه پرورش مرغ گوشتی به ظرفیت ۷۰۰۰۰قطعه که واجد۸ سالن مجزا بود انجام گرفت در هر سالن تعداد ۲۰۰ پرنده به عنوان گروه شاهد در نظر گرفته شد.سالن ها دارای شرایط یکسان از نظر مدیریت،تغذیه،سن،نژاد و.... بودند. ، در سن ۳۴ روزگی پرندگان مبتلا به عفونت کلی باسیلوز شدند.از ۳۶ روزگی به یک سالن داروی Aو به سالن دیگر داروی B را دادیم. درمان در۴۰ روزگی پایان بافت. سپس ما به مقایسه علائم درمانگاهی، کالبد گشایی، میانگین وزن روزانه،دان مصرفی،ضریب تبدیل غذایی بین گروه های درمان شده و شاهد پرداختیم. ضریب تبدیل غذایی در سالنی که داروی A دریافت کرده بود در روزهای ۳۶, ۳۸, ۴۰, ۴۲, ۴۴, ۴۶ به ترتیب ۱.۶۸, ۱.۷۴, ۱.۷۹, ۱.۸۳, ۱.۹, ۱.۹۸ و در گروه شاهد یک۱.۶۸, ۱.۷۲, ۱.۷۶, ۱.۸۱, ۱.۹۳, ۲.۱ بود. ضریب تبدیل غذایی در سالنی که داروی B دریافت کرده بود در روزهای ۳۶, ۳۸, ۴۰, ۴۲, ۴۴, ۴۶ به ترتیب ۱.۶۵, ۱.۷۳, ۱.۷۷, ۱.۸۱, ۱.۸۹, ۱.۹۶ و در گروه شاهد دو ۱.۶۵, ۱.۷۲, ۱.۷۷, ۱.۸۰, ۱.۹۱ بود.

نتیجه گیری : نتایج حاصله در مطالعه حاضر در مورد میانگین وزن روزانه،ضریب تبدیل غذایی، درصد تلفات بیانگر شرایط بهتر گروه های درمان شده با داروی انروفلوکساسین سدیم ۱۰٪ در مقایسه با گروه های شاهد درمان نشده با دارو می باشد. هر چند که این تفاوت ها به لحاظ آماری واجد اختلاف معنی دار نبود ولیکن به لحاظ بالینی بهبود مشخص در درمان کلی باسیلوز با آغاز درمان در گروه های درمانی، در مقایسه با گروه های شاهد درمان نشده رویت گردید. با توجه به نتایج به دست آمده از مطالعه حاضر داروی انروفلوکساسین سدیم ۱۰٪ ساخت شرکتA همانند داروی مشابه ساخت شرکت B واجد اثرات درمانی در روند کنترل شرایط بالینی و عوارض تنفسی در پرندگان مورد مطالعه بود.

کلمات کلیدی: انروفلوکساسین، کلی باسیلوز، توقف همانند سازی، میانگین وزن، ضریب تبدیل غذایی

مقایسه دو داروی تیامولین موجود دربازار

هادی حق بین نظرپاک*[۱]،شاهرخ رنجبربهادری[۲]،هادی قاسمی نوقابی[۳]
[۱]گروه علوم درمانگاهی،دانشکده دامپزشکی،دانشگاه آزاداسلامی واحدگرمسار،گرمسار،ایران، [۲]گروه پاتوبیولوژی،،دانشکده دامپزشکی،دانشگاه آزاداسلامی واحدگرمسار،گرمسار،ایران، [۳]دانشجوی دکتری دامپزشکی،،دانشگاه آزاداسلامی واحدگرمسار،گرمسار،ایران

مقدمه:تیامولین آنتی بیوتیکی نیمه ساختگی ازگروه آنتی بیوتیکهای باکتریواستاتیک بوده که مانع ازساخت پروتئین توسط باکتری میشودوبرعلیه باکتریهای گرم مثبت وگرم منفی کاربرد دارد.ین دارو میل ترکیبی بسیار زیادی برای اتصال به تحت واحد ۵۰S ریبوزوم باکتری دارد وبه این S۵۱این دارو میل ترکیبی بسیارزیادی برای اتصال به تحت واحد ترتیب سبب ایجادگسستگی درزنجیره پپتیدی سنتز شده توسط باکتری گردیده و با مهار سنتز پروتئین باکتریایی اثر باکتریواستاتیکی خودرا اعمال میکند.

مواد و روش کار:هدف ازاین مطالعه ارزیابی کارایی داروی تیامولین ۱۲.۵٪ خوراکی ساخت شرکتA ومقایسه آن با محصول مشابه ساخت شرکتBمیباشد. این مطالعه درمزرعه پرورش مرغ گوشتی به ظرفیت ۳۰۰۰۰ قطعه که واجد ۴ سالن مجزابود انجام گرفت درهرسالن تعداد ۲۰۰ پرنده به عنوان گروه شاهد درنظرگرفته شد.سالنها دارای شرایط یکسان ازنظر مدیریت،تغذیه،سن،نژادو.... بودند.درسن۳۱روزگی پرندگان درگیر با بیماریهای تنفسی شدند.به منظوردرمان گله،به یک سالن داروی Aوبه سالن دیگرداروی Bرادادیم.درمان در۳۴روزگی پایان یافت.سپس ما به مقایسه علائم درمانگاهی،کالبدگشایی،میانگین وزن روزانه،دان مصرفی،ضریب تبدیل غذایی بین گروههای درمان شده و شاهدپرداختیم. میانگین وزن روزانه درسالنی که داروی Aدریافت کرده بود درروزهای۳۱, ۳۲, ۳۳, ۳۴, ۳۹, ۴۶به ترتیب۱۳۵۸, ۱۴۸۴, ۱۵۴۰, ۱۶۷۸, ۱۹۹۴, ۲۵۲۵درسالنی که داروی Bدریافت کرده بود به ترتیب ۱۳۶۳, ۱۵۰۰, ۱۵۵۰, ۱۶۸۰, ۱۹۹۰, ۲۵۰۱ و در گروه شاهد ۱۳۷۵, ۱۴۷۲, ۱۵۳۲, ۱۶۲۰, ۱۹۰۷, ۲۳۸۸ بود.

نتیجه گیری :نتایج حاصله درمطالعه حاضردرمورد میزان وزن،ضریب تبدیل غذایی،درصد تلفات بیانگر شرایط بهتر گروههای درمان شده باداروی تیامولین ۱۲.۵٪ خوراکی درمقایسه باگروههای شاهددرمان نشده بادارو میباشد. هرچندکه این تفاوتها به لحاظ آماری واجد اختلاف معنی دار نبود ولیکن به لحاظ بالینی بهبود مشخص تنفسی با آغاز درمان درگروههای درمانی،درمقایسه باگروههای شاهد رویت گردید.باتوجه به نتایج بهدست آمده از مطالعه حاضرداروی برم هگزین۱٪ساخت شرکتA همانندداروی مشابه ساخت شرکتB واجداثرات درمانی درروند کنترل شرایط بالینی وعوارض تنفسی درپرندگان مورد مطالعه بود.

کلمات کلیدی:تیامولین،باکتریواستاتیک،میانگین وزن روزانه،ضریب تبدیل غذایی

مقایسه ی دوداروی سولفادیمتوکسین ۲۰٪+ تریمتوپریم ۴٪موجوددربازار

هادی حق بین نظرپاک*[۱]،خاطره کفشدوزان[۲]،هادی قاسمی نوقابی[۳]
[۱]گروه علوم درمانگاهی،دانشکده دامپزشکی،دانشگاه آزاداسلامی واحدگرمسار،گرمسار،ایران، [۲]گروه میکروبشناسی،،دانشکده دامپزشکی،دانشگاه سمنان،سمنان،ایران، [۳]دانشجوی دکتری دامپزشکی،،دانشگاه آزاداسلامی واحدگرمسار،گرمسار،ایران

مقدمه:سولفادیمتوکسین ۲۰٪+ تریمتوپریم ۴٪ ازطریق مهار آنزیم PABA از سنتز اسیدفولیک جلوگیری کرده و در نتیجه فعالیتهای حیاتی باکتری متوقف میشود و ترکیب فوق با تقویت اثر یکدیگر ،مانع ازساخته شدن DNA در باکتری شده وموجب مرگ باکتری میگردد.این دارو درمان کوریزا وبیماریهاییکه توسط باکتریهای گرم مثبت و گرم منفی در مرغ و بوقلمون بکار می رود.

مواد و روشکار:هدف ازاین مطالعه ارزیابی کارایی سولفادیمتوکسین ۲۰٪+ تریمتوپریم ۴٪ساخت شرکت Aومقایسه آن بامحصول مشابه ساخت شرکتBمیباشد. این مطالعه درمزرعه پرورش مرغ گوشتی به ظرفیت ۳۰۰۰۰ قطعه که واجد ۴ سالن مجزابودانجام گرفت درهرسالن تعداد ۲۰۰ پرنده به عنوان گروه شاهددرنظرگرفته شد.سالنهادارای شرایط یکسان ازنظرمدیریت،تغذیه،سن،نژادو.... بودند.پرندگان مبتلا به عفونت کلی باسیلوز شدند.به یک سالن داروی A و به سالن دیگردارویBرادادیم.سپس ما به مقایسه علائم درمانگاهی،کالبدگشایی ،میانگین وزن روزانه،دان مصرفی،ضریب تبدیل غذایی بین گروههای درمان شده وشاهدپرداختیم. میانگین وزن روزانه در سالنی که دارویAدریافت کرده بود درروزهای۳۲, ۳۶, ۴۰, ۴۴, ۴۸ به ترتیب۱۱۸۰.۳۳, ۱۴۳۴.۶۷, ۱۷۳۲.۶۷, ۲۱۶۹.۳۳, ۲۳۶۴ودرگروه شاهدیک۱۱۷۸, ۱۴۰۰, ۱۶۲۰, ۱۹۲۵, ۲۲۱۰ بود.درسالنی که دارویBدریافت کرده بود درروزهای۳۲, ۳۶, ۴۰, ۴۴, ۴۸ به ترتیب ۱۱۵۷.۶۷, ۱۴۲۵.۳۳, ۱۶۵۲.۳۳, ۱۹۴۱, ۲۲۹۴ودرگروه شاهد دو ۱۱۵۷, ۱۴۰۵, ۱۶۰۵, ۱۹۱۰, ۲۱۵۰ بود.

نتیجه گیری :نتایج تحقیق حاضرکه درموردکارازمایی بالینی داروی سولفادیمتوکسین ۲۰٪+ تریمتوپریم ۴٪صورت گرفت نشان داد که این دارو بردرمان کلی باسیلوز طیور واثر بخشی برروند وزنگیری،ضریب تبدیل،درصدتلفات و وضعیت بالینی وکالبدگشایی،بیانگر شرایط بهتر گروههای درمان شده در مقایسه با گروه شاهد بود. با توجه به نتایج به دست آمده ازمطالعه حاضرداروی سولفادیمتوکسین ۲۰٪+ تریمتوپریم ۴٪ساخت شرکتA همانند داروی مشابه ساخت شرکتB واجد اثرات درمانی در روند کنترل شرایط بالینی وعوارض تنفسی درپرندگان موردمطالعه بود.

کلمات کلیدی:سولفادیمتوکسین،تریمتوپریم،ساخته شدن DNA،میانگین وزن روزانه،ضریب تبدیل غذایی

بررسی اثرات ویروس آنفلوآنزای طیورH9N2بر روی بافت کلیه جوجه های SPF

وحید حاجی آبالو*[۱]، پیمان بیژن زاد[۱]، آیدین عزیزپور[۲]، سینا طائفه شکر[۳]، یاشار آذری کی[۳]
۱- گروه علوم درمانگاهی،واحدتبریز،دانشگاهآزاداسلامی،تبریز،ایران
۲- دانشکده کشاورزی مشکین شهر، دانشگاه محقق اردبیلی، اردبیل، ایران
۳- دانشکده دامپزشکی،واحدتبریز،دانشگاهآزاداسلامی،تبریز،ایران
*نویسنده مسؤول : vahid.sohail@yahoo.com،

هدف:این بررسی نشان داد که ویروس آنفلوانزای طیور موجب ایجاد ضایعات هیستوپاتولوژیک دربافت کلیه جوجه‌های آلوده می شود.هدف ازاین مطالعه بررسی تغییرات پاتولوژیکی درجوجه‌هایSPF آلوده به ویروس AIمی‌باشد.

مواد وروش کار:برای این منظور ۴۰ جوجه SPF یک روزه لوهمن بطور تصادفی در۲گروه ۲۰ تایی از جوجه ها تقسیم گردید.در روز ۲۱ جوجه ها در گروه ۱ توسط ویروس H9N2 با دز$10^{5/7}$EID50 تلقیح گردیدند ودرگروه ۲ از طریق داخل وریدی سرم سالین نرمال تلقیح شد.ازهرگروه ۱۰ جوجه بطور تصادفی انتخاب واز بافت کلیه آنها نمونه گیری به عمل آمد.

نتایج وبحث:ضایعات هیستوپاتولوژیکی از قبیل پرخونی ونکروز در توبولهای ادراری در گروه آلوده با ویروس دیده شد.نتایج مطالعه حاضر نشان داد که ویروس آنفلوآنزایH9N2 در جوجه های SPFدارای گرایش بافتی به کلیه بوده و نفروپاتوژنیک نیز می‌باشد.

کلمات کلیدی:آنفلوانزای طیور (H9N2)، تغییرات هیستوپالوژیک، گرایش بافتی، نفروپاتوژنیک

بررسی اثر اسلتامیویر بر رشد و تکثیر ویروس آنفلوانزای پرندگان تحت تیپ H9N2 در کشت سلول

غلامحسین پورقنبری [۱]، حسن نیلی [۲]، آفاق معطری [۳]، علی محمدی [۲]، مجید مروتی [۱]، الهام صالحی [۱]

۱) عضو هیات علمی دانشکده دامپزشکی، دانشگاه اردکان، اردکان، یزد، ایران، ۲) عضو هیات علمی دانشکده دامپزشکی، دانشگاه شیراز، شیراز، فارس، ایران، ۳) عضو هیات علمی دانشکده پزشکی، دانشگاه علوم پزشکی شیراز، شیراز، فارس، ایران

نویسنده مسؤول:hpourghanbari@ardakan.ac.ir

کلیات: تحت تیپ (H9N2) ویروس آنفلوانزای پرندگان که جزء ویروسهای با حدت پایین می باشد در گونه های مختلف پرندگان، پستانداران و حتی انسان در حال چرخش می باشد. با توجه به اینکه امروزه استراتژی و رهیافت واکسیناسیون مهمترین گزینه مقابله با این ویروس ها می باشد، اما یکسری معایب و مشکلاتی نیز به همراه خود دارد، از جمله ظهور و بروز سویه های جدید در اپیدمی ها و پاندمی ها، که واکسن های موجود، قابلیت ایمن سازی بر علیه آنها را ندارند. امروزه دو گروه از داروهای ضد ویروس آنفلوانزا وجود دارد: ۱) مهار کننده های کانال یونی ویروس (M2) و ۲) مهار کننده های آنزیم نورآمینیداز مانند اسلتامیویر، در این مطالعه اثر داروی اسلتامیویر بر رشد و تکثیر ویروس آنفلوانزای پرندگان، تحت تیپ H9N2، در کشت سلول مورد بررسی قرار گرفت.

روش کار: اثرات سمی دارو بر سلول‌های MDCK با استفاده از تست MTT مورد بررسی قرار گرفت و سپس سلول‌های MDCK به پلیت‌های ۹۶ خانه‌ای منتقل و به مدت ۴۸ ساعت در انکوباتور نگهداری شدند تا به سطح رشد مناسب برسند، در این مرحله پس از انجام شستشوی سلول‌ها، ویروس آنفلوانزا (MOI= 0.01)، به کشت سلول تلقیح شد و پس از یک ساعت، غلظت های مختلف داروی اسلتامیویر به کشت سلول وارد شد و در انکوباتور نگهداری و مورد بررسی قرارگرفت و پس از ۷۲-۴۸ ساعت، اثر دارو با استفاده از تست‌هایHA, TCID50% وReal Time PCR مورد بررسی قرارگرفت.

نتایج و نتیجه گیری: نتایج حاصل از تست MTT میزان ۰/۵ mg/ml از اسلتامیویر را پیشنهاد داد. اثر ضدویروسی اسلتامیویر بر ویروس آنفلوانزای پرندگان (A/chicken /Iran/772/1998(H9N2) یک روند وابسته به دوز را نشان داد، تیتر ویروس در تمام آزمون های تشخیصی کاهش یافت و نتایج حاصل از تست Real Time PCR، مهار شدید رشد و تکثیر ویروس و کاهش تعداد کپی ژنوم ویروس در تمام غلظت های مورد استفاده (۰/۵ mg/ml-۰/۰۵)، نسبت به گروه کنترل را نشان داد. نتایج حاصل از این مطالعه نشان داد که علیرغم مقاومت برخی از تحت تیپ های ویروس های آنفلوانزای تیپ A نسبت به داروهای ضد ویروس آنفلوانزا، اسلتامیویر همچنان دارای قدرت ضد ویروسی بسیار قوی بر ویروس آنفلوانزای پرندگان تحت تیپ H9N2 می باشد.

کلمات کلیدی: ویروس آنفلوانزای پرندگان، اسلتامیویر، ضد ویروس، کشت سلول، Real Time PCR

جداسازی و شناسایی *اورنیتوباکتریوم راینوتراکئال* از گله‌های مرغ گوشتی کشتارشده در استان خوزستان

منصور میاحی[۱]*، داریوش غریبی [۲]، فروغ طلازاده [۱]، رحیم قدیمی‌پور [۳،۲]*

۱- گروه علوم‌درمانگاهی، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز

۲- گروه پاتوبیولوژی، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز

۳- بخش تحقیق و توسعه، موسسه تحقیقات واکسن و سرم‌سازی رازی شعبه اهواز

پست الکترونیک نویسنده مسؤول:ftalazade@gmail.com

پیشینه و اهداف: *اورنیتوباکتریوم راینوتراکئال* (ORT) باکتری نوظهوری است که به‌همراه بروز علائم تنفسی، کاهش رشد، کاهش تولید تخم، افزایش مرگ‌ومیر و افزایش حذف کشتارگاهی از ماکیان و بوقلمون جداشده است. این ارگانسم می‌تواند موجب بیماری شدیدا واگیر ماکیان گردد که شدت علائم بالینی، طول دوره بیماری و میزان تلفات آن بسیار متغیر می‌باشد. هدف از مطالعه حاضر جداسازی و شناسایی *اورنیتوباکتریوم راینوتراکئال* از گله‌های مرغ گوشتی کشتارشده در استان خوزستان می‌باشد.

مواد و روش کار: تعداد ۲۱۰ نمونه سوآب نایی از ۲۱ گله مرغ گوشتی کشتارشده در استان خوزستان جمع‌آوری شد. به منظور جداسازی *اورنیتوباکتریوم راینوتراکئال*، تمام نمونه‌ها ابتدا با استفاده از روش‌های مرسوم کشت باکتریایی و آزمایش‌های مورفولوژیک موردبررسی قرار گرفته و در طی این آزمایشات تعدادی جدایه، شناسایی اولیه شدند. سپس با استفاده از آزمایش‌های بیوشیمیایی، ارگانیسم‌های مشکوک جداسازی شده، مورد تایید قرارگرفتند.

نتایج و بحث: در این مطالعه با استفاده از آزمایش‌های باکتری‌شناسی و بیوشیمیایی مرسوم، ۲۳ (۱۰/۹۵٪) جدایه از ۴ گله مرغ گوشتی (۱۹/۰۴٪) به‌عنوان *اورنیتوباکتریوم راینوتراکئال* شناسایی شدند. از نظر آماری تفاوت معنی‌داری میان میزان جداسازی این جرم از مناطق مختلف تحت‌مطالعه در استان مشاهده‌گردید (P□۰/۰۱). مقایسه نتایج مطالعه حاضر با تحقیقات پیشین انجام یافته در کشور نشان‌دهنده حضور قابل‌توجه ارگانیسم در گله‌های مرغ گوشتی استان بویژه در مناطق شمالی آن است.

کلمات کلیدی: جداسازی، شناسایی، *اورنیتوباکتریوم راینوتراکئال*، ORT، گله‌های مرغ گوشتی

اولین گزارش لوسمی مزمن میلوئیدی در طاووس

سید سینا باقری[1]، محمد حسن زاده[1]، سمانه کشاورز[2]، رضا برزگری[1]، سید مهدی نصیری[2]*
[1]گروه بیماریهای طیور، دانشکده دامپزشکی دانشگاه تهران، [2]بخش کلینیکال پاتولوژی، دانشکده دامپزشکی دانشگاه تهران
seyedsinabagheri@gmail.com

یک طاووس بالغ با علائم بی‌اشتهایی، عدم تمایل به حرکت و کاهش فعالیت به کلینیک تخصصی پرندگان زینتی دانشکده دامپزشکی دانشگاه تهران ارجاع گردید. آزمایش‌های تشخیصیمختلف از جمله تهیه رادیوگراف، سی تی اسکن، تهیه لام ازمدفوع،کشت مدفوع، بیوپسی از مغز استخوان، هماتولوژی و آنالیز بیوشیمیایی بر روی خون پرنده انجام گرفت. نتایج هماتولوژی نشان داد که طاووس آنمیک بوده و دارایلکوسیتوز شدید انحراف به چپ غیرمعمول با حضور پیشسازهای رده میلوئیدیمانند میلوبلاست‌ها و میلوسیت‌هامی باشد. پروفایل بیوشیمیایی هم درگیری کبد و کلیه را نشان می‌داد. گزارش‌های اندکی در مورد لوسمی در پرندگان موجود می‌باشد و بر اساس اطلاعات ما تا به امروز گزارشی از لوسمی در طاووس وجود ندارد.
کلمات کلیدی:طاووس، لوسمی مزمن میلوئیدی، هماتولوژی، آنالیز بیوشیمیایی

اثر پایدارکننده های شیمیایی مختلف بر پایداری واکسن برونشیت عفونی طیور

لیلا پیشرفت ثابت[1*]، شهین مسعودی[1]، نوشین حسینی وفا[2]*
[1] بخش تحقیق و تولید واکسن های ویروسی طیور، موسسه تحقیقات واکسن و سرم سازی رازی، کرج، ایران؛ [2] بخش کنترل کیفی، موسسه تحقیقات واکسن و سرم سازی رازی، کرج، ایران
آدرس الکترونیکی نویسنده مسؤول: lp_sabet@yahoo.com , l.sabet@rvsri.ac.ir

زمینه و هدف: برونشیت عفونی (IB) یک بیماری حاد ویروسی سیستم تنفسی ماکیان می باشد که منجر به زیان های اقتصادی شدیدی در صنعت طیور می شود. بهترین روش حفاظت بخشی علیه بیماری در مرغان تخم گذار، ایمن سازی با واکسن تخفیف حدت یافته می باشد. پایداری واکسن زنده ویروسی برای کارآیی ایمن سازی بسیار مهم است، اما این ویروس به تغییرات محیطی بسیار حساس است. به منظورحفظ توانمندی و کارآیی واکسن، افزودن پایدارکننده به واکسن لیوفیلیزه شده در طی مراحل تهیه واکسن منجر به حفظ پایداری واکسن در طی مراحل تهیه، نگهداری و تلقیح می شود. انواع مختلف ترکیبات از جمله قندهایی مثل لاکتوز و سوکروز، polyole هایی مثل سوربیتول، و پروتئین هایی مثل لاکتالبومین، ژلاتین و پپتون برای این منظور استفاده می شود. هدف از این مطالعه تعیین کارآیی چهار ترکیب پایدارکننده مختلف بر روی واکسن IB در طی یک دوره سه ساله می باشد.

مواد و روش ها: چهار پایدارکننده مختلف شامل لاکتوز- لاکتالبومین (LL)، سوکروز- لاکتالبومین (LS)، لاکتوز-پپتون (LP) و ژلاتین-سوربیتول (GS) برای تهیه واکسن لیوفیلیزه شده مورد استفاده قرار گرفت. واکسن های فرموله شده با پایدارکننده ها قبل و بعد از لیوفیلیزاسیون عیار سنجی شدند. برای تعیین پایداری تسریع شده (طبق دستورالعمل OIE)، عیار واکسن ها بعد از ۷ روز انکوباسیون در$37^{o}C$ تعیین گردید. رطوبت باقیمانده در واکسن پس از لیوفیلیزاسیون با روش کارل- فیشر اندازه گیری شد. همچنین برای تعیین پایداری طولانی مدت واکسن در $4^{o}C$، برای مدت ۳ سال و هر سه ماه یکبار عیارسنجی شدند. آزمایش های فوق برای ۳ سری واکسن تولید شده انجام گردید.

یافته ها و نتیجه گیری: نتایج نشان داد واکسن های لیوفیلیزه شده با پایدار کننده ها عیار قابل قبول را داشتند و میانگین رطوبت واکسن ها در حدود قابل قبول (۱/۴۲-۲/۷۲٪) بود. پس از هفت روز انکوباسیون واکسن ها در $37\ ^{\circ}C$ (پایداری تسریع شده)، واکسن با پایدارکننده LL کمترین کاهش تیتر را داشت. همچنین نتایج نشان داد که در پایان دوره سه ساله نگهداری واکسن ها در $4^{\circ}C$ ، واکسن با پایدارکننده LL بالاترین عیار را داشت.بدین طریق به نظر می رسد ترکیب پایدارکننده لاکتوز-لاکتالبومین حفاظت خوبی در طی مرحله لیوفیلیزاسیون و همچنین نگهداری طولانی مدت در $4^{\circ}C$ برای واکسن IBV فراهم می نماید.
واژگان کلیدی: برونشیت عفونی، ویروس، پایدارکننده، واکسن

اثر تزریق ویتامین c در جوجه آوری از تخم مرغ و اردک

علی هاشمیان[۱]، آرین پورامین[۱]، محمد ناصر ناظم[۲]
[۱]دانشجوی دکتری دامپزشکی ، دانشکده دامپزشکی دانشگاه شهید باهنر کرمان،کرمان ،ایران.
[۲]گروه علوم پایه ، دانشکده دامپزشکی دانشگاه شهید باهنر کرمان،کرمان ،ایران.
nnazem@uk.ac.ir

هدف از این تحقیق و بررسی ، بررسی تاثیر دزهای مختلف ویتامین c تزریقی در زمان های مختلف جوجه کشی در تخم مرغ و اردک پکین در جوجه آوری بود.تزریق ویتامین c در دزهای مختلف در تخم ها و در روزهای ۱۳، ۱۵ ، ۱۷(درجوجه ۳ و۶ mg) و در روزهای ۱۲ ، ۲۰ (اردک ۴و۸ mg) از جوجه کشی انجام شد.در مورد جوجه مرغ های تفاوت های چشم گیری ما بین گروه های نمونه و مورد آزمایش مشاهده نشد؛ اگرچه در جوجه آوری تخم هایی که در روز ۱۵ جوجه کشی mg۶ ویتامینc به آنها تزریق شده بود بهترین بازده دیده شد اما این تفاوت آنچنان زیاد و قابل ملاحظه نبود.اما ازسویی دیگر در اردک ها تفاوت های چشم گیری مابین دو گروه نمونه و مورد آزمایش (mg۸ ویتامین c در روز ۲۰ و 4mg ویتامین c در روزهای ۱۲و۲۰ جوجه کشی)مشاهده شد.تفاوت حاصل از تزریق ویتامین c اینگونه بود که در تخم های مورد تزریق قرارگرفته در حدود ۳۲ درصد افزایش جوجه آوری داشت و این افزایش بازده به علت کاهش تعداد جوجه های مرده و جوجه های سر از تخم درنیاورده بود.به صورت خلاصه تزریق ویتامین c تاثیر زیادی در جوجه اوری ازتخم نداشت اما در مورد اردک نتیجه ای متفائت داشت و تخم هایی که در آنها تزریق انجام شده بود جوجه آوری بهتری داشتند وتعداد جوجه های سر ازتخم در آورده آنها یشتر بود.

بررسی مولکولی گونه های ایمریای طیوردرمرغداری های استان آذربایجانشرقی

ناصر رزم آرایی[۱،۲و۳]،علی آمقی رودسری[۱] ، لعیا فروغی[۴]
۱- بخش سلولی مولکولی،مؤسسه تحقیقات واکسن وسرمسازی رازی،شعبه شمالغرب کشور، مرند،ایران
۲- مرکزتحقیقات کاربردی دارویی،دانشگاه علوم پزشکی تبریز،تبریز،ایران
۳- کمیته تحقیقات دانشجویی،دانشگاه علوم پزشکی تبریز،تبریز،ایران،
۴- مرکزبهداشت مرند، استان آذربایجان شرقی،ایران
Emael:nasserrazmaraii@gmail.com

سابقه وهدف:کوکسیدیوز یکی از مهمترین بیماریهای تکیاخته ای طیور می باشد. ضرر وزیان اقتصادی این بیماری بسیار بالاست وشناسایی گونه های مختلف ایمریا برای کنترل، پیشگیری و درمان بیماری اهمیت زیادی دارد. این مطالعه به منظوربررسی مولکولی گونه های ایمریای طیور دراستان آذربایجان شرقی انجام گردید.

موادوروشها: برای جدا سازی اووسیستهای گونه های مختلف ایمریا ازفارم های طیور مشکوک نمونه برداری انجام گردید. جداسازی DNAتوسط انجماد وذوب متوالی با استفاده از کیتهای تجاری استخراجDNA انجام گردید. تکثیرDNA ازطریق واکنش زنجیرهای پلیمراز بااستفاده ازپرایمرهای اختصاصی این گونه ها انجام شد.

یافته ها:نتایج واکنش زنجیرهای پلیمراز تایید نمودکه حداقل ۴ گونه مختلف ایمریا در نمونه های روده ای طیور استان آذربایجان شرقی وجود داشت که شامل ایمریا آسروولینا،تنلا،ماکسیما ونکاتریکس بود.

نتیجه گیری:نتایج این مطالعه تایید نمودکه حداقل چهارگونه از ایمریاهای بیماریزای طیوردرمرغداری های این استان وجوددارد که می تواند با کاهش ضریب تبدیل غذایی، ضررو زیان اقتصادی زیادی را به مرغداران استان تحمیل نماید .

واژه های کلیدی: ایمریا، آسروولینا،تنلا،ماکسیما،نکاتریکس، طیور ، استان آذربایجانشرقی

استفاده از یک جدایه بومی باکتری آوی باکتریم پاراگالینارم برای ارزیابی کار امدی واکسن کوریزای عفونی

عباس نوری*، منصور بنانی، سید غلامرضا میرزای
موسسه تحقیقات واکسن و سرم سازی رازی- بخش بیماری های باکتریایی طیور
a.nouri@rvsri.ac.ir

هدف: هدف از این مطالعه تعیین کار امدی استفاده واکسن در مقابل یک جدایه بومی عامل کوریزای عفونی (***آوی باکتریوم پاراگالینارم***) بوده است.

مواد و روش کار: باکتری مورد استفاده در این مطالعه (RT-83) از استان خراسان رضوی بدست آمده و بعنوان سرو تیپ A مورد شناسایی قرار گرفته بود. در اجرایی این مطالعه ۳۶ قطعه جوجه SPF با سن ۱۴ هفته بطور تصادفی به سه گروه جدا گانه تقسیم و بطور یکسان تغذیه گردیدند. گروه اول در دو مرحله واکسن کشته روغنی تجاری با فاصله دوهفته دریافت نمودند. دوهفته پس از آخرین مرحله واکسن، این گروه به همراه گروه دوم جوجه ها با سوسپاسیون تهیه شده از کشت ۲۴ ساعته باکتری بر روی مجیط ژلوزشکلاتی خون اسب(در دما ۳۷ درجه و ۵درصد گاز CO_2) در حجم ۲/. میلی لیتر از طریق سینوس زیر چشمی مورد تلقیح قرار گرفتند. گروه سوم بعنوان شاهد فقط محلول بافر فسفات در یافت نمودند.

نتایج و بحث: کلیه پرنده های گروه ها در طول دوره آزمایش از نظر علائم بالینی چون ترشحات بینی و تورم صورت تحت نظر قرار داشتند. در روز های ۲، ۴، ۶، و ۸ پس از تلقیح ۳ پرنده از هر گروه با گاز co_2 تلف کرده و نمونه جداسازی مجدد باکتری از سینوس زیر چشمی آنها تهیه می گردید. در اولین پس از تلقیح علائم مشخصه کوریزای عفونی در پرنده های گروه دوم قابل مشاهد بود و جدا سازی باکتری از سینوس زیر چشمی در دو گروه اول و دوم در طول دوره ازمایش نتایج مثبت داشتند بجز اینکه در گروه واکسینه شده از روز ششم پس از تلقیح ظاهرا باکتری از محل تلقیح پاک شده بود و نتایج منفی داشتند. بطور خلاصه این مطالعه نشان داد واکسن تجاری موجود در کشور قادر به مهار بروز علائم بالینی بیماری کوریزای عفونی ناشی از یک جدایه بومی می باشد ولی جداسازی مجدد باکتری از گروه های ایمن شده در مقایسه با مطالعات مشابه چالش واکسن، به نظر میرسد این جدایه با سویه های واکسن کاملا یکسان نبوده باشد. این امر می تواند موجب بروز مجدد بیماری در پرنده های حساس در گله مرغان گردد. این تحقیق قالب طرح مصوب شماره ۹۲۱۰۵-۱۸-۱۸-۲ موسسه تحقیقات واکس و سرم سازی رازی صورت گرفته است.

کلمات کلیدی: Avibacterium paragallinarum, infectious coryza, Iran, vaccine

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بتائین بعنوان یک ماده آنتی اکسیدان در تغذیه طیور

مسعود علیرضایی[*1]، *حسن نوروزیان*[2]، *پریسا جراح*[3]، *کبری چهاری*[1]
۱- *بخش بیوشیمی دانشکده دامپزشکی دانشگاه لرستان، خرم آباد، ایران*
۲- *گروه علوم درمانگاهی دانشکده دامپزشکی دانشگاه لرستان، خرم آباد، ایران*
۳- *دانشجوی دکتری حرفه ای دانشکده دامپزشکی دانشگاه لرستان، خرم آباد، ایران*
Alirezaei_m54@yahoo.com

اهداف: اخیراً اثرات آنتی اکسیدانی و دهندگی گروه متیل بتائین در مدلهای حیوانی بصورت تجربی نشان داده شده است. بنابراین مطالعه حاضر طراحی شد تا اثرات آنتی اکسیدانی بتائین را بر چگونگی آنتی اکسیدان و کیفیت گوشت سینه جوجه های گوشتی بررسی کند.
مواد و روش ها: جوجه های گوشتی از نژاد کاب بطور تصادفی به گروههای کنترل، متیونین کم، متیونین کم+بتائین و بتائین تقسیم شدند.
یافته ها و نتیجه گیری: فعالیت مهمترین آنزیم آنتی اکسیدان (GPx) در گروه بتائین و متیونین کم+بتائین بطور معنی داری در مقابل با گروههای کنترل و متیونین کم افزایش یافت. فعالیت کاتالاز و سوپراکسید دیسموتاز بطور معنی داری در گروه بتائین در مقایسه با گروه متیونین کم بالاتر بودند و پراکسیداسیون لیپید بطور معنی داری در گروههای کنترل و متیونین کم افزایش یافت. مطالعه حاضر نشان داد که اضافه کردن بتائین (یک گرم در کیلوگرم) از جیره با متیونین کم، می تواند بطور نسبی سبب افزایش دفاع آنتی اکسیدانی و کیفیت گوشت گردد و پراکسیداسیون لیپید را در ماهیچه های سینه جوجه های گوشتی کاهش می دهد.
کلمات کلیدی: بتائین، تغذیه، آنزیم انتی اکسیدان، جوجه گوشتی.

عفونت هموپروتئوس در یک پهله دلیجه بومی (فالکو تنیکولوس) - اولین گزارش در در ایران

مصطفی طاهریان، زهرا نیکوصفت، آرش چهاردولی، صابر الفتی

هدف: دلیجه بومی (فالکو تنیکولوس) یک پرنده متعلق به گروه دلیجه ها از خانواده شاهین سانان است. پرنده معمولا در پاییز به ایران مهاجرت می کند و یک گونه تحت محافظت در نظر گرفته می شود. بر اساس میزبان خاص گونه ها و جزئیات دقیق گامتوسیتها، جنس و گونه ی انگل می تواند اغلب توسط کارشناسان تعیین شود. هدف از این مقاله گزارش اولین مورد عفونت هموپروتئوس در یک پهله دلیجه بومی در ایران است.
مواد و روش کار: در نوامبر ۲۰۱۵، یک دلیجه بومی با سابقه بی اشتهایی، اسهال و لنگش به کلینیک دامپزشکی دانشگاه رازی ارجاع داده شد. معاینات فیزیکی افسردگی، بی حالی، لنگش شدید، لاغری و پرهای ژولیده را نشان داد. درمعاینه پوست، انگلهای خارجی یافت نگردیدند. به عنوان بخشی از روش معاینه رایج ما، نمونه خون از ورید (بال) جمع آوری شده و یک اسمیر تهیه و با گیمسا رنگ آمیزی شد.
نتایج و نتیجه گیری: در بررسی با میکروسکوپ نوری (بزرگنمایی x100) اسمیر خون محیطی بررسی گردید و میکروگامت و ماکروگامت های دمبلی شکل، هسته های کناری و پررنگ در گلبول های قرمز خون تشخیص داده شد. بسیاری از گونه های هموپروتئوس با میزبان اختصاصی و محدود به گونه های مرتبط است. یافته های میکروسکوپ نوری و میزبان اختصاصی به شدت مطرح کننده عفونت با گونه هموپروتئوس است. با توجه به تظاهرات بالینی مبهم ناشی از عفونت با هموپروتئوس در دلیجه بومی، ما پشنهاد می کنیم که ارزیابی از گستره خون محیطی بایستی در این شرایط برای تشخیص عفونت حتما لحاظ شود.
کلمات کلیدی: هموپروتئوس، فالکو تنیکولوس، دلیجه بومی، ایران، لام خونی

ارزیابی یک پری بیوتیک مایع در خوراک و آب جوجه های گوشتی تحت تنش گرمایی

سعید سیفی، راحم خوشبخت، رضا صیرفی و علی گیلانی *
دانشکده دامپزشکی، دانشگاه تخصصی فناوری‌های نوین آمل
***ایمیل نویسنده مسوول: gilanipoultry@gmail.com**

اهداف: گزارش شده است که جایگزین های آنتی‌بیوتیک در شرایط نامطلوب مثل تنش مفیدتر هستند. بنابراین یک آزمایش برای ارزیابی مخمر هیدرولیز شده با آنزیم به عنوان یک پری بیوتیک مایع بر روی جوجه‌های گوشتی تغذیه شده با جیره دارای سبوس برنج زیاد تحت تنش گرمایی انجام شد.
مواد و روش‌ها: تعداد ۱۹۲ جوجه یکروزه نر سویه راس ۳۰۸ (با میانگین وزن ۴۶ گرم) توزین و به طور تصادفی بین ۴ تیمار پخش شدند. هر تیمار شامل ۴۸ پرنده و ۴ تکرار (پن) ۱۲ قطعه‌ای بود. تیمار اول (کنترل مثبت) دارای جیره استاندارد توصیه شده کاتالوگ بدون پری بیوتیک افزودنی بود. تیمار دوم (کنترل منفی) به صورت جیره رقیق شده (۹۰ درصد سطوح مواد مغذی توصیه شده) حاوی سبوس برنج بدون پری بیوتیک بود. تیمار سوم همان جیره تیمار دوم به علاوه پری بیوتیک مایع (۱ گرم در هر کیلوگرم خوراک کامل) بود. سلماناکس یک مخمر هیدرولیز شده به علاوه محیط کشت و عصاره مخمر ساکارومایسس سرویسیه است که توسط شرکت آرم اند همر ایالات متحده تولید گردید. سلماناکس مایع به مقدار ۰/۵ میلی لیتر در هزار لیتر آب آشامیدنی جوجه های تغذیه شده با جیره رقیق شده به عنوان تیمار چهارم استفاده شد. دمای محیط به مدت حداقل ۸ ساعت از روز ۲۰ به بعد بیش از درجه سانتیگراد تا پایان دوره پرورش در تابستان ۱۳۹۴ بود.
نتایج و بحث: رقیق سازی جیره به طور معنی داری موجب کاهش وزن گیری شد. با این حال وزن گیری جوجه های دریافت کننده محصول پری بیوتیک مایع در خوراک به طور معنی داری در مقایسه با تیمار شاهد در مرحله آغازین بهبود یافت. مصرف خوراک در کنترل مثبت در دوره پایانی به طور معنی داری نسبت به بقیه تیمارها بیشتر بود. افزودن محصول مخمر به طور معنی داری مصرف خوراک پرنده ها را در مراحل رشد و پایانی تغییر نداد. ضریب تبدیل خوراک کنترل مثبت و محصول مخمر در خوراک به طور معنی داری از گروه کنترل منفی و محصول در آب طی دوره آغازین بهتر بود. ضریب تبدیل در مراحل رشد و پایانی به طور معنی داری تحت تاثیر قرار نگرفت. در نتیجه، افزودن این محصول اثرات مثبتی بر شاخص‌های تولیدی جوجه های تحت تنش گرمایی داشت.
واژه‌های کلیدی: سلماناکس، تنش گرمایی، رشد، جوجه‌های راس

ارزیابی بیماری عضله سبز در جوجه های گوشتی شمال ایران

سعید سیفی*[۱]، سعید خالدیان[۲]
[۱]دانشکده دامپزشکی، دانشگاه تخصصی فناوری‌های نوین آمل
[۲]دانش آموخته رشته بهداشت و بازرسی گوشت، دانشکده دامپزشکی، دانشگاه تخصصی فناوری‌های نوین آمل
*ایمیل نویسنده مسوول: saeedseifi57@gmail.com

اهداف: بیماری عضله سبز که با عناوین دیگر از جمله میوپاتی عضلات عمقی سینه و بیماری اورگون نیز نامیده می شود، یک بیماری دژنراتیو است که عضلات ناحیه سینه پرنده را درگیر می کند و با آتروفی و نکروز این عضلات همراه می باشد. ضایعات در هر دو عضله فیله دیده می شود و از لحاظ تغییر رنگ می تواند از خونریزی در عضله تا سبز رنگ شدن آن متفاوت باشد. اما این ضایعات فقط در صورتیکه عضله سینه باز شود قابل رویت می باشد. بیماری اولین بار در گله های بوقلمون مادر و مرغ مادر بالغ دیده شد اما بعدها بیشتر در گله های گوشتی بخصوص گله هایی که جهت رشد بیشتر عضلات سینه اصلاح نژاد شده بودند، مشاهده شد. هدف از این مطالعه بررسی شیوع این بیماری در کشتارگاههای طیور استان مازندران می باشد.
مواد و روش کار: در یک دوره زمانی ۳ ماهه، عضله سینه ۲۰۰ مرغ گوشتی مربوط به ۲۰ گله متفاوت در خط کشتار ۴ کشتارگاه در استان مازندران مورد بررسی قرار گرفت. نمونه ها از نژادهای مختلف جوجه های گوشتی جمع آوری شد ولی غالبیت با نژاد راس بود. عضلات سینه پس از بررسی ظاهری اولیه با چاقو برش خورده، وجود یا عدم وجود خونریزی یا تغییر رنگ بررسی و ثبت می شد.
نتایج و بحث: در مجموع میزان درگیری پرندگان با این بیماری ۴.۳ درصد بود. نژاد نقش معنی داری در میزان بروز این بیماری نداشت. ولی بیماری بیشتر در خروسها دیده شد (غیر معنی دار). ماهیچه سینه نزدیک به یک چهارم وزن کل جوجه های گوشتی امروزه را تشکیل می دهد. پرورش جوجه های گوشتی برای وزن های سنگین بازار می تواند احتمال وقوع این بیماری را افزایش دهد. بروز آن به سیستم های پرورش و مدیریت بستگی دارد و پرنده در هر سن و وزنی می تواند تحت تأثیر قرار گیرد.
واژه های کلیدی: بیماری عضله سبز، جوجه های گوشتی، ماهیچه سینه، مازندران.

راه اندازی روشتشخیص ویروس آنفولانزای پرندگان سروتیپ با تکنیکH5 با Real-Time RT-PCR

سیدغلامرضا میرزایی*[۱] ، عبدالحمید شوشتری پورمحره[۲] ، عباس نوری[۱]
۱. بخش تحقیق وتشخیص بیماریهای باکتریایی طیور،موسسه تحقیقات واکسن و سرمسازی رازی. کرج. ایران
۲. بخش تحقیق وتشخیص بیماریهای ویروسی طیور،موسسه تحقیقات واکسن و سرمسازی رازی. کرج. ایران
*ایمیل نویسنده مسؤول: s.mirzaei@rvsri.ir

اهداف:هدف ما از این مطالعه بیان روشی در شناسایی سروتیپ H5 ویروس های آنفولانزای پرندگان با حساسیت و ویژگی بالا همراه با سرعت با لا با روش Real time RT-PCR است.
مواد و روش ها:هریکاز اجزای موثر بر واکنش شامل غلظت پرایمر و پروب، مواد مختلف و شرایط دمایی نیازمند بهینه سازی میباشد، لذابا انجام تست های متعدد، غلظت بهینه پرایمر ، پروب و سیکل دمایی بهینه در جهت اپتیمایز کردن روش انتخاب گردید.ویژگی پراب و پرایمرها با استفاده از اسید نوکلئیک استخراج شده از میکرو ارگانیسم هایی که ممکن بود به طور معمول در نمونه های حاصل از پرندگان وجود داشته باشند تست گردید.
بحث و نتیجه گیری:بررسیویژگی روشراهاندازیشدهدراینپژوهش در سنجش ژن H9 ، نشان از عدمواکنشپروب و پرایمرهای طراحی شده بانمونههای منفی داشته وبا عنایت به عدم مشاهده نتیجه مثبت، در تستهای مربوط به نمونه های آنتیژنیک مشابه ، روش فوق دارای ویژگی ۱۰۰٪ می باشد.روش تشخیصی بیان شده چندین مزیت نسبت به روشهای تشخیصی دیگر دارد، که از جمله مهمترین آنها سرعت تشخیص است، که این فاکتور، نقش مهمی در مدیریت وکنترل بیماری دارد. حساسیت بالا ، ویژگی ۱۰۰٪ و دقت و تکرار پذیری بالا، از دیگر مزیت های تکنیک ارائه شده است.
واژه های کلیدی: ویروس آنفولانزای پرندگان، , H5Real-time RT-PCR

مقایسه اثر بخشی بالینی سه محصول تجاری دارویی در طیور گوشتی مبتلا به بیماری تنفسی

کرامت اساسی، عاطفه حسینی، بهمن عبدی

هدف: ارزیابی اثر بخشی بالینی سه محصول تجاری تنفسی برونشی مکس، برم هگزین و تیوفیلین جی برکمپلکس تنفسی تجربی ماکیان گوشتی
روش کار: چهار گروه ۵۰ قطعه ای جوجه یک روزه ی کاب تا سن ۲۵ روزگی در شرایط کنترل شده ی محیطی پرورش داده شدند. در سن ۲۵ روزگی، جوجه ها با ویروس برونشیت عفونی جدایه $IRFIBV32$ با دز ($1 \times 10^4\ EID_{50}$) به روش قطره چشمی و ویروس آنفلوانزای H_9 با دز($1 \times 10^6\ EID_{50}$) به صورت قطره بینی و باکتری ایشرشیا کلی سروتیپ O_2 با دز $1 \times 10^9 Cfu$ به ازا هر پرنده به روش اسپری آلوده شدند. روزانه میزان آب و دان مصرفی تا سن ۳۵ روزگی ثبت شد. دو روز پس از ایجاد عفونت تجربی گروه های ۱ تا ۳ به مدت ۴ روز با داروهای بیان شده درمان شدند. گروه ۴ به صورت شاهد بدون دارو در نظر گرفته شد. به مدت ۱۰ روز مصرف آب و خوراک، وزن گیری، فعالیت مژه ها، نشانه ها و جراحت های بالینی و مرگ ومیر مطالعه شد.
نتایج و بحث: نشانه های بالینی شامل ترشح از چشم و بینی و عطسه کردن از ۲۴ ساعت پس از تلقیح در جوجه های تمام گروه ها بدون اختلاف معنی داری دیده شد ($P>0.05$) و تا ۶ روز پس از تلقیح همین روند ادامه داشت. جراحت هایی نظیر پرخونی نای، کدورت کیسه هوایی و ترشحات در مجاری هوایی دال بر کامپلکس تنفسی در اولین ۵ جوجه ای که کشته شدند بدون وجود اختلاف معنی دار دیده شد($P>0.05$). داده های سرولوژه هم روند عفونت را نشان داد. اگرچه ترشحات پنیری لوله ای قالب گیری شده در مجاری هوایی در ۵ پرنده ای که هر دو روز یک باراز هر گروه کشته می شدند دیده نشد ولی در تمام پرندگان تلف شده، دیده شد که در گروه شاهد بدون درمان کمتر بود($P\leq0.05$). مرگ میر نهایی در گروهی که برونشی مکس مصرف کرد ۲۶٪ ، برم هگزین ۲۲٪، تئوفیلین جی ۳۲٪ و گروه شاهد ۸٪ بود که بین گروه های درمان و بدون درمان اختلاف معنی دار وجود داشت ($P\leq0.05$). در مصرف آب و خوراک، وزن گیری و جراحت های پاتولوژی اختلاف معنی داری بین گروه ها مشاهده نشد ($P>0.05$). هیچ کدام از داروهای فوق نتوانستند فعالیت مژه ای مختل شده در اثر ویروس برونشیت عفونی را بهبود بخشند.

الگوی حساسیت ضد میکروبی جدایه های اشریشیا کلی نسبت به ترکیبات ضد باکتریال در ارومیه - ایران

محمد صادق مددی[۱]، ابوالفضل غنی ئی[۲]، پیمان زارع[۳]، نیما عیسی کاکرودی[۲]
۱. گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه تبریز، ایران
۲. گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه ارومیه، ایران
۳. گروه پاتوبیولوژی، دانشکده دامپزشکی، دانشگاه تبریز، ایران

کلی باسیلوز یک بیماری مهم باکتریایی با ضررهای اقتصادی قابل توجه می باشد. به دلیل اهمیت مقاومت باکتریایی، این مطالعه بمنظور تعیین حساسیت ضد میکروبی جدایه های ای کلای در ارومیه انجام شده است. در طول سال های ۱۳۹۰-۱۳۸۵ آزمایشات حساسیت ضد میکروبی ۱۱۰۰ جدایه ای کلای از مزارع پرورشی گوشتی ارومیه جمع آوری و الگوهای مقاومت آنالیز شد. آنتی بیوتیک ها شامل آمپیسیلین، انروفلوکساسین، کلیستین، سولفامتوکسازول+تریمتوپریم (سولتریم)، تیامولین، تایلوزین و تتراسایکلین می باشد. یافته های این مطالعه تغییرات در الگوی حساسیت در طول ۶ سال را نشان می دهد. در سه سال اول بسیاری از جدایه ها مقاوم به تایلوزین بودند۱۳۸۵ (٪۹۹/۶)، ۱۳۸۶ (٪۹۹/۶) و ۱۳۸۷ (٪۹۸/۷۵) و بسیاری از آنها نسبت به فلورفنیکول حساسیت داشتند ۱۳۸۵ (٪۸۶/۴)، ۱۳۸۶ (٪۶۲/۸) و ۱۳۸۷ (٪۶۲/۰۸). از سال ۱۳۸۸ تا ۱۳۹۰ نتایج متفاوتی ثبت شد. به ترتیب بالاترین میزان مقاومت برای تتراسایکلین (٪۱۰۰)، اریترومایسین (٪ ۹۷/۸۳) و تتراسایکلین (٪۱۰۰) بود درحالی که لینکومایسین + اسپکتینومایسین حساس ترین ترکیب نسبت به سایرین بود ۱۳۸۸ (٪۷۷/۹۱)، ۱۳۸۹(٪۷۶/۷۵) و ۱۳۹۰ (٪۷۵/۸۳). مطالعه جامع تری باید انجام شود تا بشکل یک برنامه ملی، آزمایش حساسیت ضد باکتریایی تمامی استان ها مورد مقایسه قرار گیرد تا به یک شمای کلی از الگوی حساسیت ضدباکتریایی در داخل کشور دست یابیم.
کلمات کلیدی : اشریشیا کلی، آنتی بیوگرام، ارومیه

بررسی مقایسه ای استفاده ازچهارواحدوهشت واحدآنتیژن هماگلوتینین نیوکاسل درآزمایش HI و هماهنگی آن باالایزا

محمدهادی کیانی*[1]، مهین پوری[2]، سعید چرخکار[2]، محمد حسن بزرگمهری فرد[2]، شهرزاد ناظمی[2]
[1]دانشگاه آزاد اسلامی، واحد علوم و تحقیقات، باشگاه پژوهشگران جوان و نخبگان، تهران، ایران؛[2]دانشگاه آزاد اسلامی، واحد علوم و تحقیقات، گروه علوم درمانگاهی، تهران، ایران
ایمیل نویسنده مسؤول: hadi_kiani_vet@yahoo.com

مقدمه: اهمیت جهانی بیماری نیوکاسل، از نظر ایجاد خسارات اقتصادی، فوق العاده زیاد است. به دلی اهمیت فوق العاده زیادی که بیماری نیوکاسلدارد، پیشگیری از وقوع آن در سطح مزارع یک امری ضروری است. عملکرد مناسب دستگاه ایمنی برای پیشگیری از وقوع بیماری اهمیت حیاتی دارد. در شرایطی که گله‌ها در برابر انتشار سریع عوامل عفونی و شیوع بیماری‌ها بسیار آسیب‌پذیر هستند، ایمن هوموران نقش اصلی را در محافظت پرنده از بیماری بر عهده دارد. به همین دلیل می‌توان بین برانگیختگی پاسخ پارتن یا محافظت در برابر بیماری ارتباط مستقیم قائل شد. از آن جائیکه تعیین میزان پارتن حاصل در آزمایشات HI بعد از واکسیناسیون جهت تعیین میزان ایمنی اهمیت خاص دارد.
روش کار:به دلیل اینکه در بعضی از آزمایشگاهها جهت انجام این آزمایش از ۸ واحد آگوتنین و در بعضی از آزمایشگاهها از ۴ واحد آگلوتنین جهت انجام این آزمایش استفاده می‌شود. در این مطالعه سعی شد که اختلاف این دو روش آزمایش اگر وجود دارد مشخص گردد. جهت این مطالعه تعداد ۵۶ نمونه خون از گله گوشش و تعداد ۳۳۶ نمونه خون از گله مادر گوشتی و تعداد ۶۰۲نمونه خون از گله تخمگذار اخذ گردید. این نمونه‌ها به دو روش متفاوت از نظر میزان واحد آلگوتنین و با شرایط یکسان در موارد دیگر مورد آزمایش قرار گرفتند. جهت مشاهده هماهنگی نتایج حاصله از آزمایش HI (با ۸ واحد آلگوتیناسیون) و آزمایش آلایزا، ۹۰ نمونه خون از گله تخمگذار آزمایش شد
نتایج:در گله گوشتی شماره ۱، بدلیل سن کم گله و تیتر پایین در محاسبه آماری مورد استفاده قرار نگرفت. گله گوشتی شماره ۲، در مقایسه آماری مورد استفاده قرار گرفت و تفاوت معنی داری استفاده از ۴ و ۸ واحد آلگوتنیاسیون مشاهده نگردید- نتایج حاصله از ازمایش نمونه‌های خون از ۴ گله ما در گوشتی در آزمایش آماری با روش T-Student تفاوت بین استفاده از ۴ و ۸ واحد الگوتنیاسیون معنی دار بوده است. نتایج حاصله از آزمایش نمونه‌های خون حاصل از ۹ گله تخمگذار که با همان روش آماری تفاوت معنی داری بین استفاده از ۴ و ۷ آلگوتیناسیون مشاهده شد.
کلمات کلیدی: بیماری نیو کاسل، آزمایشHI ، آزمایش آلایزا، جوجه گوشتی، مادر گوشتی، تخمگذار.

بررسی تاثیرات عصاره الکلی آویشن شیرازی بر روی باکتری باسیلوس سوبتیلیس با روش های MIC و MBC .

طاها باقری، مسعود خاکزادیه ، هادی اسلامی،عادل فیضی

آویشن شیرازی به عنوان ادویه در غذاهای ایرانی سالیان سال مورد استفاده قرار میگرفته است. مطالعات مختلفی بر روی خواص ضد میکروبی و ضد اکسیداسیون (آنتی اکسیدانی) عصاره این گیاه صورت گرفته است. اخیرا عصاره ها و اسانس های این گیاه در صنعت مرغداری مورد استفاده انبوه قرار گرفته است. هدف مطالعه حاضر بررسی تاثیرات این گیاه که با نام علمی zataria multiflora(زاتاریا مولتی فلورا)بر روی باکتری باسیلوس سوبتیلیس استاندارد شده می باشد . نوع عصاره مصرفی از نوع عصاره الکلی تهیه شده از شرکت SOHAمی باشد. برای بررسی MICوMBCاز محیط کشت مولر هینتون براث که10^5 * 5 باکتری فعال به ازای هر میلی لیتر مایع کشت اضافه گردیده بود.لوله ها به مدت ۴۸ساعت در دمای ۳۷ درجه سانتی گراد انکوبه گردیدند. در تست MIC رشد باکتری در dilutions بالای ۱.۵۶٪ و در تست MBC نیز ۱.۵۶٪ ثبت گردید . این یافته نشان تاثیر بسیار قدرتمند این عصاره بر روی باکتری های باسیلوس سوبتیلیس و به تبع آن سایر باکتری های مشابه می باشد.
واژگان کلیدی :عصاره آویشن شیرازی ,MIC,MBC,باسیلوس سوبتیلیس .

بررسی پاستورلوزدرگله های تخمگذارومادرگوشتی دراستانهای مازندران وخراسان درسالهای اخیر

محمدهادی کیانی*[۱]، شهرزاد ناظمی[۲]،محمد حسن بزرگمهری فرد[۲]، سعید چرخکار[۲]، مهین پوری[۲]
[۱]دانشگاه آزاد اسلامی، واحد علوم و تحقیقات، باشگاه پژوهشگران جوان و نخبگان، تهران، ایران;[۲]دانشگاه آزاد اسلامی، واحد علوم و تحقیقات، گروه علوم درمانگاهی، تهران، ایران
ایمیل نویسنده مسؤول:hadi_kiani_vet@yahoo.com

مقدمه: پاستورلوز بیماری عفونی واگیردار تنفسی طیور اهلی ووحشی میباشدکه گاهی به شکل حاد عفونت خون وتلفات سریع وگاهی به شکل مزمن باورم مفاصل یار یش ظاهرمیشود. لویی پاستور در اوایل دهه ۱۸۸۰ توانست اولین واکسن باکتریایی را علیه این بیماری تهیه و با موفقیت استفاده کند.این بیماری به سه شکل فوق حاد ، حاد ، مزمن بروز می کند . در بین پرندگان ، اردک ، غاز و بوقلمون حساس تر از مرغ و خروس هستند و پرندگان مسن بیشتر از جوجه ها درگیر می شوند.
روش کار:این بررسی در۱۲گله تجاری تخمگذار و۱۲گله مادرگوشتی دراستانهای مازندران وخراسان انجام شده است.گله ها ازسن۲۲هفتگی تحت نظرقرارگرفتند،درصورتیکه تلفات بالا وعلائمی چون درگیری مفاصل وریش،عفونت دستگاه تنفس، پیچیدگی گردن،جراحات حلقی وکانژنکتیویت اکسودایی باتلفات کم درگله هامشاهده گردید،اقدام به بررسی لاشه های مشکوک شد وپس ازکالبدگشایی لاشه هاومشاهده علائم شبیه بیماری در اندامهایی چون کبد،چشم وگوش باروش آسپتیک نمونه گیری کرده وسپس نمونه هارابرروی محیط آگارخونداروممککانکی کشت داده وبرای۲۴ساعت درگرمخانه انکوبه گردیدوپرگنه های مشکوک براساس شکل میکروسکوپی ومشخصه های بیوشیمیایی تعیین هویت شدند.
نتایج: بعدازتهیه نمونه ازکبد وریه درمواردحادوکشت جهت تشخیص پاستورلامولتوسیدا انجام شد.برای تشخیص تحت گونه پاستورلامولتوسیدا باید از آزمایشات بیوشیمیایی استفاده شود که وجود پاستورلا مولتوسیدا تأییدگردید.متعاقب آن درخواست ارسال موشهای فارم به آزمایشگاه شد، پس ازکالبدگشایی وتهیه نمونه وکشت درمحیط بلادآگارو مشاهده رشد درآن محیط وعدم رشد درمک کانکیو تشکیل پرگنههای مشکوک باکتری،که وجود پاستورلامولتوسیدابه اثبات رسید.ازتعداد۶گله مشکوک از۱۲گله تجاری تخمگذارتعداد۲نمونه واز۱۲گله مادرگوشتی مورد مطالعه تعداد۵نمونه جداشدکه جمعا از۷گله درگیر،باکتری پاستورلامولتوسیدا جدا گردید.
کلمات کلیدی:پاستورلوز،مرغمادرگوشتی،تخمگذار،مازندران،خراسان

بازجذب کلسترول از کیسه زرده و تعیین شاخص های فیزیولوژیکی در جوجه های تازه تفریخ شده در معرض گرسنگی در پاسخ به تزریق کارواکرول به درون کیسه زرده

میرحسن بیرانوند[۱]،حشمت اله خسروی نیا[۱]،آرش آذرفر[۱]،عزت اله رفیعی علوی[۲]
۱- بخش علوم دامی ، دانشکده کشاورزی دانشگاه لرستان۲-بخش پاتولوژی دانشکده پزشکی دانشکده علوم پزشکی لرستان

برای بررسی اثرات تزریق کارواکرول به درون کیسه زرده روی بازجذب کلسترول از بقایای زرده و پاسخ فیزیولوژیکی در جوجه های تازه تفریخ شده درطی دوره گرسنگی تا ۷۲ ساعت بعد از هچ، ۳۲۰ قطعه جوجه نر سویه راس ۳۰۸ مورد استفاده قرار گرفت. اثرات چهار تیمار آزمایشی شامل گروه کنترل که هیچ تزریقی دریافت نکرده بودند، کنترل ظاهری،تزریق پلی سوربات ۸۰ و کارواکرول در ۵ تکرار هر کدام با ۱۰ جوجه انجام شد. وزن نسبی کبد در جوجه هایی که کارواکرول تزریق شده بود در مقایسه با جوجه های دیگر در ۲۴ ساعت بعد از هچ بیشتر بود($P<0.05$). میانگین میزان گلوکز خون زمانی که جوجه از جعبه های هچری خارج شدند ۱۹۹ میلی گرم در دسی لیتر بود و با افزایش مدت زمان گرسنگی تا ۷۲ ساعت بعد از هچ در تمام جوجه ها کاهش یافت. در حالیکه در جوجه های دریافت کننده کارواکرول میزان کاهش کمتر بود و آنها میزان گلوکز پلاسما نسبت به گروه کنترل و گروه تزریق ظاهری در ۷۲ ساعت بعد از هچ بیشتر بود. هیچ تفاوتی در میزان کلسترول پلاسما در جوجه های تازه تفریخ ، ۲۴،۴۸ و ۷۲ ساعت بعد از هچ مشاهده نشد ولی میزان کلسترول پلاسما در جوجه های گروه کارواکرول در مقایسه با جوجه های دیگر نسبت به تیمارهای دیگر تا ۷۲ ساعت بعد از هچ قابل توجه بود($P<0.05$).میزان کلسیم خون در جوجه های گروه کارواکرول در مقایسه با گروه کنترل و تزریق ظاهری در۲۴ ساعت بعد از هچ بیشتر بود اما در ۷۲ ساعت این مقدار بطور معنی داری در کلیه جوجه ها بجز جوجه های تیمار کارواکرول افزایش یافت که میزان کلسیم کمتری ۱۱.۱۷ میلی گرم در دسی لیتر را نشان داد($P<0.05$).میزان پتاسیم خون در جوجه های گروه کارواکرول وپلی سوربات ۸۰ در مقایسه با گروه کنترل و تزریق ظاهری در۲۴ ساعت بعد از هچ بیشتر بود($P<0.05$).
نتایج این مطالعه نشان می دهد که هیچ اثر متقابلی بین کارواکرول و کلسترول که منجر به کاهش جذب کلسترول در کیسه زرده جوجه ها شود، وجود ندارد.

مطالعه دستگاه گوارش مرغ مینا با مواد حاجب یدوکسانول، آیوهگزول و سولفات باریم

*شبیر جهانگیری[1]، رسول رحیم زاده[2]**
۱- دانشجوی دکترای دامپزشکی، واحد سنندج، دانشگاه آزاد اسلامی
۲- استادیار گروه علوم درمانگاهی دانشکده دامپزشکی، واحد سنندج، دانشگاه آزاد اسلامی، سنندج، ایران
drrahimzadeh@iausdj.ac.ir

هدف: بیماری های لوله گوارشی بصورت مکرر در پرندگان رخ می دهد، مطالعه دستگاه گوارش با مواد حاجب اغلب بر اساس عدم پرشدن کامل مورد تشخیص قرار می گیرد، زخم ها، ناهنجاری ها در اندازه، شکل و ساختار حفره سیلومی، وجود اجسام خارجی، تغییرات حرکتی در لوله گوارشی و ناهنجاری های دیواره و مخاط با این مطالعه قابل شناسایی هستند، آیوهگزول و یدوکسانول دو ماده حاجب غیریونی و ید دار هستند که می توانند جایگزین سولفات باریم در مطالعه دستگاه گوارش شوند.

مواد و روش ها :یدوکسانول و آیوکسانول بصورت رقیق شده و غیر رقیق شده با نسبت ۱ به ۱ و ۱ به ۲ از طریق گاواژ به۱۲ مرغ مینا و بدون استفاده از بیهوشی داده شد، حجم این دو ماده بر اساس میزان پرشدگی کامل سنگدان در این پرندگان و به میزان ۲۲ میلی لیتر بر کیلوگرم تعیین شد. بعد از تجویز مواد حاجب رادیوگراف هایی در نمای پشتی- شکمی و جانبی بلافاصله بعد از تزریق و و در زمان های ۱، ۵، ۱۵، ۳۰، ۶۰، ۷۵ و ۹۰ دقیقه بعد تهیه شد و سپس هر نیم ساعت تصویربرداری ادامه یافت تا ماده حاجب تمام طول لوله گوارش را طی کند و به کلوآک برسد، برای داشتن بهترین وضوح در جزئیات از کاست و فیلم ماموگرافی استفاده شد.

نتایج و بحث:زمانی که این ۳ ماده مورد مطالعه مقایسه قرار می دهیم متوجه می شویم که از نظر میزان پرشدگی و مشاهده جزئیات تفاوتی بین آیوهگزول، یدوکسانول غیر رقیق و رقیق شده با نسبت ۱ به ۱ و سولفات باریم دیده نمی شود، ولی استفاده از مواد حاجب غیر یونی یددار بطور معنی داری سرعت بیشتری در عبور از دستگاه گوارش تا رسیدن به کلوآک دارند بطوریکه در مورد مطالعه با سولفات باریم لین مدت زمان ۳ ساعت و دو ماده دیگر یک ساعت است، لذا این مواد جایگزین مناسبی برای مطالعه دستگاه گوارش پرندگان خصوصا مرغ مینا هستدو رقیق کردن آن ها نیز به نسبت ۱ به ۱ توصیه می شود، ضمن اینکه در موارد مشکوک به سوخ شدگی دستگاه گوارش استفاده از آن ها بر خلاف سولفات باریم امکان پذیر است.

کلمات کلیدی: مرغ مینا، دستگاه گوارش، یدوکسانول، آیوهگزول، سولفات باریم

بررسی فراوانی ژنهای *iss* و *irp2* در *اشریشیاکلی* جداشده ازجوجه های مبتلا به کلیباسیلوزدرمقایسه با جوجه های سالم در سیستان

محمدصادق صادقی بنجار، سعید سالاری، محمد جهانتیغ، احمد راشکی

طیف وسیعی از عفونت های خارج روده ای در انسان وحیوانات به وسیله سویه های *اشریشیا کلی* خارج روده ای EXPEC ایجاد می شود. از جمله می توان به سویهAPEC اشاره نمود که عامل کلی باسیلوز طیور است. در سالهای اخیر، اطلاعات مفیدی در مورد عوامل حدت *اشریشیاکلی* بیماریزای طیور و نیز مکانیزم های توسعه عفونت به کار گرفته شده توسط این باکتری و نیز ایجاد بیماری با استفاده از روش های دقیق مولکولی حاصل شده است. از مهمترین عوامل حدت می توان به آئروباکتین سیستم جذب آهن و مقاومت به سرم در این باکتری اشاره کرد. ژن افزایش دهنده بقای سرمی یا *iss*در مقاومت کمپلمان سرمی مرتبط با پلاسمید *Colv* در *اشریشیاکلی*دارای نقش می باشد. غلظت آهن آزاد مورد نیاز برای رشد باکتری در مایعات فیزیولوزیک حیوانات (10^{-6} مول در لیتر) تامین نمی شود. به همین علت برخی از باکتری های بیماری زا، دارای سیستم های اخذ آهن با تمایل بالا هستند که سیدروفورهای میزبان رقابت می کنند تا آهن مورد نیاز برای رشد باکتری را فراهم کنند. . سیدروفورها شامل آنتروباکتین و آئروباکتین هستند که توسط ژن *iuC,irp2,iroA* کنترل می شوند. تاکنون با توجه به مناطق جغرافیایی ایران، خاصیتی که بتوان جدایه های APEC را از AFEC تفریق داد یافت نشده است. هدف از این مطالعه بررسی فراوانی دو ژن حدت *iss* و *irp2* در *اشریشیاکلی* به دست آمده از مدفوع طیور سالم و *اشریشیاکلی* به دست آمده از موارد کلی باسیلوز می باشد. در تحقیق حاضر، تعداد ۴۳ *اشریشیاکلی* که از مدفوع پرندگان سالم جدا شده بود (AFEC). و نیز تعداد ۴۰ *اشریشیاکلی* که از کبد پرندگان مبتلا به کلی باسیلوز و همچنین تعداد ۴۶ *اشریشیاکلی* که از کلیه پرندگان مبتلا به کلی باسیلوز جدا شده بود، پس از تعیین هویت باکتری، به روش جوشاندن DNA باکتری جدا سازی شد و با استفاده از روش PCR از نظر حضور ژن های موثر در حدت به نام های *iss* و *irp2* مورد مطالعه قرار گرفتند. در سویه AFEC برای ژن *iss* میزان فراوانی ۳۷/۲ درصد و برای ژن *irp2* آلودگی ۲۷/۹ درصد می باشد. در سویه های جدا شده از موارد کلی باسیلوز میزان فراوانی در کبد و کلیه برای ژن *iss* به ترتیب ۸۲/۵، ۹۱/۳ درصد و برای ژن *irp2* به ترتیب ۶۰ و ۵۸/۷ درصد بود. همچنین فراوانی نسبی سویه های *اشریشیاکلی* جدا شده از موارد کلی باسیلوز که حامل هر دو ژن حدت *iss* و *irp2* به تفکیک محل جداسازی در کبد ۵۰ درصد و در کلیه ۵۴/۳۴ درصد و برای سویه های AFEC این فراونی ۱۹/۶۲ به دست آمد. به طور میانگین ۸۶/۹ جدایه به دست آمده از پرندگان مبتلا به کلی باسیلوز از نظر وجود ژن *iss* مثبت بودند. این ژن در نمونه های بدست آمده از مدفوع پرندگان سالم به مقدار ۳۷/۲ درصد می باشد. نتایج آماری تفاوت معنی داری را بین پرندگان سالم و بیمار از نظر وجود ژن *iss* نشان داد ($P<0.05$). همچنین به طور میانگین، میزان ۴۳/۳ درصد از سویه های *اشریشیاکلی* جدا شده از موارد کلی باسیلوز دارای ژن *irp2* بودند در حالی که سویه های جدا شده از مدفوع پرندگان سالم برابر با ۲۷/۹ بوده و این تفاوت از نظر آماری معنی دار می باشد($P<0.05$). فراوانی حضور هم زمان هر دو ژن موثر در حدت در سویه های *اشریشیاکلی* جدا شده از موارد کلی باسیلوز به طور میانگین به میزان ۵۲/۱۷ درصد و در سویه های AFEC برابر با ۱۹/۶۲ درصد می باشد که با انجام آزمون آماری مشاهده شد که سویه های جدا شده از موارد کلی باسیلوز به صورت معنی داری بیشتر از سویه های AFEC حامل هر دو ژن می باشند($P<0.05$). این تفاوت مشخص در مورد توزیع ژن *iss* و *irp2* در سویه های *اشریشیاکلی* جدا شده از موارد بالینی کلی باسیلوز با سویه های جدا شده از مدفوع طیور سالم باعث می شود که بتوان *iss* و *irp2* را در منطقه سیستان به عنوان ژن هایی که در تشخیص *اشریشیاکلی* بیماری زای طیور کمک می کند در نظر گرفت و همچنین می توان در آینده از آن به عنوان هدفی جهت تلاش برای کنترل بیماری کلی باسیلوز استفاده کرد.

کلمات کلیدی:*اشریشیاکلی*، کلی باسیلوز، *iss*،*irp2*،PCR

تعیین فراوانی ژن حدت *iss* و *bor* در *اشریشیاکلی* جدا شده از مدفوع شترمرغ

*افسانه حسینی، سعید سالاری**،احمد راشکی،محمد جهانتیغ*

دانشکده دامپزشکی، دانشگاه زابل، زابل، ایران

نویسنده مسؤول: saeedsalari@ut.ac.ir

مقدمه: در سالهای اخیر، نگهداری و پرورش شترمرغ به عنوان یک زمینه برای کارآفرینی مطرح بوده و علاقه افراد به سمت نگهداری و پرورش این پرنده جهت یافته است. *اشریشیاکلی* به عنوان فلور طبیعی روده به عنوان مخزنی از ژن ها قابل بررسی بوده و به نظر می رسد گاهی نیز سبب انتقال ژن های حدت از گونه ای از حیوانات به گونه دیگر باشد. تاکنون تحقیقی در ارتباط با بررسی ژنهای حدت*iss*و *bor* در *اشریشیا کلی جدا شده از شترمرغ انجام نشده است*.ژن های حدت*iss*و *bor*، در مقاومت سرمی *اشریشیاکلی*بیماریزای طیور نقش دارند.مطالعه همزمان این دو ژن، به علت شباهت ساختاری و عملکردی ضروری به نظر می رسد.هدف از انجام این تحقیق، بررسی حضور و فراوانی دو ژن حدت *iss* و *bor* در *اشیریشیا کلی* جدا شده از شترمرغ های به ظاهر سالم است.

روش کار: مطالعه از نوع توصیفی مقطعی می باشد. تعداد ۵۹ نمونه مدفوع شترمرغ های به ظاهر سالم جمع آوری شد.پس از شناسایی *اشریشیا کلی*توسط روشهای متداول آزمایشگاهی، با روش PCR، حضور ژن های *iss* و *bor* مورد بررسی قرار گرفت.

نتایج: از ۵۹ نمونه مدفوع شترمرغ سالم، تعداد ۴۵ نمونه دارای*اشیریشیاکلی* (۷۶٪) بود که پس از انجام PCR روی*اشیریشیاکلی*، ۲۲ نمونه (۴۸٪) دارای ژن *iss* و ۱۴ نمونه دارای ژن *bor*(۳۱٪) بودند.

بحث: این مطالعه به عنوان اولین بررسی فراوانی ژن *bor*و *iss*در شترمرغ در ایران محسوب می شود. یکی از مهم ترین و شایع ترین پاتوژن های باکتریایی طیور *اشریشیا کلی* است که عامل کلی باسیلوز در طیور است. سویه های خاصی از آن بوسیله فاکتور های حدت قادر به ایجاد بیماری هستند. با توجه به شیوع بالای دو ژن حدت مورد مطالعه در این تحقیق در فلور طبیعی شترمرغ، می توان به این موضوع اشاره کرد که شترمرغ می تواند به عنوان منبعی برای انتقال این ژن های حدت به طیور دیگر عمل کند.

کلمات کلیدی: شتر مرغ، iss، bor، واکنش زنجیره ای پلیمراز

تأثیر استفاده از پری‌بیوتیک در جیره بر عملکرد رشد بلدرچین‌های ژاپنی

*حسنا حاجاتی** *و احمد حسن آبادی*

دکترای تخصصی تغذیه طیور دانشگاه فردوسی مشهد، مدیر عامل شرکت هوشمندپروران هونامیک، ساری، ایران

استاد تغذیه طیور، دانشکده علوم دامی، دانشگاه فردوسی مشهد، مشهد، ایران

ایمیل: hosna.hajati@yahoo.com

اهداف: امروزه حذف آنتی‌بیوتیک‌ها از صنعت طیور سبب شده است تا متخصصین طیور به دنبال جایگزین‌هایی برای آن‌ها باشند تا بر مشکلات مقاومت باکتری‌های مضر غلبه کنند. پری‌بیوتیک‌ها به عنوان اقلام خوراکی غیرقابل هضم تعریف می‌شوند که می‌توانند توسط برخی میکروارگانیسم‌های روده استفاده شوند و تأثیر مفیدی بر عملکرد میزبان داشته باشند. بنابراین، هدف از این مطالعه ارزیابی تأثیر استفاده از یک نوع پری‌بیوتیک (اکتیوموس) در جیره بر عملکرد رشد بلدرچین‌های ژاپنی بود.

مواد و روش‌ها: در این آزمایش، تعداد ۸۰ قطعه جوجه بلدرچین ژاپنی ۷ روزه تعیین جنسیت نشده در قالب طرح آزمایشی کاملًا تصادفی با ۲ تیمار و ۴ تکرار استفاده شد. پرندگان به طور تصادفی به ۸ پن (۱۰ پرنده به ازای هر پن) تقسیم شدند. اقلام اصلی جیره‌ها شامل ذرت و کنجاله سویا بود. جیره‌های آزمایشی شامل ۲ سطح پری‌بیوتیک (۰، ۲ گرم/کیلوگرم) بودند. پری‌بیوتیک مورد استفاده در این پژوهش پری‌بیوتیک اکتیوموس (مشتق شده از مخمر ساکارومایسس سرویزیه، ۲۵ درصد مانان الیگوساکارید، ۳۰ درصد بتاگلوکان، برزیل) بود. پرندگان به طور آزاد به آب و خوراک دسترسی داشتند. جیره‌ها به منظور تأمین احتیاجات غذایی بلدرچین مطابق با توصیه انجمن ملی تحقیقات (NRC، ۱۹۹۴) تنظیم شدند. وزن بدن، مصرف خوراک و ضریب تبدیل غذایی پرندگان به طور هفتگی اندازه‌گیری شد. داده‌های حاصل از این آزمایش با استفاده از رویه GLM نرم افزار آماری SAS مورد تجزیه و تحلیل قرار گرفتند (SAS, 2008).

نتایج و بحث: در تمامی دوره‌های آزمایشی، پرندگان تغذیه شده با جیره‌های حاوی پری‌بیوتیک ضریب تبدیل غذایی کمتری داشتند. همچنین در هفته-های دوم و سوم آزمایش، مصرف خوراک کاهش و اضافه وزن بدن افزایش یافت. به طور کلی، بلدرچین‌های تغذیه شده با پری‌بیوتیک اکتیوموس طی سنین ۷ تا ۴۲ روزگی عملکرد رشد بهتری نشان دادند. پیش‌تر گزارش شد که مکمل کردن پری‌بیوتیک بیوماس در جیره سبب بهبود ضریب تبدیل غذایی مرغ‌های مادر گوشتی شد هر چند که اختلافات از نظر آماری معنی‌دار نبود (حاجاتی و همکاران، ۲۰۱۴). مزایای مانان الیگوساکارید می‌تواند به علت خواص ویژه‌اش نظیر تعدیل فلور روده، کاهش نرخ ترن اور مخاط روده و تعدیل سیستم ایمنی باشد (حاجاتی و همکاران، ۲۰۱۲). نتیجه‌گیری کلی این که افزودن اکتیوموس در سطح ۲ گرم به ازای هر کیلوگرم جیره سبب بهبود عملکرد رشد بلدرچین‌های ژاپنی شد.

واژه‌های کلیدی: پری‌بیوتیک، بلدرچین ژاپنی، عملکرد رشد

ارزیابی استفاده از یک محصول مخمر مایع بر عملکرد رشد بلدرچین‌های ژاپنی

حسنا حاجاتی*[۱]، علی گیلانی[۲]، سعید سیفی[۲]
*[۱]شرکت هوشمندپروران هونامیک، ساری، ایران، [۲]دانشکده دامپزشکی، دانشگاه تخصصی فناوری‌های نوین آمل، آمل، ایران
ایمیل: hosna.hajati@yahoo.com

اهداف:در سال‌های اخیر، جایگزین‌های آنتی‌بیوتیک‌ها نظیر پری‌بیوتیک‌ها بسیار مورد توجه هستند. بنابراین آزمایشی به منظور ارزیابی یک مخمر هیدرولیز شده به روش آنزیمی به عنوان یک پری‌بیوتیک مایع جدید بر صفات عملکرد رشد بلدرچین‌ها انجام شد.
مواد و روش‌ها:تعداد ۸۰ قطعه جوجه بلدرچین ژاپنی ۷ روزه تعیین به طور تصافی به ۲ تیمار اختصاص داده شد. هر تیمار شامل ۴۰ پرنده و ۴ تکرار (پن) با ۱۰ پرنده در هر پن بود. اولین تیمار (شاهد) حاوی جیره استاندارد توصیه شده بدون استفاده از پری‌بیوتیک بود. تیمار دوم شامل جیره شاهد به همراه استفاده از یک پری‌بیوتیک مایع در آب آشامیدنی بود (۰/۵ میلی‌لیتر سلماناکس به ازای هر لیتر آب، حجمی/حجمی). سلماناکس یک محصول پری‌بیوتیکی شامل مخمر هیدرولیز شده آنزیمی به علاوه محیط کشت مخمر و عصاره مخمر است که توسط یک شرکت آمریکایی تولید می‌شود. جیره‌ها به منظور تأمین احتیاجات غذایی بلدرچین مطابق با توصیه انجمن انجمن ملی تحقیقات (NRC، ۱۹۹۴) تنظیم شدند. در طول دوره آزمایشی (۳۵-۷ روزگی) آب و خوراک به طور آزاد در اختیار پرندگان قرار گرفتند. افزایش وزن بدن، مصرف خوراک و ضریب تبدیل غذایی به طور هفتگی اندازه‌گیری شد. داده‌های حاصل از این آزمایش توسط رویه GLM نرم افزار آماری SAS مورد تجزیه و تحلیل قرار گرفتند (SAS، ۲۰۰۸).
نتایج و بحث:نرخ مرگ و میر تحت تأثیر تیمارها قرار نگرفت. افزودن این فراورده حاصل از مخمر به آب آشامیدنی بلدرچین‌ها در تمامی دوره‌های پرورشی سبب کاهش مصرف خوراک پرنده‌ها شد. وزن بدن پرنده‌هایی که سلماناکس دریافت کرده بودند در مقایسه با گروه شاهد در سن ۲۱ روزگی به طور معنی‌داری بیشتر بود. همچنین افزایش وزن بدن در کل دوره آزمایش به طور عددی بهبود یافت هر چند که از لحاظ آماری معنی-دار نبود. ضریب تبدیل غذایی بلدرچین‌های تغذیه شده با سلماناکس بهتر از پرنده‌های تغذیه شده با جیره شاهد بود که با مصرف خوراک کمتر و اضافه وزن بدن بیشتر در تمام هفته‌های آزمایش توجیه‌پذیر است. در نتیجه، افزودن این محصول پری‌بیوتیک مایع حاصل از مخمر تأثیر برجسته-ای بر صفات تولیدی بلدرچین‌ها داشت. هرچند تحقیقات بیشتری نیاز است تا سطح بهینه مصرف این افزودنی در بلدرچین‌ها مشخص شود.
واژه‌های کلیدی: سلماناکس، بلدرچین، کارایی خوراک، رشد

اثرتزریق داخل صفاقی عصاره آبی سیاهدانه بر روی عملکرد بدن ، وضعیت آنتی اکسیدانی خون و جمعیت باکتریایی سکوم و ماهیچه جوجه های گوشتی

حسین سعید[۱] ، مهین راهداری[۲] ، علی مداحیان[۲] ، فائزه کرمی[۲] ، عاطفه نصری[۳]
نویسنده مسؤول: nasriatefeh@shirazu.ac. ir
بخش علوم دامی دانشکده کشاورزی دانشگاه زابل، زابل ایران۱. بخش کشاورزی پیام نوردانشگاه تهران، تهران ایران۲.بخش بهداشت مواد غذایی دانشکده دامپزشکی، دانشگاه شیراز، شیراز ایران۳.

هدف :در این مطالعهاثرات تزریق داخل صفاقی عصاره آبی سیاهدانه(*Nigella Sativa*)برعملکرد بدن، سطح آنتی اکسیدانی خون ،شمارش کلی باکتریایی و شمارش کلی کلیفرمی سکوم و ماهیچه جوجه های گوشتی در ۲۱ روزگی مورد بررسی قرار گرفت.
مواد و روش ها :به طور کلی۶۰ جوجه یک روزه(Ros) از یک جوجه کشی محلی گرفته شدند. در بدو ورود، جوجه ها وزن شدند و به صورت تصادفیدر قفس های با بستر تراشه های چوب قرار داده شدند (۱۵ جوجه در هرقفس). جوجه ها به چهار تیمار تقسیم شدند: گروه کنترل ، ۲۵۰μL عصاره آبی ،۵۰۰μL عصاره آبی و ۷۰۰μL عصاره آبی.این غلظت های عصاره آبی که در روز اول تزریق شدند. به همه جوجه ها رژیم غذایی پایه اختصاص داده شد. در روز ۲۱، خصوصیات عملکردی هر گروه مورد ارزیابی قرار گرفت، همچنین ۳mL نمونه خون از سیاهرگ بالی ۱۰ جوجه در هرتیمار گرفته شد، سپسDPPH۱-۱ دی فنیل -۲- پیکریل- هیدرازیل) و FRAP (کاهش توانایی فریک پلاسما) به عنوان شاخص آنتی اکسیدانی خون اندازه گیری شدند؛ و شمارش کلی باکتری و شمارش کلی کلیفرم در نمونه های سکوم و ماهیچه بعد از ذبح اسلامی ۵ جوجه در هر تیمار تعیین شدند .
نتایج : تفاوت معنادار در مورد شاخص وزن بدن و افزایش وزنی بین دو گروه کنترل و گروه ۷۵۰μL عصاره آبی مشاهده شد($P< 0/05$) .بیشترین ضریب تبدیل غذاییدر تیمار۷۵۰μL عصاره آبی بود($P< 0/05$) . سطح DPPH و FRAP نمونه های خونی بین گروه های کنترل و۷۵۰μL عصاره آبی معنا دار بوده است . شمارش کلی کلیفرم ها و شمارش کلی باکتریایی در نمونه های ماهیچه و سکوم تفاوت معنی دار را بین گروه های کنترل و ۷۵۰μL عصاره آبینشان می داد($P< 0/05$).
کلمات کلیدی: سیاهدانه ، عصاره آبی ، تزریق داخل صفاقی، عملکرد وضعیت آنتی اکسیدانی ، شمار کلی کلیفرم ها ، شمار کلی باکتری.

اثر عصاره مرزه خوزستانی بر پارامترهای عملکرد و پاسخ آنتی‌بادی به واکسیناسیون بیماری نیوکاسل در جوجه‌های گوشتی در شرایط استرس سرمایی

سعیده کر، عبدالکریم زمانی مقدم، عبداله کیانی، نسرین وکیلی، ساحل کیوانی هفشجانی

هدف: اخیرا، افزودنی‌های خوراکی گیاهی مانند روغن‌های ضروری و عصاره‌های گیاهی به خاطر اثرات مضر بیولوژیکی کمتر، توجه زیادی را به عنوان جایگزین آنتی‌بیوتیک به خود جلب کرده‌اند. مرزه خوزستانی یکی از عصاره‌های گیاهی می‌باشد که به عنوان یک عامل درمانی مطرح شده است که شامل روغن‌های ضروری، فلاونوئیدها و تری‌ترپنوئیدها می‌باشد و اثرات مفیدی بر ضریب تبدیل غذایی دارد، اما اثر آن بر جوجه‌های گوشتی در شرایط استرس سرمایی مورد بررسی قرار نگرفته است.

مواد و روش‌ها: تعداد ۱۳۵ قطعه جوجه گوشتی یک روزه سویه تجاری راس ۳۰۸ از هر دو جنس در قالب طرح کاملا تصادفی به سه گروه ۴۵تایی تقسیم شدند(۱۵ پرنده/تکرار). گروه‌های آزمایشی شامل گروه شاهد و سطوح 250 ppm و 500 ppm مرزه خوزستانی(شرکت داروسازی باریج اسانس) از یازده روزگی می‌باشد. عصاره مرزه به آب آشامیدنی گروه‌های تیمار افزوده شد و تمام گروه‌ها تا پایان آزمایش به طور آزاد خوراک و آب دریافت کردند. دمای محیط نسبت به وضعیت عادی با سرعت بیشتری کاهش یافت و از پایان هفته دوم تا پایان هفته چهارم به 16 ºC رسید و پس از آن تا سطح طبیعی افزایش یافت. واکسیناسیون بیماری نیوکاسل با واکسن‌های زنده لنتوژنیک انجام شد. در پایان، از ۹ پرنده که وزن بدنشان به وزن متوسط گروه نزدیک‌تر بود خونگیری شد و برای اندازه‌گیری بازده لاشه ذبح و اندام‌های داخلی انتخاب شدند. ارزیابی پاسخ ایمنی هومورال با تست HA و HI انجام شد.

نتایج و نتیجه‌گیری: نتایج نشان می‌دهد ضریب تبدیل غذایی در غلظت 500 ppm نسبت به گروه کنترل و 250 ppm بهتر است($P<0.05$)، اما گروه تیمار 250 ppm بهترین درصد بازده لاشه را دارد($P\geq0.05$). مرگ و میر در گروه شاهد به طور معنیداری بیشتر از گروه‌های دیگر است($P<0.05$). درصد وزن اندام‌های داخلی از جمله درصد وزن کبد و طحال در 250 ppm بهتر است، اگر چه معنی دار نمی‌باشد. وزن قلب در گروه کنترل بیشتر می‌باشد که ممکن است به دلیل شروع سندرم آسیت باشد. بهترین پاسخ ایمنی هومورال به واکسن بیماری نیوکاسل در غلظت 500 ppm است($P<0.05$). می‌توان نتیجه گرفت که افزودن عصاره مرزه خوزستانی با غلظت 500 ppm به آب آشامیدنی در شرایط استرس سرمایی، ضریب تبدیل غذایی را بهبود بخشیده و باعث کاهش مرگ و میر می‌شود و می‌تواند بر حصول پاسخ ایمنی هومورال بهتر پس از واکسیناسیون بیماری نیوکاسل اثرات سودمندی داشته باشد.

اثر CpG ODN روی کلونیزاسیون روده ای سالمونلا انتریتیدیس در جوجه های گوشتی

*طاهره میری[1] مهرناز راد[2] غلامعلی کلیدری آبراهیم ابوترابی ریزه[3*4] محمد علی داورزنی[5]*

۱-دانش آموخته دانشکده دامپزشکی دانشگاه فردوسی مشهد، مشهد- ایران، ۲-استادیار بخش میکروبیولوژی و گروه پاتوبیولوژی دانشکده دامپزشکی دانشگاه فردوسی مشهد، مشهد-ایران

۳-دانشیار بخش طیور و گروه علوم درمانگاهی دانشکده دامپزشکی دانشگاه فردوسی مشهد، مشهد-ایران، ۴-دانشجو دکتری دامپزشکی دانشگاه آزاد اسلامی واحد گرمسار، ۵- دانشجو دکتری دامپزشکی دانشگاه آزاد اسلامی واحد گرمسار

سیستم ایمنی ذاتی مهره داران DNA میکروبی را به عنوان علامت خطر شناسایی می کند. DNA باکتریایی یا ویروسی حاوی دی نوکلئوتیدهای CpG غیر متیله می باشد. نشان داده شده است که الیگو دی اکسی نوکلئوتیدهای سنتتیک حاوی CpG (CpG-ODN) ، DNA میکروبی را تقلید می کنند و سیستم ایمنی ذاتی مهره داران را علیه بسیاری از عفونت های باکتریایی ، ویروسی و تک یاخته ای تحریک می کنند . پاسخ های دفاعی احتمالا به وسیله گیرنده های شناخت الگویی (PRRs) میزبان مانند TLR ها برانگیخته می شوند، این گیرنده ها الگوهای مولکولی وابسته به پاتوژن را شناسایی می کنند و منجر به پاسخ های دفاعی می گردند.CpG-ODN سنتتیک و DNA باکتریایی یا ویروسی که دارای دی نوکلئوتیدهای CpG غیر متیله فراوان تری نسبت به DNA مهره داران هستند، به عنوان این الگوهای مولکولی می باشند.

در این بررسی در دو روزگی یک دز CpG –ODN به میزان ۵۰ میکروگرم به ازای هر جوجه به گروه درمانی (گروه CpG) و در همین زمان به دو گروه شاهد (گروه PBS) PBS به صورت زیر جلدی تزریق شد.۳ ساعت ،۴ روز ،۷ روز و ۱۴ روز بعد از تزریق CpG-ODN ، باکتری سالمونلا انتریتیدیس با دز مشخص به تمام جوجه ها به غیر از یک گروه شاهد، خورانده شد. سکوم هر جوجه به صورت استریل جدا شدو محتویات سکوم هر سه جوجه به صورت توأم در لوله درپیچ دار استریل ریخته شد و برای شمارش **تعداد سلولهای زنده در هر گرم از محتویات سکوم** کشت داده شد. نتایج نشان داد که کلونیزاسیون روده ای در گروه CpG وگروه PBS (شاهد) در روز های ۴، ۷و ۱۴ بعد از دریافت CpG-ODN اختلاف آماری معنی داری نداشت، ولی در۳ ساعت پس از دریافت CpG-ODN، اختلاف کلونیزاسیون روده ای در دو گروه معنی دار بود($p < 0.05$) علاوه بر این ، برای تعیین تأثیر سن دریافتCpG ، در آزمایشی دیگر در ۵ روزگی به تعدادی جوجه یک دز CpG –ODN و به گروه شاهد، PBS به صورت زیر جلدی تلقیح شد. ۲۴ ساعت بعد باکتری سالمونلا انتریتیدیس با دز مشخص به جوجه ها ی هر دو گروه خورانده شد. کلونیزاسیون روده ای سالمونلا در گروه CpG و گروه PBS (شاهد) اختلاف معنی داری نداشت.

کلمات کلیدی : CpG-ODN، سالمونلا انتریتیدیس، کلونیزاسیون روده ای،جوجه گوشتی

بررسی میزان شیوع مایکوپلاسما سینوویه در مزارع گوشتی استان آذربایجان غربی در سال ۲۰۱۵

جعفر طایفه باقرلو[۱]، دانا انوشه[۲]، سیما قریشی
[۱] گروه علوم درمانگاهی *دانشکده دامپزشکی، دانشگاه ارومیه*، ارومیه، ایران
[۲] دانشجوی دامپزشکی، *دانشکده دامپزشکی، دانشگاه ارومیه*، ارومیه، ایران
ایمیل نویسنده مسؤول: J.tayefeh@urmia.ac.ir

مقدمه: هدف از این مطالعه بررسی سرولوژیکی آنتی بادی مایکوپلاسما سینوویه در مرغهای گوشتی استان آذربایجان غربی در سال ۲۰۱۵ می باشد. مایکوپلاسما سینوویه یکی از مهمترین عوامل بیماریزای طیور می‌باشد که موجل عفونت تحت بالینی سیستم تنفسی و عفونت مفاصل می شود. اهمیت اقتصادی اصلی سویه‌های آتروپاتوژنیک مایکوپلاسما سینوویه به علت عقب ماندگی رشد پرنده و فلجی می باشد. انتقال این بیماری به هر دو صورت عمودی و افقی است. انتقال عمودی نقش مهمی در انتشار مایکوپلاسما سینویه دارد، بنابراین باید جوجه ها عاری از این پاتوژن باشند.

موا و روش کار: تعداد ۲۵۰ نمونه سرم از ۲۰ فارم گوشتی در آذربایجان غربی جمع‌آوری و با استفاده از آنتی‌ژن اختصاصی مایکوپلاسما سینوویه (*Soleil® MS Antigen, France*) *تست رپید انجام شد. نمونه‌هایی که در تست سریع سرمی تا رقت ۱:۸ و بالاتر و در ۲ دقیقه آگلوتیناسیون انجام شد، مثبت گزارش شدند.*

نتایج: میزان شیوع سرولوژیکی مایکوپلاسما سینوویه در نمونه های سرم ۷۹.۳۱ درصد گزارش شد. تست سریع سرمی (RSA) یک می تواند آنتی بادی های IgG و IgM را تشخیص دهد، بنابراین یک تست با ارزش برای تشخیص اولیه عفونت مایکوپلاسما سینویه می باشد. نتایج این مطالعه نشان می‌دهد مایکوپلاسما سینوویه شیوع و اهمیت زیادی در مزارع مرغ گوشتی استان آذربایجان‌غربی دارد.

کلمات کلیدی: مایکوپلاسما سینوویه، شیوع، تست سریع سرمی، مرغ گوشتی

تاثیر سطوح مختلف پروبیوتیک و سیر بر پارامترهای بیوشیمیایی و ایمنی جوجه های گوشتی

سیده زینب پیغمبرزاده ; مصطفی قلاوند ; مجتبی مهرانفر ; مارال صالحی وربادی*
ایمیل : M.Qalavand@gmail.com

امروزه با توجه به ممنوع شدن استفاده از آنتی بیوتیک های محرک رشد برای تغذیه جوجه های گوشتی، استفاده از پروبیوتیک ها و گیاهان دارویی در حال افزایش میباشد.

این مطالعه به منظور بررسی مقایسه ای تاثیر سطوح مختلف پروبیوتیک و سیر بر پارامترهای بیوشیمیایی و ایمونولوژی جوجه های گوشتی انجام شد. این آزمایش در قالب طرح کاملا تصادفی با ۴ تیمار و ۴ تکرار(هرتکرار شامل ۲۰ قطعه) انجام شد. برای آزمایش از ۳۲۰ قطعه جوجه گوشتی یک روزه سویه راس ۳۰۸ استفاده و به مدت ۴۲ روز روی بستر پرورش داده شدند. جیره های غذایی بر اساس پیشنهادها و جداول NRC تهیه شدند. در روز ۴۲ پرورش جوجه های گوشتی از هر واحد آزمایش ۲ قطعه پرنده انتخاب شده و از آنها خون گیری به عمل آمد. جیره های آزمایشی شامل: تیمار اول جیره پایه بدون هیچ افزودنی(جیره شاهد)، جیره پایه به همراه پروبیوتیک پروتکسین(سطوح ۱۰و۱۵ گرم در کیلوگرم) و جیره پایه به همراه ۰/۱پودر سیر بودند.

نتایج آزمایش نشان داد در گروه آزمایش، تغذیه با پروبیوتیک موجب کاهشpH ایلئوم روده(۵/۸۷) می شود. در گروه آزمایشی که از مکمل غذایی سیر استفاده شده بود، تاثیر معنی داری بر تیتر نیوکاسل(۵/۸) داشت($P<0/05$) اما در تمامی تیمارها تاثیری بر تیتر آنتی SRBC و برونشیت مشاهده نشد($P>0/05$). در گروه آزمایشی که از پروبیوتیک در دان استفاده شده بود، پروبیوتیک توانست کلسترول (تیمار سطح ۱۰ گرم در کیلوگرم۹۸/۴۵ میلی گرم در دسی لیتر و تیمار سطح ۱۵ گرم در کلیوگرم ۷۸/ ۱۰۱ میلی گرم در دسی لیتر) و HDL (تیمار سطح ۱۰ گرم در کیلو گرم ۸۸/ ۵۸ میلی گرم در دسی لیتر) و تیمار سطح ۱۵گرم در کیلوگرم۵۶/۳۵ میلی گرم در دسی لیتر) خون را کاهش دهند و اختلاف معنی داری نسبت به گروه های شاهد داشته باشند($P<0/05$). اثرات پروبیوتیک و مکمل سیر بر سطوح تری گلیسرید، LDL ، گلوکز و پروتئین در گروههای تحت آزمایش تفاوت معنی داری را با گروه شاهد ایجاد نکردند. به طورکلی نتایج این آزمایش نشان داد که استفاده از پروبیوتیک و سیر موجب بهبود تقویت سیستم ایمنی و تغییر برخی از پارامترهای خونی جوجه های گوشتی شود.

واژه های کلیدی: پروبیوتیک، سیر، سیستم ایمنی، پارامترهای بیوشیمیایی، جوجه های گوشتی

ارزیابی تعدادی از فاکتورهای شیمیایی و میکروبی آب های آشامیدنی مرغداری های گوشتی شهرستان اشنویه

عبدالله منگور کردستانی[۱]، مسلم نیریز نقدهی[۲*]، مهدی رضایی[۳]
۱- فارغ التحصیل دکتری عمومی دامپزشکی، دانشکده دامپزشکی، واحد ارومیه، دانشگاه آزاد اسلامی، ارومیه، ایران
۲- گروه بهداشت مواد غذایی، دانشکده دامپزشکی، واحد ارومیه، دانشگاه آزاد اسلامی، ارومیه، ایران
۳- گروه علوم درمانگاهی، دانشکده دامپزشکی، واحد ارومیه، دانشگاه آزاد اسلامی، ارومیه، ایران
* mnn.uiau@yahoo.com

دسترسی به آب سالم و عاری از هر گونه آلودگی های شیمیایی و میکروبی از الزامات صنعت پرورش طیور می باشد. کیفیت پایین آب باعث اختلال در عملکرد طیور و کاهش اثر واکسن و داروهای استفاده شده در سیستم آبرسانی می شود. کیفیت آب در نواحی مختلف جغرافیایی متفاوت است لذا لزوم ارزیابی کیفیت آن وجود دارد. در تحقیق حاضر تعدادی از فاکتورهای کیفیت شیمیایی (pH، سختی کل و مواد جامد محلول کل) و میکروبی (کلیفرم کل، کلیفرم مدفوعی و *اشریشیاکلی*) آب آشامیدنی مرغداری های گوشتی شهرستان اشنویه در طی بهار و تابستان سال ۹۳ ارزیابی شدند. فاکتور های شیمیاییpH، سختی کل (TH) و مواد جامد محلول کل (TDS) به ترتیب با استفاده از روش های pH متر الکتریکی،تیتراسیون با EDTA در حضور شناساگر اریوکروم سیاهTو تبخیر در حمام آب جوش تعیین شدند. فاکتورهای میکروبی با استفاده از روش MPN سه لوله ای تعیین شدند. مقادیر pH و TDSآب آشامیدنی مرغداری هایشهرستان اشنویه در داخل محدوده قابل پذیرش بودند ولی مقدار THبیشتر از حداکثر سطح قابل پذیرش بود. مقادیر کلیفرم کل در آب آشامیدنی ۲ مرغداری بالاتر از حداکثر سطح قابل قبول بود. همچنین در آب آشامیدنی ۴ مرغداری باکتری *اشریشیاکلی* شناسایی گردید. می توان نتیجه گیری نمود که مقادیر سختی کل و فاکتورهای کیفیت میکروبی آب آشامیدنی مرغداری های شهرستان اشنویه در وضعیت نامطلوب می باشد. بنابراین استفاده از دستگاه های سختی گیر و کلر زنی آب آشامیدنی پیشنهاد می گردد.

کلمات کلیدی: کیفیت میکروبی، کیفیت شیمیایی، آب آشامیدنی مرغداری های گوشتی، شهرستان اشنویه

مطالعه اثرات توام اسانس پوست درخت دارچین(*Cinnamomumzeylanicum*)و نیسین روی رشد وبقای *سالمونلا تیفی موریوم* در گوشت چرخ شده جوجه طی نگهداری در دمای یخچال

رامین کریمی[۱]، مسلم نیریز نقدهی[۲*]
۱-فارغ التحصیل کارشناسی ارشد زیست شناسی گرایش میکروبیولوژی، دانشکده علوم پایه، واحد ارومیه، دانشگاه آزاد اسلامی، ارومیه، ایران
۲- گروه بهداشت موادغذایی، دانشکده دامپزشکی، واحدارومیه، دانشگاه آزاداسلامی، ارومیه، ایران
* mnn.uiau@yahoo.com

روغن های اساسی گیاهان و باکتریوسین ها از عوامل ضد میکروب طبیعی هستند که برای بالا بردن ماندگاری و مهار عوامل بیماریزا در محصولات غذایی استفاده می شوند. *سالمونلا تیفی موریوم* از عوامل بیماریزای مهم و عامل سالمونلوز در انسان می باشد. گوشت و فرآورده های آن از منابع مهم انتقال *سالمونلا تیفی موریوم* به انسان محسوب می شوند. در تحقیق حاضر اثرات اسانس پوست درخت دارچین، نیسین و مخلوط اسانس دارچین و نیسین روی رشد و بقای*سالمونلا تیفی موریوم* در گوشت چرخ شده جوجه طی ۱۰ روز نگهداری در دمای یخچال مطالعه شد. استخراج اسانس پوست درخت دارچین، تجزیه ترکیبات شیمیایی اسانس دارچین، تعیین حداقل غلظت مهارکنندگی (MIC) و حداقل غلظت کشندگی (MBC) اسانس دارچین، نیسین و مخلوط اسانس دارچین و نایسین روی *سالمونلا تیفی موریوم* در شرایط آزمایشگاهی، آماده سازی گوشت چرخ شده حاوی*سالمونلا تیفی موریوم*، غلظت های مختلف اسانس دارچین، نیسین و مخلوط اسانس دارچین و نایسین (۱۰۰، ۲۰۰ و ۴۰۰ ppmیا i.u/g)، انجام شمارش *سالمونلا تیفی موریوم*، شمارش پلیت استاندارد (SPC) و اندازه گیری pH در روزهای مختلف نگهداری در یخچال (صفر، ۴، ۷ و ۱۰) از روش های بکار رفته در این تحقیق بودند. عمده ترین ترکیبات متشکله اسانس دارچین سینامیک آلدهید (۳۵/۲۳ درصد)، آلفا برژاموتن (۱۵/۰۶ درصد) و ترانس سینامیل استات (۱۲/۰۸ درصد) بودند. مقدارMIC اسانس دارچین ۱/۶ mg/ml، مقدارMIC نایسین ۱۰۰ i.u/ml و مقدارMIC مخلوط اسانس دارچین و نیسین ۰/۸ mg/ml + ۵۰ i.u/ml بودند. نتایج تعیین اندیس FIC (Fractional Inhibitory Concentration) نشان داد مخلوط اسانس دارچین و نیسین،*سالمونلا تیفی موریوم*را به صورت افزایشی مهار می نماید.مخلوط اسانس دارچین و نیسین موثرترین تیمار در کاهش شمارش شمارش *سالمونلا تایفی موریوم* و شمارش پلیت استاندارد گوشت چرخ شده بودند. مقدار pHدر میان تیمار های مورد مطالعه اختلاف معنی داری نشان نداد.همچنین مخلوط غلظت ۴۰۰ ppm اسانس دارچین و غلظت ۴۰۰ i.u/g نایسین موثرترین غلظتدر کاهش شمارش *سالمونلا تایفی موریوم* و شمارش پلیت استاندارد بودند. از نتایج می توان نتیجه گیری نمود که مخلوط اسانس دارچین و نیسین موثرترین تیمار در کاهش شمارش *سالمونلا تیفی موریوم* و شمارش پلیت استاندارد می باشد. بنابراین از این تیمار برای برای بالا بردن ماندگاری و مهار عوامل بیماریزا در گوشت چرخ شده پیشنهاد می گردد.

کلمات کلیدی: اسانس دارچین، نیسین، *سالمونلا تیفی موریوم*، گوشت چرخ شده جوجه

مطالعه اثرات توام اسانس مرزه (*Saturejahortensis*) و نیسین روی رشد و بقای *استافیلوکوکوس اورئوس* در گوشت چرخ شده جوجه طی نگهداری در دمای یخچال

مهران رضایی [۱]، مسلم نیریز نقدهی [۲*]،
۱- فارغ التحصیل دکتری عمومی دامپزشکی، دانشکده دامپزشکی، واحد ارومیه، دانشگاه آزاد اسلامی، ارومیه، ایران
۲- گروه بهداشت مواد غذایی، دانشکده دامپزشکی، واحد ارومیه، دانشگاه آزاد اسلامی، ارومیه، ایران
* mnn.uiau@yahoo.com

روغن های اساسی گیاهان و باکتریوسین ها از عوامل ضد میکروب طبیعی هستند که برای بالا بردن ماندگاری و مهار عوامل بیماریزا در محصولات غذایی استفاده می شوند. *استافیلوکوکوس اورئوس*از عوامل بیماریزای مهم و عامل عفونت های پوستی و مسمومیت غذایی در انسان می باشد. گوشتچرخ شده و فرآورده های گوشتی عمل آمده از منابع مهم انتقال *استافیلوکوکوس اورئوس* به انسان محسوب می شوند. در تحقیق حاضر اثرات اسانس مرزه، نیسین و مخلوط اسانس مرزه و نیسین روی رشد و بقای*استافیلوکوکوس اورئوس*در گوشت چرخ شده مرغ طی ۱۰ روز نگهداری در شرایط یخچال مطالعه شد. آماده سازی گوشت چرخ شده حاوی*استافیلوکوکوس اورئوس*، غلظت های مختلف اسانس مرزه، نیسین و مخلوط اسانس مرزه و نیسین (۱۰۰، ۲۰۰ و ۴۰۰ ppm)، انجام شمارش *استافیلوکوکوس اورئوس*، شمارش پلیت استاندارد (SPC) و اندازه گیری pH در روزهای مختلف نگهداری در یخچال (صفر، ۳، ۷ و ۱۰) از روش های بکار رفته در این تحقیق بودند. غلظت های مختلف هر کدام از تیمارهای مورد آزمایش، شمارش *استافیلوکوکوس اورئوس*، شمارش پلیت استاندارد (SPC) و مقدار pHرا به صورت معنی داری کاهش دادند ($p<۰/۰۱$). همچنین غلظت ۴۰۰ ppmتیمارهای مورد مطالعه، موثرترین غلظت در کاهش شمارش *استافیلوکوکوس اورئوس*، شمارش پلیت استاندارد و مقدار pHبودند. مقایسه شمارش *استافیلوکوکوس اورئوس*، شمارش پلیت استاندارد و مقدار pH بین تیمارهای مختلف نشان داد که فقط شمارش *استافیلوکوکوس اورئوس* بین تیمارهای مختلف اختلاف معنی داری دارند. همچنین تیمار مخلوط اسانس مرزه و نیسین موثرترین تیمار در کاهش شمارش *استافیلوکوکوس اورئوس* بود. از طرف دیگر، با افزایش روزهای نگهداری گوشت چرخ شده، شمارش *استافیلوکوکوس اورئوس*، شمارش پلیت استاندارد و مقدار pH به صورت معنی داری افزایش یافت($p<۰/۰۱$).از نتایج می توان نتیجه گیری نمود که مخلوط اسانس مرزه و نیسین موثرترین تیمار در کاهش شمارش*استافیلوکوکوس اورئوس* می باشد. بنابراینمی توان از تیمار اسانس مرزه و نیسین برای مهار رشد*استافیلوکوکوس اورئوس*در گوشت چرخ شده استفاده نمود.

کلمات کلیدی: اسانس مرزه، نیسین، *استافیلوکوکوس اورئوس*، گوشت چرخ شده جوجه

بررسی اثرات طول دوره روشنایی و تراکم انرژی جیره بر فاکتورهای بیوشیمیایی سرم جوجه‌های گوشتی

سامره قوامی [۱]،عاطفه عراقی [۲]،بهروز دستار [۳]، ولی اله ابراهیم

این پژوهش با هدف بررسی اثر طول دوره روشنایی و تراکم انرژی جیره بر فاکتورهای بیوشیمیایی سرم جوجه‌های گوشتی صورت گرفت. برای این منظور ۷۶۸ قطعه جوجه خروس گوشتی سویه راس ۳۰۸ به طور تصادفی در ۶ گروه تیمار تقسیم شدند. در این مطالعه جوجه‌ها تحت تاثیر ۳ برنامه نوری ۱۸ ساعت روشنایی، ۲۰ ساعت روشنایی، ۲۳ ساعت روشنایی و تحت تاثیر دو سطح انرژی (جیره با تراکم بالای انرژی و جیره با تراکم پایین انرژی) قرار گرفتند. در روز ۳۵ از هر تیمار به طور تصادفی ۷ نمونه خون اخذ شد و بوسیله دستگاه اتوانالیزو و کیت فاکتورهای بیوشیمیایی سرم اندازه گیری شد. در بین فاکتورهای سرمی اندازه گیری شده تنها میزان گلوگز سرم در بین گروه‌های مختلف مورد مطالعه تفاوت معنی داری را نشان داد و در گروهی که تحت تاثیر ۲۳ ساعت روشنایی و سطح انرژی بالا بوده بیشترین میزان و در مقابل در گروهی که تحت تاثیر ۱۸ ساعت روشنایی و سطح انرژی بالا بوده کمترین میزان گلوگز سرم را نشان داند ودر مقابل میزان فعالیت AST، اسید اوریک، تری گلیسرید، پروتئین تام، آلبومین و گلوبولین تفاوت معنی داری را بین گروه‌های مورد مطالعه نشان نداد. نتایج نشان می‌دهد که استفاده از برنامه نوری ۲۳ ساعت روشنایی و سطح انرژی بالا در مقایسه با سایر گروه‌های مورد مطالعه سبب افزایش میزان گلوگز سرم می‌شود که می‌تواند نشان دهنده تنش بیشتر این گروه در مقایسه با سایر گروه‌های مورد مطالعه باشد که البته نیاز است در این زمینه مطالعات بیشتری صورت گیرد.

تاثیرات نانوذرات نقره بر روی عملکرد رشد در جوجه های گوشتی

سید ارمان حسینی [۱]، لقمان اکرادی [۲]، علی نقی جدی [۳]*
سال اخر دکترای دامپزشکی ، گروه پاتوبیولوژی ، گروه علوم درمانگاهی ،
دانشکده دامپزشکی ، دانشگاه ازاد اسلامی سنندج ، سنندج ، ایران
ایمیل مشاور نویسنده : loghmanakradi@yahoo.com

مقدمه: نانو تکنولوژی یکی از کاربردی ترین علوم برای اغلب رشته ها و شاخه های علمی است، نقره به دلیل ویژگی های دارویی اش به خصوص خاصیت آنتی میکروبی اش شناخته شده است اما وقتی به حالت یونی در می آید خاصیت سمی پیدا می کند، وقتی نقره در قالب نانو به کار می رود خاصیت سمی اش از بین می رود. این تحقیق به منظور بررسی اثرات نانو کلوئید نقره بر روی عملکرد رشد انجام شده است.
مواد و روش کار:در این مطالعه ۲۴۰ قطعه جوجه یک روزه سویه راس ۳۰۸ در ۴ گروه تیمار و ۲ گروه کنترل با دزهای ppm ۰ (گروه کنترل با واکسن) و ppm۰ (گروه کنترل بدون واکسن) مورد استفاده قرار گرفت و در هر یک از چهار گروه تیمار نانو پارتیکل نقره با دز ۲ppm به آب اضافه شد.
۱- گروه تیمار از روز ۱ تا ۴۲ با نانو و واکسن
۲- گروه تیمار از روز ۱ تا ۴۲ با نانو و بدون واکسن
۳- گروه تیمار از روز ۲۱ تا ۴۲ با نانو و واکسن
۴- گروه تیمار از روز ۲۱ تا ۴۲ با نانو و بدون واکسن
هر گروه به چهار تکرار مشابه با طراحی کاملا تصادفی تقسیم و در هر قفس ۱۰ پرنده قرار داده شد. پس از ۴۲ روز اطلاعات مربوط به وزن بدن ثبت و ضریب تبدیل محاسبه گردید. این تحقیق در دانشگاه آزاد اسلامی واحد سنندج انجام شده است.
بحث و نتایج : بر طبق نتایج به دست آمده با وجود افزایش وزن و کاهش ضریب تبدیل در گروه های تیمار یک و دو، آنالیز داده های آماری رابطه معنی داری را نشان نداد. ($p> 0.05$).
کلمات کلیدی : نانوسیلور، جوجه گوشتی، واکسن، ضریب تبدیل، عملکرد

ترکیب تیمول و کارواکرول علیه تریکوموناس گالینه

محدثه ابوحسینی طبری [۱]، محمدرضا یوسفی [۲]
۱. دانشکده دامپزشکی، دانشگاه تخصصی فناوریهای نوین آمل، آمل، ایران.
۲. دپارتمان پاتوبیولوژی، دانشگاه آزاد اسلامی واحد بابل، بابل، ایران.

هدف: نیترومیدازول ها داروهای انتخابی برای درمان تریکومونیازیس پرندگان می باشند. دوزهای زیر حد درمانی و استفاده پیشگیرانه از این داروها منجر به ظهور سویه های تریکوموناس گالینه مقاوم به نیترومیدازول ها از سال ۱۹۹۰ شده است. گیاهان و ترکیبات فعال زیستی مشتق شده از آن ها به عنوان منابع جایگزین از عوامل آنتی تریکومونال میتوانند نقش آفرینی نمایند. در این مطالعه، اثر اجزای اصلی اسانس آویشن، تیمول و کارواکرول، علیه انگل تریکوموناس گالینه مورد ارزیابی قرار گرفته است.
مواد و روش ها: تریکوموناس گالینه به روش نمونه گیری مرطوب از زخم های ناحیه دهانی حلقی کبوتران بومی مبتلا بدست آورده شد. مطالعه در محیط آزمایشگاهی در پلیت های استریل چند خانه ای که حاوی ۱۰۰ میکرولیتر از محیط کشت تریپتوفان/عصاره مخمر/مالتوز دارای 10^4 انگل بوده و با مترونیدازول، تیمول و کارواکرول در رقت های نهایی ۲.۵، ۵، ۱۰، ۲۰ و ۵۰ میکروگرم بر میلیلیتر انکوبه شدند، انجام شد. توئین ۲۰(۰.۰۱٪ از غلظت نهایی) به عنوان حامل حل کننده مورد استفاده قرار گرفت. چاهک های کنترل تنها ۱۰۰ میکرولیتر از توئین ۲۰ را دریافت کردند. در مرحله بعدی ترکیب تیمول و کارواکرول جهت بررسی اثر سینرژیست احتمالی مورد آزمایش قرار گرفتند. چاهک ها بوسیله میکروسکوپ معکوس هر ۲۴ ساعت برای سه روز بررسی شدند. MICبه عنوان کمترین غلظت از دارو که هیچ انگل متحرکی در آن دیده نشد در نظر گرفته شد.
نتایج: MIC ۲۴ ساعته برای مترونیدازول $\mu g/ml$ ۲۰ بود در حالیکه این مقدار برای کارواکرول و تیمول به ترتیب۱۰ و $\mu g/ml$ ۲۰ بدست آمدند. MIC ۴۸ و ۷۲ساعته مترونیدازول$\mu g/ml$۵ بوده و کارواکرول$\mu g/ml$ ۲.۵ بود. MIC ۴۸ و ۷۲ساعته تیمول به ترتیب ۱۰ و $\mu g/ml$ ۵ بوده است. روش ترکیبی نشان داد که تیمول و کارواکرول در نسبت ۴:۱ نسبت به سایر نسبت ها بیشترین اثر هم افزایی را سبب شدند.
نتیجه گیری: نتایج مطالعه آزمایشگاهی حاضر فعالیت ضدتریکومونیایی بالایی را از کارواکرول و تیمول آشکار ساخت و نشان داد که ترکیب تیمول و کارواکرول میتوانند به عنوان عوامل درمانی ضد تریکومونیایی جایگزین در آینده عمل کنند.
واژگان کلیدی: کارواکرول، تیمول، مترونیدازول، تریکوموناس گالینه، آنتی تریکومونال

اثرات درمانی سولفاکلوزاین بر مورفولوژی روده و دفع اووسیست در کوکسیدیوز تجربی طیور

محدثه ابوحسینی طبری[۱]، محمدرضا یوسفی[۲]، سید محمد حسینی[۲]
۱. دانشکده دامپزشکی، دانشگاه تخصصی فناوریهای نوین آمل، آمل، ایران.
۲. دپارتمان پاتوبیولوژی، دانشگاه آزاد اسلامی واحد بابل، بابل، ایران.

هدف: سولفانامیدها از اولین داروهایی بودند که برای درمان سیستمیک و پیشگیری از عفونت های باکتریایی کاربرد داشتند. سولفاکلوزاین یک مشتق سولفانامیدی کارآمد با اثرات ضد باکتریایی و ضد کوکسیدیوزی است که بطور معمول برای درمان بیماری های مختلف طیور علی الخصوص کوکسیدیوز تجویز میشود. مطالعه حاضر به هدف بررسی اثر سولفاکلوزاین بر سلامت و مورفولوژی روده و همچنین دفع اووسیست در کوکسیدیوز تجربی انجام شده است.

مواد و روش ها: تعداد ۱۵۰ قطعه جوجه یک روزه گوشتی نژاد راس ۳۰۸ بطور تصادفی به ۳ گروه تقسیم شدند. گروه اول به عنوان کنترل منفی آلوده نشده و درمان نیز نشدند. گروه دوم به عنوان کنترل مثبت آلوده شده ولی درمان نشدند. گروه سوم آلوده شده و درمان نیز شدند. جوجه ها با خوراندن اووسیست اسپوروله چهار گونه بیماریزای ایمریا (3×10^4 *E. tenella*, 3×10^4*E. necatrix*, 4×10^4*E. maxima*, and 10^5*E. acervulina*) در انتهای هفته سوم به کوکسیدیوز تجربی مبتلا شدند. در گروه سوم درمان با سولفاکلوزاین در دوز 50 mg/ Kg BW از طریق آب آشامیدنی به مدت ۴ روز متوالی یک هفته پس از آلودگی انجام شد. یک روز پیش از آغاز درمان، در تمام دوره درمان و همچنین تا ۵ روز پس از آخرین تجویز نمونه مدفوع برای شمارش تعداد اووسیست با استفاده از لام مک مستر، گرفته شد. در انتهای مطالعه تعداد ۱۰ عدد پرنده از هر گروه کشته و مطالعه پاتولوژیک دستگاه گوارش انجام شد.

نتایج: داده های بدست آمده از این مطالعه نشان داد که درمان با سولفاکلوزاین منجر به کاهش معنی دار در تعداد اووسیست های دفع شده ($p<0.05$) و همچنین مرحله شیزوگونی انگل در روده گردید($p<0.05$). مطالعه پاتولوژیک قسمت های مختلف دستگاه گوارش در گروه تحت تیمار با سولفاکلوزاین نشان داد که این دارو منجر به بهبود جراحات ناشی از کوکسیدیوز در روده میشود. در دئودنوم، ژژنوم، ایلئوم، سکوم و همچنین قولون اثرات درمانی سولفاکلوزاین و بهبود مورفولوژی روده به روشنی مشاهده شد.

نتیجه گیری: نتایج مطالعه حاضر نشان داد که درمان با سولفاکلوزاین در کوکسیدیوز نه تنها از طریق کاهش دفع اووسیست بلکه با ارتقای سلامت روده در پرندگان آلوده به منفعت طیور و صنعت طیور خواهد بود.

واژگان کلیدی: سولفاکلوزاین، مورفولوژی روده، دفع اووسیست، کوکسیدیوز

بررسی الگو مقاومت آنتی بیوتیکی جدایه هایسالمونلا حاصله از گله های گوشتی شهرستان بابل

هادی روح الله زاده[۱]، هادی حق بین نظرپاک[۲]، سید مصطفی پیغمبری آمین میرزازاده[۴] ، محمدجعفر تایبی پور[۴] ، سبحان عمادی جمالی[۴]
۴-۱ رزیدنت بخش بهداشت وبیماری های طیور دانشکده دامپزشکی شیراز
۲-استادیار بخش بهداشت و بیماریهای طیور دانشکده دامپزشکی دانشگاه آزاد اسلامی واحد گرمسار
۳-دانشیار بخش بهداشت و بیماری های طیور دانشکده دامپزشکی دانشگاه تهران
نویسنده مسؤول:h.rohollahzadeh@gmailcom

بیماری های مشترک منتقله از راه غذا، یکی از مشکلات اصلی بهداشتی و اقتصادی در کشورهای صنعتی و غیر صنعتی بوده و سالمونلوز یکی از شایع ترین بیماری های زئونوز در جهان می باشد.همچنین استفاده وسیع از آنتی بیوتیک ها در صنعت طیور باعث پیدایش باکتریهای مقاوم شده است که می تواند از طریق فراورده های طیور قابل انتقال به انسان باشد.بدین منظورآگاهی از میزان شیوع سالمونلا در مزارع پرورش طیور وتعیین الگوی مقاومت داروئی از اهمیت بسیاری برخوردار است.در این بررسی مقاومت داروئی۴نمونه سالمونلا جدا شده از ۲۲مرغداری گوشتی با پانلی از ترکیبات ضدمیکروبی بر اساس روش های استانداردتعیینشد.تمام جدایه های حاصله نسبت به سفازولین، جنتامایسین، سیپروفلوکساسین، آموکسی سیلین و سفتریاکسون حساس و نسبت به اریترومایسین، ونکومایسین، کلینداماسین، پنیسیلین، نالیدیکسیک اسید و داکسی سایکلین مقاوم بودند.میزان مقاومت جدایه ها نسبت به سایر ترکیبات ضد میکروبی متغییر بوده که به شرح ذیل می باشد:

تتراسایکلین و اکسی تتراسایکلین هر کدام ۷۵%، تریمتوپریم سولفامتوکسازول، نیتروفورانتوئین، استرپتومایسین و فورازولیدون هر کدام ۵۰٪ ، آمپی سیلین، کلرامفنیکل، فلورفنیکل، لینکواسپکتین و انروفلوکساسین هر کدام ۲۵٪ .با توجه به مشکلات ناشی از سالمونلا دربهداشت کشور، مقایسه این نتایج با اطلاعات حاصل از جدایه های انسانی برای متخصصین بهداشتی جالب توجه خواهد بود.

واژگان کلیدی: سالمونلا، مقاومت دارویی، طیور گوشتی، بابل

بررسی سرولوژیکی آنفولانزای پرندگان (H_9N_2) در مرغداری های تجاری در شهرستان ورامین در سال ۱۳۹۴

حامد مفیدی[۱]، محمد صادق عطاریان خسروشاهی[۱]، علی کریمی[۲]، هادی هاشمی[۲]، مصطفی نادر عفیف[۱]
[۱] فارغ التحصیل دانشکده دامپزشکی، دانشگاه آزاد اسلامی کرج، ایران، [۲] بیمارستان دامپزشکی شفا، ورامین، ایران
نویسنده مسؤول: Dr.Hamed2007@Gmail.com

هدف:آنفولانزا، یک بیماری حاد تنفسی می باشد که عامل آن عفونت با ویروسآنفولانزا است. آنفولانزای پرندگانعضو خانواده ارتومیکسو ویریده است. آنفولانزای پرندگان یک عفونت ویروسی مسری است که می تواند به انواع مختلفی از پرندگان صنعت خوراک، پرندگان خانگی و پرندگان وحشی منتقل شود. آنفولانزای پرندگان بر اساس شدت بیماری در پرندگان می توانند به دو دسته طبقه بندی شوند: اشکال با بیماریزایی پایین و اشکال با بیماریزایی بالا. هدف از این مطالعه بررسی میانگین تیتر آنتی بادی ویروس آنفولانزا (H_9N_2)با استفاده از روشممانعت از هماگلوتیناسیوندر مرغداری های تجاری در شهرستان ورامین بود.

مواد و روشها: در این مطالعه، نمونه ها از ۳۰ مرغداری تجاری در ورامین جمع آوری شد. نمونه خون از ورید بال هر پرنده گرفته شد. نمونه ها به آزمایشگاه بیمارستان دامپزشکی شفا واقع در شهرستان ورامین منتقل شدند و با استفاده از روشممانعت از هماگلوتیناسیونمورد بررسی قرار گرفتند.

نتایج و نتیجه گیری: در این مطالعه، آزمایشممانعت از هماگلوتیناسیوننشان داد که کمترین و بیشترین میانگین تیتر آنتی بادی ۵/۹ با درصد پراکندگی ۲۰٪ و ۴/ ۱۱ با درصد پراکندگی ۶٪بود.

کلمات کلیدی:آنفولانزای پرندگان، مانیتورینگ، ممانعت از هماگلوتیناسیون،ارتومیکسو ویریده، (H_9N_2)، ورامین

اثر افزودن پروبیوتیک به جیره پس از تولک بری بر عملکرد مرغ های تخم گذار و کیفیت تخم مرغ

موسوی س ن[۱]، تاج آبادی ابراهیمی م[۲]،جعفری پ[۳]
*[۱]دانشکده کشاورزی، گروه علوم دامی، دانشکده کشاورزی، دانشگاه آزاد اسلامی، واحد ورامین- پیشوا ورامین، ایران
[۲]گروه سلولی و ملکولی، دانشکده علوم پایه، دانشگاه آزاد اسلامی، واحد تهران مرکزی، تهران، ایران
[۳]گروه میکروبیولوژی، دانشکده علوم پایه، دانشگاه آزاد اسلامی، واحد اراک، اراک، ایران
*ایمیل نویسنده مسؤول:snmousavi@hotmail.com

اهداف:تولک بری مرغ های تخم گذار به روش معمول گرسنگی سبب ایجاد تنش در آن ها می شود. در طی دوره گرسنگی میکروارگانیسم های روده پرنده معمولا تحت تاثیر قرار می گیرند. مشخص شده است که استفاده از پروبیوتیک ها سبب کاهش تنش و بهبود عملکرد در مرغ های تخمگذار می شوند. این تحقیق به منظور ارزیابی اثرات افزودن پروبیوتیک به جیره بر کیفیت تخم مرغ و عملکرد مرغ های تخمگذار سفید لگهورن تولک برده شده انجام شد.

مواد و روش ها:تعداد ۳۲۰ قطعه مرغ تخمگذار هایلاین W36در سن ۸۰ هفتگی با روش حذف خوراک تولک برده شدند. پس از کاهش وزن به میزان ۳۰ درصد، جیره های آزمایشی در اختیار مرغ ها قرار گرفت. جیره ها بر پایه ذرت و سویا و شامل مقادیر صفر، ۱۵۰، ۳۰۰ و ۴۵۰ گرم در تن پروبیوتیک بودند که به مدت ۱۰ هفته در اختیار گروه های آزمایشی (با ۸ تکرار) قرار گرفتند. پروبیوتیک تجاری مورد استفاده (دی پرو، شرکت تک ژن زیست، ایران) شامل مقدار ۱.۶×۱۰^{۹} واحد تشکیل دهنده کلونیباکتری های باسیلوس سوبتیلیس وباسیلوس لشینی فورمیس درهر گرم ازمحصول بود. از تولید تخم مرغ به صورت روزانه و خوراک مصرفی و وزن تخم مرغ بصورتهفتگی رکورد برداری صورت گرفت. در هفته پایانی آزمایش از هر واحد آزمایشی دو عدد تخم مرغ جهت اندازه گیری وزن زرده، سفیده و پوسته و کیفیت پوسته و واحد هاو جمع آوری شد. تفاوت بین میانگین تیمار از طریق آزمون دانکن مورد مقایسه قرار گرفت.

نتیجه گیری: مرغ هایی که جیره های حاوی پروبیوتیک دریافت کرده بودند در مقایسه با گروه شاهد تولید تخم مرغ و توده تخم مرغ بیشتری داشتند ($P<0.01$). بین گروه های تغذیه شده با پروبیوتیک و گروه شاهد از لحاظ خوراک مصرفی و وزن تخم مرغ تفاوت معنی داری مشاهده نشد. ضریب تبدیل خوراک در گروه هایی که جیره با سطح ۱۵۰ و ۳۰۰ گرم در تن پروبیوتیک را دریافت کرده بودند نسبت به گروه شاهد بهبود یافت ($P<0.06$). اگرچهصفات کیفی تخم مرغ تحت تاثیر معنی دار تیمارها قرار نگرفت با این وجود درصد تخم مرغ شکسته در گره های دریافت کننده پروبیوتیک تا ۲.۱۷ درصد کاهش یافت. نتایج این تحقیق نشان داد افزودن باسیلوس سوبتیلیس و باسیلوس لشینی فورمیس (دی پرو) به جیره مرغ های تخم گذار پس از تولک بری سبب بهبود تولید تخم مرغ، توده تخم مرغ و ضریب تبدیل خوراک و روند کاهشی در درصد شکسته تخم مرغ شد.

کلمات کلیدی: مرغ تخم گذار، پروبیوتیک، تولک بری، عملکرد، کیفیت تخم مرغ

امکان تشخیص بیماری طیور با استفاده از سیگنال‌های صدای قلب

صادقی م[۱]، بناکارا.[۱]، شوشتری ع.ح.[۲]
[۱] گروه مهندسی مکانیک بیوسیستم، دانشگاه تربیت مدرس، تهران، ایران
[۲] بخش بیماری‌های طیور، موسسه تحقیقات واکسن و سرم سازی رازی، کرج، ایران
ah_banakar@modares.ac.ir

هدف: در این پژوهش امکان تشخیص بیماری طیور بر اساس سیگنال‌های صدای قلب آن‌ها بررسی شده است.
مواد و روش‌ها : جوجه‌های ۱۴روزه به سه دسته تقسیم شدند. اولین گروه به عنوان نمونه‌های شاهد در نظر گرفته شدند. دومین و سومین گروه با استفاده از قطره چشمی به ترتیب به ویروس‌های نیوکاسل و برونشیت آلوده گردیدند. وجود ویروس‌های نیوکاسل و برونشیت با استفاده از روش RT-PCR همزمان با علائم کلینیکی تایید گردید. در این پژوهش روش RT-PCR با استفاده از دستورالعمل ۲ ارائه شده توسط کاپوآ و الکساندر صورت پذیرفت. صدای قلب جوجه‌ها با استفاده از یک گوشی پزشکی و کامپیوتر ضبط شد. سیگنال‌های صدا با استفاده از تبدیل موجک دابچی به حوزه زمان-فرکانس انتقال داده شدند و در مرحله داده‌کاوی، ۷۵ ویژگی از هر یک از ضرایب تقریب و جزییات تبدیل موجک مرحله دوم استخراج گردیدند. بهترین ویژگی‌ها با استفاده از روش ارزیابی فاصله توسعه‌ای انتخاب شدند و به عنوان ورودی طبقه‌بند ماشین بردار پشتیبان مورد استفاده قرار گرفتند.
نتایج و بحث: نتایج نشان داد که بیماری‌های طیور با استفاده از روش‌های هوش مصنوعی و تحلیل سیگنال‌های صدای قلب قابل تشخیص هستند. طبقه-بند توانست بیماری‌های نیوکاسل و برونشیت را به ترتیب با دقت‌های ۹۱/۱۰ و ۸۵ درصد تشخیص دهد. ایده مطرح شده به منظور تشخیص بیماری‌های مذکور، غیر مخرب، سریع و یک ابزار اتوماتیک در تشخیص بیماری‌های طیور می‌باشد. به منظور کاربردی تر شدن این ایده، دیگر بیماری‌های طیور نیز باید بررسی و ارزیابی شوند.
کلمات کلیدی: سیگنال‌های صدای قلب جوجه، بیماری نیوکاسل، بمیاری برونشیت عفونی، هوش مصنوعی، پردازش سیگنال، ماشین بردار پشتیبان

اولین گزارش آلودگی یک گله غاز خاکستری به عفونت سیرکوویروسی غاز (GoCV) در ایران

محمدرضا حدادمرندی، حسن نیلی، سید احمد مدنی، امیر قربانی
[1]Avian Disease research center, Department of clinical science, Faculty of veterinary medicine, P.O. 1731, Shiraz University, Shiraz Iran
[2]Department of Avian Diseases, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran
[3]Central Veterinary Laboratory, Towhid St., Tehran, Iran
mr_haddadmarandi@shirazu.ac.ir

مقدمه: عفونت های سیرکوویروسی در غاز سانان باعث تضعیف سیستم ایمنی و توقف رشد می شوند و به این ترتیبمی تواند آسیب اقتصادی بسیاری به صنعت پرورش غاز وارد کند. علائم کلینیکی به صورت غیر اختصاصی از ضعف و بی حالی تا علائم مربوط به عفونت های ثانویه متغیر می باشد. ضعف سیستم ایمنی ویروس، ناشی از تخلیه لمفوئیدی سیستم های لمفاوی بوده و می تواند منجر به مرگ پرنده شود. در بررسی آسیب شناسی، مشاهده ی گنجیدگی های داخل سلولی، به عنوان یافته همیشگی در مورد عفونت های سیرکوویروس غاز مطرح نمی باشد.
مواد و روش کار: در یک گله ۶۰ قطعه ای از غاز خاکستری با سن یک ماه و تلفات ۵۰٪ در طول دوره پرورش، تنها علامت کلینیکی مشاهده شده توقف رشد بود. تلفات این گله جهت کالبدگشایی و تشخیص به کلینیک ارجاع داده شد. کشت میکروبی همراه با نمونه گیری از اندام های داخلی جهت آزمون مولکولی و اسیب شناسی صورت پذیرفت. مولکولDNA استخراجی از بافت های داخلی جهت انجام آزمون PCRNestedبا پرایمر های هم تراز، استفاده شد. توالی به دست آمده با طول تقریبی ۳۵۰ جفت باز جهت تعیین توالی به شرکت Bioneer Co Korea فرستاده شده و از نرم افزارهایMegAlign و MEGA6 جهت تجزیه و تحلیل ژنتیکی توالی به دست آمده استفاده گردید.
نتایج و بحث: در کالبدگشایی تنها ضایعه ی مشخص ریکتز بود. نتایج کشت میکروبی و قارچی منفی بوده و در آسیب شناسی تنها ضایعه مشخص تخلیه ی شدید لمفوئیدی در بورس بود. حضور سیرکوویروس غاز (GoCV) در نمونه های بافتی با آزمون PCR و تعیین توالی محصول آن، تایید شد. بررسی فیلوژنی بر اساس ژن rep نشان داد که توالی به دست آمده در تحت گروه مجزا از سویه های پیشین و در شاخه دوم در کنار سویه های شناخته شده (xsl, yk2, yk4 و TD254-2014) از چین قرار می گیرد. بررسی درصد تشابه و واگرایی در بین سویه های مورد مطالعه نشان داد که سویه به دست آمده بیشترین شباهت را با سویهyk2 از چین دارد (۹۸٪).
عفونت سیرکوویروسی در گله های غازسانان در دنیا گستردگی فراوانی دارد. با این وجود، با توجه به اطلاعات نویسنده این اولین گزارش رخداد عفونت سیرکوویروسی در گله های غاز در ایران می باشد. مطالعات بیشتر به روی میزان شیوع این ویروس در بین گله های مختلف در ایران مورد نیاز است.
کلمات کلیدی: سیرکوویروس غاز، تضعیف سیستم ایمنی، توقف رشد، ژن rep، تعیین توالی، ایران

تعیین زیست فراهمی متیونین گیاهی هربومت در مقایسه با دی-ال-متیونین سنتتیک در تغذیه جوجه‌های گوشتی

محمدشیوازاد، امید نوری، حسین مروجی، لیلا لطفی، ساناز غلامرضا زاده، مینا خدادادی

در این تحقیق به منظور تعیین زیست فراهمی متیونین گیاهی هربومت در مقایسه با دی-ال-متیونین سنتتیک، تعداد ۲۰۰ قطعه جوجه‌گوشتی نر سویه راس۳۰۸ در قالب طرح بلوک کاملا تصادفی به ۱۰ تیمار و ۴ بلوک(قفس) تقسیم شدند. تیمارهای این آزمایش شامل یک جیره شاهد بر پایه ذرت و سویا که تمام نیازهای پرنده به‌جز متیونین+ سیستین را تامین می‌نود و دیگر تیمارها شامل سطوح افزایش تدریجی از هر دو منبعمتیونین گیاهی و سنتتیک می‌باشد. مصرف خوراک، افزایش وزن روزانه در طول دوره پرورش اندازه گیری شد و ضریب تبدیل و شاخص تولید محاسبه گردید.

نتایج مربوط به بررسی زیست فراهمی نسبی متیونین گیاهی نسبت به دی-ال-متیونین بر اساس فراسنجه شاخص تولید، نشان دهنده کارایی ۵۷ درصدی متیونین گیاهی هربومت در مقایسه با دی-ال-متیوین سنتتیک بود. کاهش زیست فراهمی متیونین گیاهی هربومت در مقایسه با دی-ال-متیونین سنتتیک به دلیل آن است که متیونین گیاهی هربومت قادر به انجام وظایف اصلی متیونین سنتتیک که سنتز پروتیین می‌باشد به‌طور کامل نیست و تنها قادر به انجام وظایف فرعی دی-ال-متیونین مانند تولید گروههای متیل و غیره می‌باشدو بنابراین نمیتواند کاملا جایگزین متیونین سنتتیک گردد ولی احتمالا متیونین گیاهی هربومت با انجام وظایف فرعی متیونین قادر خواهد بود جایگزین بخشی از متیونین سنتتیک جیره گردد

تعیین اثر سهم جایگزینی متیونین گیاهی هربومت به جای دی-ال-متیونین سنتتیک بر عملکرد جوجه‌های گوشتی

محمد شیوازاد، ساناز غلامرضازاده، حسین مروجی، لیلا لطفی،امید نوری، مینا خدادادی

این آزمایش به منظور تعیین سهم جایگزینی متیونین گیاهی به جای متیونین سنتتیک و اثرات هم‌کوشانی آن‌ها در جوجه‌های گوشتی، در دوره-های آغازین، رشد و پایانی انجام شد. تعداد ۲۰۰ قطعه جوجه گوشتی نر سویه راس ۳۰۸ در قالب طرح کاملا تصادفی به ۱۰ تیمار و ۴ بلوک (قفس) و ۵ قطعه پرنده برای هر بلوک تخصیص داده شد. تیمارهای این آزمایش شامل یک جیره شاهد بر پایه ذرت و سویا بدون هرگونه منبع افزودنی متیونین (کنترل منفی)، جیره حاوی ۱۰۰٪ متیونین سنتتیک و نسبت‌های جایگزینی تدریجی متیونین گیاهی به جای متیونین سنتتیک می‌باشد.مصرف خوراک، افزایش وزن روزانه و ضریب تبدیل وشاخص تولید در طول دوره پرورش محاسبه شد. نتایج به دست آمده نشان می‌دهد که از نظر عددی بهترین شاخص تولید مربوط به جایگزینی ۲۵٪ از متیونین سنتتیک با متیونین گیاهی می‌باشد و اگرچه با تیمار حاوی ۱۰۰٪ متیونین سنتتیک اختلاف معنی‌داری ندارد اما با توجه ارگانیک بودن متیونین گیاهی وقیمت ارزان آن نسبت به متیونین سنتتیک، جایگزینی ۲۵٪ از متیونین سنتتیک با متیونین گیاهی توصیه می‌گردد.

ارزیابی اثرات سمی مزمن نانوذرات نقره بر میزان وزن بدن و آسیب‌شناسی کبد در بلدرچین ژاپنی

مصطفی رزمجو۱ ، زهرامینوش سیاوش حقیقی۲ ، زهرا نیکوصفت۱ ، ایوب محمودی۳*
۱گروه علوم درمانگاهی ، ۲ گروه علوم پایه و ۳ دانش آموخته دانشکده دامپزشکی دانشگاه رازی کرمانشاه، ایران
*** ایمیل نویسنده مسؤول: razmjoo.mostafa@gmail.com**

موضوع: در این مطالعه اثرات سمی مزمن دوزهای مختلف ذرات کلوییدی و بدون پوشش نانوذرات نقره بر میزان وزن بدن و آسیب-شناسی کبد در بلدرچین ژاپنی مورد ارزیابی قرار گرفت.
مواد و روش‌کار: یکصد قطعه بلدرچین ژاپنی ۵۵ روزه با وزن متوسط ۲۲۰ گرم، به صورت اتفاقی به چهار گروه مساوی تقسیم شده و بطور روزانه و به مدت چهار ماه با لوله گاواژ، مقدار یک میلی‌لیتر از نانوذرات نقره با دوز ۱۰، ۵۰ و ۱۰۰ ppm به آنها خورانده شد. به گروه کنترل مقدار یک میلی‌لیتر آب مقطر دیونیزه داده شد. میزان وزن بدن بلدرچین‌های هر گروه بطور هفتگی اندازه‌گیری و ثبت گردید و در پایان ماه چهارم آزمایش، مورد مقایسه آماری قرار گرفت. همچنین پس از اتمام ماه چهارم آزمایش، پس از کشتار بلدرچین ها به روش انسانی، از بافت کبد آنها مقاطع بافتی تهیه و از نظر تغییرات هسیتوپاتولوژی مورد بررسی قرار گرفت.
نتایج و بحث: استعمال خوراکی نانوذرات نقره سبب کاهش معنی‌دار میزان وزن بدن بلدرچین های مورد آزمایش شده($p<0.05$)، اما این کاهش وزن وابسته به دوز نانوذرات نقره نبود. یافته های هیستوپاتولوژی کبد بلدرچین‌های گروه‌های آزمایشی، نشان‌دهنده تغییراتی شامل پرخونی سیاهرگی وریدمرکزی و سینوزوییدهای کبدی، هایپرپلازی مجاری صفراوی، دژنراسیون و نکروز هپاتوسیت‌ها، دژنراسیون بافت چربی و فیبروز کبدی بوده و این تغییرات وابسته به دوز نانوذرات نقره بود. بر اساس نتایج این مطالعه، نانوذرات نقره دارای تاثیر معنی‌داری بر کاهش میزان وزن بدن بوده و توانایی ایجاد اثرات سمی در کبد بلدرچین ژاپنی را دارا می-باشند.
کلمات کلیدی: نانوذرات نقره، اثرات سمی، آسیب‌شناسی کبد، بلدرچین ژاپنی

مطالعه درازمدت تاثیر استعمال خوراکی نانوذرات نقره بر پارامترهای بیوشیمیایی و خونی بلدرچین ژاپنی

مصطفی رزمجو۱ ، زهرا نیکوصفت۱ ، زهرامینوش سیاوش حقیقی۲ ، جمیل امامی‌زاد۳*
۱گروه علوم درمانگاهی ، ۲ گروه علوم پایه و ۳ دانش آموخته دانشکده دامپزشکی دانشگاه رازی کرمانشاه، ایران
*** ایمیل نویسنده مسؤول: razmjoo.mostafa@gmail.com**

موضوع: در این مطالعه اثرات سمی مزمن دوزهای مختلف نانوذرات نقره با اندازه ۵۰-۳۰ نانومتر و فاقد پوشش بر پارامترهای بیوشیمیایی و خونی بلدرچین ژاپنی مورد بررسی قرار گرفت.
مواد و روش‌کار: یکصد قطعه بلدرچین ژاپنی ۵۵ روزه با وزن متوسط ۲۲۰ گرم، به صورت اتفاقی به چهار گروه مساوی تقسیم شده و بطور روزانه و به مدت چهار ماه با لوله گاواژ، مقدار یک میلی‌لیتر از نانوذرات نقره با دوز ۱۰، ۵۰ و ۱۰۰ ppm به آنها خورانده شد. به گروه کنترل مقدار یک میلی‌لیتر آب مقطر دیونیزه داده شد. پس از پایان یکمین، دومین و چهارمین ماه آزمایش، از وریدد وداج ۵ قطعه بلدرچین از هر سه گروه تیمار و همچنین گروه کنترل خون‌گیری شده و از نظر پارامترهای بیوشیمیایی و خونی مورد بررسی قرار گرفت.
نتایج و بحث: استعمال خوراکی نانوذرات نقره سبب افزایش وابسته به دوز و زمان در میزان گلبول‌های قرمز و کاهش میزان گلبول-های سفید خون بلدرچین گروه‌های تیمار شد. همچنین سبب شد که به طور تدریجی، تعداد هتروفیل‌ها افزایش یافته و در مقابل تعداد لنفوسیت‌ها کاهش یابند. میزان PVC به صورت وابسته به دوز نانوذرات نقره، افزایش یافته و حداکثر افزایش در دومین ماه آزمایش روی داد. میزان هموگلوبین خون در هر سه گروه تیمار کاهش یافت. میزان گلوکز خون در گروه ۱۰۰ ppm ، کاهش وابسته به زمان را نشان داد. میزان آنزیم AST تغییر معنی‌داری را نشان نداده، اما میزان آنزیم ALT در گروه ppm۱۰ ، دچار افزایش وابسته به زمان شد. در میزان پروتئین تام و گلوبولین‌های خون تغییرات معنی‌داری مشاهده نشده ولی میزان آلبومین خون در ماه چهارم، افزایش یافت. بر اساس یافته های این مطالعه، نانوذرات نقره دارای اثرات سمی بر بلدرچین‌های ژاپنی در حداقل غلظت ppm۱۰ می‌باشد.
کلمات کلیدی: نانوذرات نقره، اثرات سمی، پارامترهای بیوشیمیایی، پارامترهای خونی، بلدرچین ژاپنی

مقایسه خواص فیزیکوشیمیایی و فعالیت ضد باکتریایی دو فورمولاسیون جدید حاوی تیل مایکوزین: نانوذرات جامد چربی و نانوکپسول با هسته لیپیدی

علوان الکشاوی[1]، علی رسولی[1*]، فاطمه اطیابی[2]، سید مصطفی پیغمبری[3]، مهدی اسفندیاری-منش[2]، غلامرضا شمس[1]، اعظم یزدانی[3]
[1]بخش فارماکولوژی، دانشکده دامپزشکی دانشگاه تهران، [2]گروه فارماسوتیکس، دانشکده داروسازی دانشگاه علوم پزشکی تهران، [3]گروه بیماری های طیور، دانشکده دامپزشکی دانشگاه تهران

زمینه و هدف:تیل مایکوزین یک آنتی بیوتیک مهم در دامپزشکی است. مشکلات ناشی از جذب ضعیف و عوارض جانبی آن، توسعه سیستم های دارو رسانی جدید ضروری می سازد. هدف از این مطالعه ساخت دو فورمولاسیون نانوذرات لیپیدی حاوی تیل مایکوزین(TLM-LNPs) شامل نانوذرات جامد چربی (SLNs) و نانوکپسول با هسته لیپیدی (LNCs) و مقایسه خواص فیزیکو شیمیایی و فعالیت ضد باکتری آنها در شرلیط آزمایشگاهی بر برخی از باکتری های پاتوژن جداشده از طیور است.روش ها:TLM-SLNs به روش هموژنیزاسیون داغ و TLM-LNCS با استفاده از روش رسوب سطحی فرموله شدند. اندازه ذرات یا میانگین قطر (MD)، شاخص پلی دیسپرسیتی (PDI)، پتانسیل زتا (ZP)، راندمان کپسوله شدن دارو (EE%) و ظرفیت بارگیری (LC%) اندازه گیری و مقایسه شد و همچنین بررسی مورفولوژی توسط میکروسکوپ الکترونی نگاره (SEM) انجام گردید. اثر محافظ های سرمایی مختلف (مانیتول، ساکارز، لاکتوز و سوربیتول) در طول لیوفیلیزه کردن آن ها و نگهداری در دمای ۴ درجه و ۲۵ درجه سانتی گراد به مدت ۸ هفته مورد مطالعه قرار گرفت. در شرایط آزمایشگاهی پروفایل رهایش تیل مایکوزین (در pH= ۷.۴ و pH= ۱.۲) و فعالیت های ضد باکتری سوسپانسیون های TLM-LNPs (علیه اشریشیا کلی و استافیلوکوکوس اورئوس) ارزیابی و با پودر لیوفیلیزه مقایسه گردید.
یافته‌ها:سوسپانسیون های TLM-LNPs در محدوده مقیاس نانو بودند. مقادیر MD برای TLM-LNCs وTLM-SLNs به ترتیب ۸۵.۰ و ۱۸۶.۳ نانومتر و مقادیر ZP ۱۷.۳- و ۱۸.۹- میلی ولت و مقادیر EE ۹۴.۳٪و ۶۹.۱٪ بودند، اما این مقادیر ها به طور قابل توجهی پس از لیوفیلیزاسیون تغییر یافت. مانیتول نشان داد که موثرترین ماده برای حفاظت از ویژگی های TLM-LNPs مختلف بود. به طور کلی پروفایل رهایش برای همه فرمولاسیون های مورد آزمایش دو فازی بود (رهایش انفجاری و متعاقب آن رهایش مستمر). دوره های رهایش در pH= ۷.۴ نسبت به pH= ۱.۲ و همچنین TLM-LNP پودر لیوفیلیزه نسبت به سوسپانسیون ها طولانی تر بودند. استافیلوکوکوس اورئوس حساسیت بیشتری نسبت به فرمولاسیون های تهیه شده نشان داد و فرآورده های فعالیت بهتر TLM-LNC به نمایش گذاشت. باکتری اشریشیا کلی حساسیت کمتری (۸-۱۶ برابر) نشان داد.
نتیجه گیری:تیل مایکوزین می تواند به طور موثر در LNPs بارگذاری شود. خواص بهتری با بارگذاری آن در LNCs به دست آمد. مانیتول به عنوان یک محافظ سرمایی، خواص LNPs را با کمترین تغییرات حفظ کرد. بنظر می رسدTLM-LNPs کارآمدی درمانی بهتری را در طیور مقایسه با تیل مایکوزین معمولی داشته باشد، با این حال مطالعات بیشتری در این زمینه مورد نیاز است.
واژه های کلیدی:تیل مایکوزین، نانوذرات لیپیدی، پایداری ، طیور، فعالیت ضد باکتریایی

رد یابی دو فاکتور حدت باکتری اشر یشیا کلی جدا شده از ماکیان تجاری در *شهرستان* تبریز به روش MultiplexPCR

حسنی. بهرام،، بنانی. منصور .، نوری. عباس،، گودرزی. حسین،، محمودزاده. محسن،، حسنی. مهران و محی الدین نیرومند

کلی باسیلوز به هر گونه عفونت موضعی یا عمومی گفته می شود که تماما یا بطور جزئی بر اثر باکتری اشر یشیا کولی ایجاد می گردد، تلفات این بیماری در ماکیان ،بوقلمون، و اردک از ۵ تا ۵۰ درصد متغیر می باشد. هدف از این تحقیق ردیابی دو ژن عامل حدت شامل *irp2* و *papc* بود که به روش Multiplex-PCR انجام شد. در این مطالعه ابتدا تعداد ۷۰ نمونه باکتری از قلب و کبد طیور گوشتی باعلائم مشکوک به کلی باسیلوز ارجاعی به درمانگاههای دامپزشکی شهرستان تبریز جدا سازی و شناسایی گردید. جداسازی باکتری ها به روش استاندارد باکتریولوژی صورت گرفت و بدین منظور ابتدا سواپ نمونه در محیط مک کانکی کشت داده شد و سپس به محیط EMB منتقل گردید. جهت شناسایی باکتری ها از بررسی خصوصیات بیوشیمیایی جدایه ها شامل آزمون های imvic استفاده شد. به منظور بررسی مولکولی وجود دو ژن عامل حدت در جدایه های فوق، ابتدا DNA نمونه ها به روش فنل کلروفرم استخراج شد و سپس به روش Multiplex-PCR، با استفاده از پرایمر های موجود در مقالات منتشر شده، نسبت به ردیابی ژنومی دو عامل حدت، شامل *irp2* و *papc* اقدام گردید. از مجموع ۷۰ نمونه تحت بررسی به ترتیب تعداد ۳۴، ۲۴ جدایه، ژن های irp2 و *papc* را نشان دادند. در ۲۵ نمونه مورد آزمایش هم هیچ یک از ژن های فوق مشاهده نگردید. ۲۱ مورد ژن *irp2* و ۱۱ مورد ژن *papc* به تنهای در باکتری دیده شدند و در ۱۳ جدایه هر دو ژن در یک باکتری همزمان مشاهده گردید. در مجموع ۴۵ باکتری از ۷۰ نمونه (۶۴/۳٪) حداقل دارای یکی از عوامل حدت فوق بودند. هر چند تا کنون بنظر می رسید که باکتری های بیماریزای *E.coli* طیور (APEC) تنها برای پرندگان بیماریزا هستند ولی مطالعات اخیر احتمال توانایی بیماریزایی آنها را در عفونت های خارج روده ای انسان نیز نشان می دهند. مطالعه حاضر تفاوت جدایه ها را از نظر حضور عوامل حدت نشان داد. بنظر می رسد باکتریهایی که تعداد بیشتری عامل حدت داشته باشند هم برای طیور و هم برای انسان بیماریزاتر خواهند بود، البته در این خصوص نیاز به مطالعه بیشتری وجود دارد.
کلمات کلیدی: فاکتور حدت، باکتری اشر یشیا کلی، ماکیان تجاری، *کلی باسیلوز*، MultiplexPCR ، تبریز.

گزارش ابتلا به عفونت کلبسیلا در قناری

منصور میاحی[۱]، داریوش غریبی[۲]، سعید ارازی[۳]
[۱] بخش علوم درمانگاهی، عضو هیئت علمی دانشکده دامپزشکی دانشگاه شهید چمران اهواز
[۲] بخش پاتوبیولوژی، عضو هیئت علمی دانشکده دامپزشکی دانشگاه شهید چمران اهواز
[۳] دانشجوی دکترای تخصصی بهداشت و بیماری‌های طیور، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز
ایمیل نویسنده مسؤول:saeed_arazi@yahoo.com

کلبسیلا پنومونیه یک باکتری غیر متحرک از خانواده *انتروباکتریاسه* است که بیشتر اعضای این جنس دارای کپسول می‌باشند. اطلاعات دقیق در مورد انتقال، بیماریزایی و دوره کمون گونه‌های کلبسیلا در پرندگان در دسترس نمی‌باشد. گزارش حاضر در مورد مشاهده یک مورد عفونت کلبسیلایی در قناری می‌باشد.

یک پرورش دهنده قناری با تلفات ۵ عدد به کلینیک دامپزشکی دانشگاه شهید چمران اهواز مراجعه نمود. تعداد کل قناری‌های موجود در این سالن پرورش ۲۰۰ عدد بوده و علائم بالینی مشاهده شده شامل سستی و بی حالی و بی اشتهایی و کاهش وزن بوده است. طبق تاریخچه اخذ شده علائم بالینی حدود ۵ روز قبل از مرگ شروع شده بودند. تنها علامت کالبد گشایی مشاهده خونریزی در روده‌ها بود و طبق گفته پرورش دهنده هیچ دارویی قبل از مراجعه به کلینیک استفاده نشده بود. بر اساس تاریخچه گله و بررسی وضعیت سالن پرورش، احتمال بروز مشکل به‌دلیل مسائل مدیریتی و علل تغذیه‌ای حذف گردید. نمونه از قلب و کبد پرندگان تلف شده اخذ گردید و به بخش آزمایشگاه میکروبیولوژی دانشگاه شهید چمران اهواز ارجاع داده شد و از نمونه‌های ارجاعی کشت و تست‌های بیوشیمیایی انجام گردید و *کلبسیلا پنومونیه* به عنوان عامل بیماری جدا گردید. برای بررسی حساسیت به آنتی بیوتیک ها، تست آنتی بیوگرام برای آنتی بیوتیک های نئومایسین، فسفومایسین، لینکواسپکتین، سولتریم و فلورفنیکل انجام گردید.

نتایج نشان داد که *کلبسیلا پنومونیه* جدا شه فقط نسبت به لینکواسپکتین حساس بوده است. بنابراین بر طبق نتایج جداسازی و آنتی‌بیوگرام انجام گرفته، لینکواسپکتین و مولتی‌ویتامین برای این گله تجویز گردید و به مدت ۵ روز مورد استفاده قرار گرفت. پس از استفاده از آنتی‌بیوتیک تمامی علائم از بین رفته و مورد دیگری از مرگ‌ومیر در گله مشاهده نگردید.

کلمات کلیدی: قناری، *کلبسیلا پنومونیه*، آنتی‌بیوگرام، لینکواسپکتین

یک گزارش از مرگ و میر در قناری ناشی از سودوموناس ائروژنز

منصور میاحی[۱]، داریوش غریبی[۲]، سعید ارازی[۳]
[۱] بخش علوم درمانگاهی، عضو هیئت علمی دانشکده دامپزشکی دانشگاه شهید چمران اهواز
[۲] بخش پاتوبیولوژی، عضو هیئت علمی دانشکده دامپزشکی دانشگاه شهید چمران اهواز
[۳] دانشجوی دکترای تخصصی بهداشت و بیماری‌های طیور، دانشکده دامپزشکی، دانشگاه شهید چمران اهواز
ایمیل نویسنده مسؤول:Saeed_arazi@yahoo.com

سویه‌های حاد *سودوموناس ائروژنز* می‌توانند ایجاد سپتی سمی نمایند. گزارش حاضر در مورد تلف شدن ۴ قناری بدلیل درگیری با *سودوموناس ائروژنز* در یک مرکز پرورش قناری می‌باشد.

یک پرورش دهنده قناری با ۴ عدد تلفات به کلینیک دامپزشکی دانشکده دامپزشکی دانشگاه شهید چمران اهواز مراجعه نمود. تعداد قناری‌های این سالن پرورش ۱۵۰ عدد بود و علائم بالینی‌ای شامل التهاب ملتحمه چشم و اسهال و مرگ و میر بودند. طبق گفته پرورش دهنده اخیراً هیچ دارویی در این سالن استفاده نشده بود. طبق تاریخچه اخذ شده و بررسی وضعیت گله احتمال بروز مشکل به‌دلیل مسائل مدیریتی و تغذیه‌ای حذف گردید. نمونه از قلب و کبد پرندگان تلف شده اخذ گردید و به آزمایشگاه میکروبیولوژی دانشکده دامپزشکی دانشگاه شهید چمران اهواز ارسال گردید و از نمونه‌های ارجاعی کشت و تست‌های بیوشیمیایی انجام گردید و *سودوموناس ائروژنز* به عنوان عامل بیماری جدا گردید. جهت بررسی حساسیت به آنتی‌بیوتیک ها، تست آنتی‌بیوگرام برای آنتی‌بیوتیک‌های آمپی‌سیلین، آموکسی‌سیلین، انروفلوکساسین، فلورفنیکل، فسفومایسین، فلومکوئین، لینکومایسین، جنتامایسین، لینکواسپکتین، نئومایسین، اوکسی‌تتراسایکلین، سولفادیمیدین، تریمتوپریم+سولفادیازین، تریمتوپریم، سولفادی‌متوکسین، تایلوزین، پنی سیلین، کانامایسین، کلرامفنیکل و سیپروفلوکساسین انجام گردید.

نتایج نشان داد که *سودوموناس ائروژنز* جداسازی شده نسبت به جنتامایسین، فسفومایسین و نئومایسین حساس بود. پس از استفاده از آنتی‌بیوتیک تمامی علائم از بین رفته و مورد دیگری از مرگ‌ومیر در گله مشاهده نگردید.

کلمات کلیدی: قناری، *سودوموناس ائروژنز*، آنتی‌بیوگرام

ارزیابی ترمیم نقیصه استخوانی القا شده با نانوکلسیم فسفات ترکیب شده با سدیم آلژینات در عقاب طلایی: مطالعه رادیوگرافی

رسول رحیم زاده[۱]* ، شبیر جهانگیری[۲]

۱- استادیار گروه علوم درمانگاهی دانشکده دامپزشکی، واحد سنندج، دانشگاه آزاد اسلامی، سنندج، ایران

۲- دانشجوی دکترای دامپزشکی، واحد سنندج، دانشگاه آزاد اسلامی

* -drrahimzadeh@iausdj.ac.ir

هدف: پیوند استخوانی یک روش جراحی برای بازگرداندن عملکرد ساختار استخوانی است یک پیوند استخوانی ایده‌آل بایستی القا و هدایت استخوانی و خواص استخوان‌زایی داشته باشد. پیوندهای اسفنجی کورتیکال در مورد پرندگان بسیار مؤثر هستند. ترمیم، شکستگی در پرندگان یک چالش بزرگ است و باقی ماندن نقیصه یک مشکل بزرگ بالینی است. اگر مشکل شکستگی مدیریت نشود ترمیم استخوانی رخ نخواهد داد. بسیاری از مواد سنتزهای برای پیوند استخوانی توسعه یافته‌اند مانند نانوکلسیم فسفات به تنهایی و در ترکیب با سدیم آلژینات.

مواد و روش ها :برای ارزیابی اثر این پیوند در ترمیم استخوان شکسته در عقاب طلایی فسفات در ترکیب با سدیم آلژینات برای ترمیم نقیصه استخوانی در استخوان زند زیرین مورد بررسی قرار گرفتن و شکستگی با روش تثبیت خارجی (ESF) ثابت شد. روند ترمیم در روزهای صفر، ۱۵، ۳۰، ۴۵ و ۶۰ از طریق پرتونگاری مورد ارزیابی قرار گرفت.

نتایج و بحث: بین روزهای ۱۵ و ۳۰ پاسخ تشکیل کالوس نشاندهنده عدم ضرب داربست بود. در روز ۳۰ ماده پیوندی از چهار طرف مورد جذب قرار می‌گیرد و رادیوگراف‌ها نشاندهنده جایگزینی آن با استخوان جدید است. در روز ۴۵ کورتکس استخوانی در محور طولی پل می‌زند و ترمیم سازماندهی می‌شود و پل کامل در روز ۶۰ با دانسیته مشابه استخوان این ماده برای ترمیم نقیصه‌های استخوانی با هر دو خاصیت القا و هدایت استخوان‌سازی پیشنهاد می‌شود. و استفاده از نانوکلسیم فسفات در ترکیب با سدیم آلژینات همراه تثبیت خارجی روشی مناسب و ایمن برای ترمیم استخوانی در عقاب طلایی است.

کلمات کلیدی: رادیوگرافی، نانو کلسیم فسفات، سدیم آلژینات، عقاب طلایی، نقیصه استخوانی

گزارش جداسازی *انتروکوکوسگالیناروم*از مرغ شاخدار مبتلا به پن افتالمیت

دکتر منصور میاحی[۱]،دکتر داریوش غریبی[۲] .دکتر امین نجاتی[۳].دکتر وحید کشاورز[۴].

[۱]استاد بهداشت و بیماری‌های طیور دانشکده دامپزشکی دانشگاه شهید چمران اهواز

[۲]استادیار میکرب‌شناسی دانشکده دامپزشکی دانشگاه شهید چمران اهواز

[۳]دانشجوی دکترای تخصصی بهداشت و بیماری‌های طیوردانشکده دامپزشکی دانشگاه شهید چمران اهواز

[۴]دانشجوی دکترای تخصصی بهداشت و بیماری‌های طیوردانشکده دامپزشکی دانشگاه شهید چمران اهواز

جهت بررسی سوآب چشمی به شکل استریل از چشم مرغ شاخدار مبتلا تهیه گردید و به آزمایشگاه باکتری شناسی دانشکده دامپزشکی دانشگاه شهیدچمران ارسال گردید.در آزمایشگاه سواب در محیط بلاد آگار تهیه شده با خون گوسفند کشت داده شد. نتایج بررسی مورفولوژی پرگنه ها در بلاد آگار وجود پرگنه های گرد، محدب، صاف و غیر همولیتیک را نشان داد.در بررسی شکل باکتری در گسترش تهیه شده از کشت خالص باکتری های کوکسی متمایل به بیضی به اشکال دوتایی و یا زنجیره های کوتاه مشاهده گردید. عدم تولید پیگمان، فقدان حرکت و نتایج تخمیر قندهای مختلف ناشی از حضور احتمالی انتروکوکوس گالیناروم در نمونه بالینی بود. در ادامه DNA باکتری خالص شده استخراجو سکانسRNA ریبوزومی آنبا استفاده از آغازگرهای RNAریبوزومی عمومی تکثیر و محصول PCRخالص شده تعیین توالی نوکلئوتیدی گردید. نتیجه تعیین توالی و مقایسه آن(nucleotide blast) با توالی های نوکلئوتیدی در پایگاه اطلاعاتی NCBI حضور انتروکوکوس گالیناروم را تایید نمود. بر اساس نتیجه آزمایش حساسیت دارویی، پرنده باپنی سیلین جی پروکائین با دوز ۱۲۰۰۰ واحد بین الملل برای هر کیلوگرم وزن پرنده(معادل ۲ تا ۳ سی سی برای هر ۵۰ کیلوگرم وزن زنده) هر ۲۴ ساعت به مدت ۲ روز تحت درمان قرار گرفت. در ادامه‌ی روند پیگیری،بعد از ۱ هفته،کاهش التهاب دوطرفه پلک چشم و دسترسی راحت تر پرنده به دان و آب وبهبودی ظاهریوضعیت جسمانی پرنده مشاهده گردید. در نهایت بعد از یک ماه پرنده به وضعیت طبیعی بازگشت.

برای تشخیص باکتری انتروکوکوس‌ها میتوان از نمونه‌های خون و گسترش فشاری از دریچه های قلبی و ضایعات ایجاد شده در پرندگان بهره گرفت و برای کنترل این باکتری مقیم روده میتوان از کاهش استرس به پرنده‌ها و ضدعفونی صحیح جایگاه‌های نگهداری بهره‌ی لازم را برد.

برای پیش‌گیری و کنترل جمعیت فلور های مقیم روده، استفاده از باسیتراسین و باکتری های محرک رشد مفید واقع شده، در حالی که درجاتی از مقاومت این باکتری به لینکومایسین در بعضی از مقالات به چشم می خورد.

آنتی بیوتیک های کاربردی برای درمان این باکتری پنی سیلین ها، خانواده‌ی تتراسایکلین‌ها، اریترومایسین و نوبیوسین می‌باشد. درمان زود هنگام این بیماری در بسیاری از مواقع موثر واقع شده، در حالی که با پیشرفت بیماری شانس احتمال بهبودی کمتر می‌شود. برای اطمینان از بهبودی، آزمایش حساسیت دارویی قبل از درمان ضروری و مفید واقع می‌باشند. تاکنون هیچ درمانی برای حالت اندوکاردیت این باکتری گزارش نشده است.

بررسی گرایش بافتی تحت تیپ H9N2 ویروس آنفلوانزا پرندگان در جوجه های SPF به روش جداسازی ویروس

رضا ممیز[۱]، پیمان بیژن زاد*[۲]، محسن محمودزاده[۱]، حسین نیک پیران[۲]، محسن بنایی[۳]، شاهین نیک خواه[۴]، سامان فرامرزی[۳]
۱- موسسه تحقیقات واکسن وسرم سازی رازی،کرج،ایران
۲- گروه علوم درمانگاهی،واحدتبریز،دانشگاه آزاداسلامی،تبریز،ایران.
۳-دستیارتخصصی بیماریهای طیور،دانشکده علوم تخصصی دامپزشکی،گروه بیماری‌های طیور،دانشگاه آزاداسلامی،واحدعلوم وتحقیقات،تهران،ایران
۴-دانش آموخته دکترا دامپزشکی،واحدتبریز،دانشگاهآزاداسلامی،تبریز،ایران.
نویسنده مسؤول: drbijanzad@gmail.com

هدف:عفونت ناشی از تحت تیپ H9N2 ویروس آنفلوانزا یکی از عوامل عمده خسارات اقتصادی در صنعت طیور ایران می باشد. این مطالعه به منظور ارزیابی گرایش بافتی ویروس A/chicken/Iran/m.1/2010 (H9N2) انجام گرفت.
مواد و روش کار: انتشار بافتی ویروس A/chicken/Iran/m.1/2010 (H9N2) در ارگانهای مختلفجوجه‌هایSPF بررسی گردید. چهل و دو قطعه، جوجه یکروزه SPFبصورت تصادفی در دو گروه (۲۱ قطعه در هر گروه) بصورت جداگانه در داخل ایزولاتور با فشار مثبت توزیع شدند. در سن ۱۲ روزگیجوجه‌ها در گروه یک با 10^6 EID_{50} ویروس آنفلوانزا بصورت قطره چشمی عفونی شدند، گروه دو نیز به عنوان گروه شاهد در نظر گرفته شد. نمونه از اندام‌های مختلف در سن ۲، ۴، ۶، ۸، ۱۰، ۱۲ پس از تلقیح جمع آوری شدند. از روش جداسازی ویروس جهت ردیابی ویروس استفاده شد.
نتایج و بحث: در گروه یک ویروس آنفلوانزا در بافت نای، طحال، و کلوآک ردیابی شد. نتایج مطالعه نشان داد که ویروس در نای، ریه، و طحال جوجه‌های عفونی شده در روز ۲ پس از تلقیح و در نمونه‌هایکلوآک در روز ۶ پس از تلقیح جدا شد. ویروس در لوزه‌هایسکومی، کلیه، بورس فابریسیوس، و تیموس جدا نشد. همچنین هیچ تلفاتی در دو گروه مشاهده نشد. نتایج مطالعه نشان داد که تحت تیپ H9N2 ویروس آنفلوانزا در جوجه‌هایSPF انتشار محدودی دارد، و احتمالا سایر عوامل بیماریزا در مرغداری‌های تجاری موجب تلفات و خسارات فراوان می‌شود.
کلمات کلیدی:آنفلوانزای پرندگان (H9N2)، جداسازی ویروس، انتشار بافتی، جوجه‌هایSPF

مقایسه دو روش اندازه گیری در تعیین غلظت آلبومین در آسیت محوطه پری توئن در جوجه های گوشتی

مصطفی طاهریان، زهرا نیکوصفت، مراد رحیمی

مقدمه: امروزه، افزایش ضریب رشد در صنعت طیور سبب تشکیل آسیتهای محوطه پری توئن گشته است که از این طریق خسارات زیادی به کشور ما تحمیل گشته است. بنابراین، ارزیابی مقادیر بیوشیمیایی در حفره شکمی جهت پایش وضعیت سلامت که از طریق محاسبه شاخص آلبومین به گلوبولین بدست میاید حائز اهمیت است.
مواد و روش کار: ۷۰ قطعه جوجه گوشتی مبتلا به آسیت شکمی از گله های مختلف جهت نمونه گیری از محوطه بطنی قبل از انجام نکروپسی بافتی جمع آوری شدند .ارزیابی سیتولوژی و بیوشیمیایی به کمک دستگاه اتوآنالیزور هیتاچی ۷۱۷ صورت گرفت و همزمان الکتروفورز پروتئین (روش پانسو - اس) بر روی نمونه های آسپیره شده از محوطه پری توئن انجام پذیرفت.
نتایج : نتایج نشان داد که اتیولوژی عامل ایجادکننده آسیت از ترانسودای اصلاح شده تا اگزودای باکتریایی در کیس های پیچیده مانند CRD متغیر است. درهر درصورت دبریز سلولی، هموسیدروفاژ، تعداد زیادی سگمنته هتروفیل و ماکروفاژ و تعداد کمی سلول مزوتلیال مشاهده شد که درموارد اگزودای شدید با عفونت باکتریایی داخل سلولی همراه بودند. مقادیر پروتئین بدست آمده از دستگاه اتوآنالیزور با فراکشن های بدست آمده از روش الکتروفورز همخوانی نشان نمیدادند.
بحث و نتیجه گیری: نتایج بدست آمده از اتوآنالیزورهای بیوشیمیایی براساس روش BCG (برمو کروزول گرین) برای سنجش آلبومین میباشد. در پرندگان در زمان افزایش ایمنوگلوبولینها ، رنگ ایجاد شده با طول موجی که برای سنجش آلبومین پیشنهاد شده است تداخل عمل دارد و مقایر کاذب در برآورد مقادیر آلبومین نشان میدهد. به هرحال، تنها در صورتی که مقدار آلبومین کاهش یافته باشد یا مقادیر گلوبولینهای آلفا ۱ یا آلفا دو بیشتر از ۰/۸ باشد یا مقدار گلوبولین بتا بیش از ۰/۵۷ باشد، الکتروفورز پروتئین ها غیرعادی تلقی میشود. در نتیجه الکتروفورز پروتئین روشی قابل اعتماد جهت ارزیابی مقادیر آلبومین در مقایسه با روش رنگ سنجی تلقی میشود.
کلمات کلیدی: آلبومین، آسیت، BCG، الکتروفورز پروتئین، جوجه گوشتی

بررسی الگوی مقاومت آنتی‌بیوتیکی سویه‌های جدا شده ی اشریشیاکلی از واحدهای مرغداری ارومیه

یوسف نصیری[۱]، علیرضا طالبی[۲]جعفر طایفه باقرلو[۲*]

۱. دانش آموخته دکترای حرفه‌ای دامپزشکی، دانشگاه آزاد اسلامی واحد ارومیه، ارومیه، ایران

۲. بخش بیماری‌های طیور، گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه ارومیه، ارومیه، ایران

ایمیل نویسنده مسؤول: J.tayefeh@urmia.ac.ir

مقدمه: هدف از این مطالعه بررسی مقاومت آنتی‌بیوتیکی سویه‌های جدا شده‌ی اشریشیاکلی ازواحدهای مرغداری ارومیه بود. بیماری کلی‌باسیلوز که عامل آن اشریشیاکلی بیماریزای طیور (APEC) می‌باشد، یکی از مهمترین بیماری‌های باکتریایی طیور می‌باشد که موجب خسارات اقتصادی زیادی در صنعت طیور می‌شود. استفاده از آنتی‌بیوتیک شاید مهمترین عامل در ایجاد مقاومت آنتی‌بیوتیکی در انسان است. اشریشیاکلی بیماریزای پرندگان هم به صورت اولیه و هم به صورت عامل ثانویه می تواند موجب ایجاد عوارض شود.

مواد و روش کار:تعداد ۴۲۰ نمونه از مرغداری‌های ارومیه (مزارع گوشتی و مرغ مادر گوشتی) در طول سال ۹۳ و ۹۴ جمع‌آوری و به آزمایشگاه دامپزشکی منتقل شد.نمونه‌ی سواپ از نمونه‌های قلب، کبد، ریه، و کیسه ی زرده گرفته و محیط‌هایی مانند مک‌کانکی آگار و ائوزین متیلن بلو (EMB) کشت و به مدت ۲۴ ساعت در ۳۷ ^{o}C انکوبه شد. آزمایش حساسیت آنتی‌بیوتیکی نیز در محیط مولر هینتون آگار و با استفاده از دیسکهای آنتی‌بیوتیکی و با استفاده از روش انتشار دیسک (Kirby-Bauer) انجام شد.

نتایج: براساس نتایج حاصل از این مطالعه مقاومت نسبت به چند آنتی‌بیوتیک گزارش شد. بیشترین مقاومت آنتی‌بیوتیکی به ترتیب برای فلومکوئین (۳۴٪)، داکسی‌سایکلین (۲۲٪) و جنتامایسین (۲۱٪) بیان شد. میزان مقاومت آنتی بیوتیکی گروه فلوروکینولون ها برای جدایه های اشریشیا کلی طیور ارومیه بالا بود.با توجه به بالا بودن هزینه ی درمان آنتی بیوتیکی و افزایش مقاومت آنتی‌بیوتیکی توصیه می‌شود تا از تست حساسیت آنتی‌بیوتیکی برای انتخاب بهترین آنتی‌بیوتیک استفاده شود. این مطالعه نشان می‌دهد میزان مقاومت آنتی بیوتیکی در بین جدایه های اشریشیا کلی جدا شده از طیور بالاست.

کلمات کلیدی:اشریشیاکلی، طیور، مقاومت آنتی‌بیوتیکی، ارومیه

تاثیر مکمل جیره ای پودر زردچوبه و نعناع بر فعالیت های آنزیمی و تغییرات پروتئینی سرم در جوجه های گوشتی

احمد سموعی[۱]، الهه جهانیان[۲]

۱- گروه علوم دامی، دانشگاه آزاد اسلامی، واحد خوراسگان، اصفهان، ایران

۳- گروه علوم دامی، دانشکده کشاورزی، دانشگاه صنعتی اصفهان، اصفهان، ایران، کد پستی ۸۳۱۱۱-۸۴۱۵۶

اهداف: مطالعه حاضر با هدف بررسی اثر مکمل جیره ای پودر زردچوبه و نعناع بر فعالیت های آنزیمی و تغییرات پروتئینی سرم در جوجه های گوشتی انجام شد.

مواد و روش ها: تعداد ۳۶۰ قطعه جوجه گوشتی سویه راس ۳۰۸ به طور تصادفی بین ۶ تیمار آزمایشی با ۴ تکرار حاوی ۱۵ قطعه پرنده به ازای هر تکرار توزیع شدند. تیمارهای غذایی شامل گروه شاهد (بدون افزودنی)، ۰/۵٪ نعناع، ۰/۵٪ زردچوبه، ۰/۲۵٪ زردچوبه و ۰/۲۵٪ نعناع، ۰/۵٪ نعناع و ۰/۵٪ زردچوبه و ۲۰۰ میلی گرم ویتامین E در کیلوگرم بودند. برای تعیین غلظت های پروتئین و فعالیت های آنزیمی سرم به ترتیب با استفاده از نوارهای الکتروفورز بر روی ژل استات سلولز و دستگاه اتوآنالیزر، تعداد ۲ قطعه پرنده از هر قفس به طور تصادفی انتخاب شده و در ۲۸ و ۴۲ روزگی خونگیری شدند.

نتایج و نتیجه گیری کلی: نتایج نشان دادند که افزودن ۰/۲۵٪ پودر زردچوبه و ۰/۲۵٪ پودر نعناع به طور معنی داری ($P<0/05$) غلظت پروتئین تام سرم و گلوبولین را هم در ۲۸ و هم در ۴۲ روزگی افزایش داد. با این وجود، تیمارهای غذایی هیچ اثر معنی داری بر غلظت آلبومین سرم در ۲۸ و ۴۲ روزگی نداشت. علاوه براین، فعالیت آنزیم آسپارتات آمینوترانسفراز به طور چشمگیری ($P<0/001$) به وسیله مکمل نمودن جیره ای ترکیب ۰/۵٪ پودر زردچوبه و ۰/۵٪ پودر نعناع در جوجه های گوشتی در ۲۸ و ۴۲ روزگی کاهش یافتند. همچنین، مکمل نمودن جیره ای ۰/۵٪ پودر زردچوبه منجر به کاهش معنی دار ($P<0/05$) فعالیت آنزیم آلانین آمینوترانسفراز در ۴۲ روزگی شد. تجویز ترکیب ۰/۲۵٪ پودر زردچوبه و ۰/۲۵٪ پودر نعناع تمایل ($P=0/083$) به کاهش فعالیت آنزیم آلکالین فسفاتاز سرم در ۲۸ روزگی داشت. با این وجود، فعالیت آنیم لاکتات دهیدروژناز سرمی به وسیله افزودن جیره ای پودر زردچوبه و نعناع چه به تنهایی و چه به صورت ترکیب تحت تاثیر قرر نگرفت. در مجموع، نتایج حاکی از آن است که افزودن جیره ای زردچوبه و نعناع به ویژه در سطح ۰/۲۵٪ می تواند غلظت پروتئین های سرم را افزایش و فعالیت آنزیم های سرمی شاخص سلامت کبدی را در جوجه های گوشتی بهبود بخشد.

واژه های کلیدی: زردچوبه، نعناع، فعالیت های آنزیم، تغییرات پروتئین، جوجه های گوشتی

تاثیر سطوح مختلف پودر زردچوبه و نعناع بر برخی فراسنجه های بیوشیمیایی خون در جوجه های گوشتی تغذیه شده با جیره غنی از روغن سویا

احمد سموعی[۱]، الهه جهانیان[۲]
۱- گروه علوم دامی، دانشگاه آزاد اسلامی، واحد خوراسگان، اصفهان، ایران
۲-گروه علوم دامی، دانشکده کشاورزی، دانشگاه صنعتی اصفهان، اصفهان، ایران، کد پستی ۸۴۱۵۶-۸۳۱۱۱

اهداف: مطالعه حاضر به منظور ارزیابی اثر سطوح مختلف پودر زردچوبه و نعناع بر برخی فراسنجه های بیوشیمیایی خون در جوجه های گوشتی تغذیه شده با جیره غنی از روغن سویا انجام شد.
مواد و روش ها: تعداد ۳۶۰ قطعه جوجه گوشتی راس ۳۰۸ به طور تصادفی بین ۶ تیمار غذایی با ۴ تکرار و حاوی ۱۵ پرنده به ازای هر تکرار توزیع شدند. تیمارهای غذایی شامل گروه شاهد (بدون افزودنی)، ۰/۵٪ نعناع، ۰/۲۵٪ نعناع و ۰/۲۵٪ زردچوبه، ۰/۵٪ نهناع و ۰/۵٪ زردچوبه و ۲۰۰ میلی گرم ویتامین E در کیلوگرم بودند. در ۲۸ و ۴۲ روزگی، دو قطعه پرنده به طور تصادفی خونگیری شدند و نمونه های سرم برای تعیین غلظت های کلسترول، تری گلیسرید، HDL، مالون دی آلدهید و ظرفیت آنتی اکسیدانی جمع آوری شدند.
نتایج و نتیجه گیری کلی: نتایج نشان دادند که افزودن ۰/۵٪ پودر زردچوبه و ۰/۵٪ پودر نعناع به طور بسیار معنی داری (P<۰/۰۵؛ P<۰/۰۱) غلظت کلسترول سرم را چه در ۲۸ و چه در ۴۲ روزگی کاهش داد. علاوه براین، محتوای تری گلیسرید به طور معنی داری (P<۰/۰۵) به وسیله مکمل ۰/۲۵٪ پودر نعناع و ۰/۲۵٪ پودر زردچوبه در جوجه های گوشتی فقط در ۴۲ روزگی کاهش یافت. با این وجود، مکمل نمودن جیره ای ترکیب پودر زردچوبه و نعناع در سطح ۰/۵٪ منجر به افزایش معنی دار (P<۰/۰۵) محتوای HDL سرم فقط در ۴۲ روزگی شد. اگرچه افزودن جیره ای پودر زردچوبه و نعناع در سطح ۰/۵٪ به طور چشمگیری (P<۰/۰۰۱) سطح مالون دی آلدهید سرم را در جوجه های گوشتی را کاهش داد؛ پائین ترین غلظت مالون دی آلدهید در پرندگان تغذیه شده با ۲۰۰ میلی گرم ویتامین E در کیلوگرم در ۲۸ و ۴۲ روزگی حاصل شد. علاوه براین، بالاترین ظرفیت آنتی اکسیدانی سرم (P<۰/۰۱؛ P<۰/۰۰۱) در جوجه های گوشتی تغذیه شده با ویتامین E به میزان ۲۰۰ میلی گرم در کیلوگرم در مقایسه با پرندگان شاهد هم در ۲۸ و هم در ۴۲ روزگی مشاهده شد. در مجموع، نتایج حاکی از آن است که افزودن ترکیب زردچوبه و نعناع در جیره توانست شاخص های آنتی اکسیدان سرم و فراسنجه های بیوشیمیایی سرم را در جوجه های گوشتی بهبود بخشد.
واژه های کلیدی: زردچوبه، نعناع، فراسنجه های بیوشیمیایی، جوجه های گوشتی

تاثیر چالش با اشرشیاکلی بر عملکرد و پاسخ های ایمنی در جوجه های گوشتی

الهه جهانیان[۱]، امیرحسین مهدوی[۱]، صدیقه عسگری[۲]، رحمان جهانیان[۱]
۱- گروه علوم دامی، دانشکده کشاورزی، دانشگاه صنعتی اصفهان، اصفهان، ایران، کد پستی ۸۴۱۵۶-۸۳۱۱۱
۲- مرکز تحقیقات قلب و عروق، دانشگاه علوم پزشکی، دانشگاه اصفهان، ایران

اهداف: مطالعه حاضر به منظور ارزیابی اثر چالش اشرشیاکلی O78:K80 بر عملکرد کل و پاسخ های ایمنی در جوجه های گوشتی انجام شد.
مواد و روش ها: تعداد ۹۶ قطعه جوجه گوشتی سویه راس ۳۰۸ در ۷ روزگی به طور تصادفی بین ۲ تیمار آزمایشی با ۴ تکرار حاوی ۱۲ پرنده به ازای هر تکرار توزیع شدند. تیمارهای آزمایشی شامل گروه شاهد و جوجه های گوشتی تحت چالش با اشرشیاکلی O78:K80 بودند که به طور خوراکی به میزان 1×10^{9} cfu/ml از ۷ تا ۲۸ روزگی داده شدند. به منظور تعیین پاسخ های ایمنی، جوجه ها با واکسن ویروس های برونشیت عفونی، نیوکاسل و گامبرو به ترتیب در روزهای ۱۳، ۱۸ و ۱۸ روزگی واکسینه شدند. سپس، ۷ روز بعد از هر واکسیناسیون، تعداد دو پرنده را به طور تصادفی از هر قفس خونگیری و نمونه های سرم جمع آوری شدند.
نتایج و نتیجه گیری کلی: نتایج نشان دادند که چالش با اشرشیاکلی O78:K80 هیچ اثر معنی داری بر مصرف خوراک در طی آزمایش نداشتند. با این وجود، میزان اضافه وزن به طور چشمگیری (P<۰/۰۰۰۱) در جوجه های گوشتی تحت چالش با اشرشیاکلی کاهش یافت. همچنین، آلودگی اشرشیاکلی منجر به ضریب تبدیل خوراک بدتر در طی دوره آزمایشی شد. علاوه براین، تیتر آنتی بادی علیه ویروس بیماری نیوکاسل در پرندگان آلوده شده با اشرشیاکلی O78:K80 به طور معنی داری پائین تر بود. همچنین، چالش اشرشیاکلی O78:K80 منجر به کاهش قابل توجه (P<۰/۰۰۱) در تیتر آنتی بادی علیه ویروس برونشیت عفونی شد. علاوه براین، مواجهه با اشرشیاکلی به طور معنی داری (P<۰/۰۱) تیتر آنتی بادی علیه ویروس بیماری گامبرو را کاهش داد. در مجموع، نتایج نشان دادند که آلودگی با اشرشیاکلی O78:K80، عملکرد رشد را کاهش داد و پاسخ های ایمنی را در جوجه های گوشتی کاهش داد.
واژه های کلیدی: اشرشیاکلی، عملکرد، پاسخ های ایمنی، جوجه های گوشتی

تاثیر مکمل سیلی مارین در جیره بر عملکرد و میکروفلور ایلئومی در جوجه های گوشتی تحت چالش با اشرشیاکلی

الهه جهانیان[۱]، امیرحسین مهدوی[۱]، صدیقه عسگری[۲]، رحمان جهانیان[۱]
۱- گروه علوم دامی، دانشکده کشاورزی، دانشگاه صنعتی اصفهان، اصفهان، ایران، کد پستی ۸۳۱۱۱-۸۴۱۵۶
۲- مرکز تحقیقات قلب و عروق، دانشگاه علوم پزشکی، دانشگاه اصفهان، ایران

اهداف: مطالعه حاضر به منظور ارزیابی تاثیر مکمل سیلی مارین در جیره بر عملکرد و میکروفلور ایلئومی در جوجه های گوشتی تحت چالش با اشرشیاکلی O78:K80 انجام شد.

مواد و روش ها: تعداد ۳۸۴ قطعه جوجه گوشتی سویه راس ۳۰۸ در ۷ روزگی به طور تصادفی بین ۸ تیمار آزمایشی به صورت یک طرح فاکتوریل ۲×۴ با ۴ تکرار حاوی ۱۲ پرنده به ازای هر تکرار توزیع شدند. تیمارهای آزمایشی شامل ۲ وضعیت میکروبی (گروه شاهد و چالش با اشرشیاکلی) و ۲ نوع مکمل جیره ای (بدون افزودنی، ۴۰۰ و ۸۰۰ میلی گرم سیلی مارین در کیلوگرم و باسیتراسین) بودند. جوجه ها تحت چالش با اشرشیاکلی O78:K80 از ۷ تا ۲۸ روزگی بودند. در ۲۸ و ۴۲ روزگی، تعداد دو قطعه پرنده از هر قفس به طور تصادفی انتخاب شدند و برای تعیین شمار میکروبی ایلئومی کشتار شدند.

نتایج و نتیجه گیری کلی: نتایج نشان دادند که آلودگی با اشرشیاکلی باعث کاهش چشمگیر ($P<۰/۰۰۰۱$) در مصرف خوراک و میزان اضافه وزن بدن شد؛ درنتیجه، به طور قابل توجهی ($P<۰/۰۰۰۱$) ضریب تبدیل خوراک را در طی دوره آزمایشی در جوجه های گوشتی را بدتر نمود. اگرچه افزودن جیره ای سیلی مارین به ویژه ۸۰۰ میلی گرم در کیلوگرم منجر به افزایش ($P<۰/۰۰۰۱$) مصرف خوراک و میزان اضافه وزن و بهبود ($P<۰/۰۰۰۱$) ضریب تبدیل خوراک شد؛ بالاترین میزان اضافه وزن در جوجه های گوشتی تغذیه شده با باسیتراسین حاصل شد. افزودن جیره ای باسیتراسین در جوجه های گوشتی تحت چالش با اشرشیاکلی در رابطه با ضریب تبدیل خوراک موثرتر ($P<۰/۰۰۰۱$) بود. چالش با اشرشیاکلی O78:K80 به طور معنی داری ($P<۰/۰۰۰۱$) جمعیت باکتری های اشرشیاکلی، سالمونلا، کلبسیلا و باکتری های گرم منفی را در ایلئوم در ۲۸ و ۴۲ روزگی افزایش داد. مکمل جیره ای سیلی مارین به ویژه ۸۰۰ میلی گرم در کیلوگرم به طور قابل توجهی ($P<۰/۰۰۰۱$) همه جمعیت های میکروبی مورد مطالعه را در ۲۸ و ۴۲ روزگی کاهش داد. با این وجود، حداقل شمارش میکروبی ایلئومی درنتیجه تغذیه باسیتراسین مشاهده شدند. علاوه براین، بکارگیری باسیتراسین در رابطه با جمعیت میکروبی ایلئومی در پرندگان آلوده شده با اشرشیکلی در ۲۸ و ۴۲ روزگی موثرتر ($P<۰/۰۰۱$) بود. در مجموع، نتایج حاکی از آن است که افزودن جیره ای سیلی مارین توانست باعث بهبود عملکرد رشد و کاهش شمارش میکروبی ایلئومی در جوجه های گوشتی تحت چالش با اشرشیاکلی شد.

واژه های کلیدی: سیلی مارین، عملکرد، شمارش میکروبی، اشرشیاکلی، جوجه های گوشتی

بررسی آلودگی جوجه های گوشتی تولیدی واحدهای مرغداری استان قم به سرب

شهروز مسائلی[۱]، علی فضل آرا[۲] و مهدی رفیعی محمدی[۳]*
۱- متخصص بیماری های طیور، سازمان دامپزشکی کشور
۲- استاد گروه بهداشت مواد غذایی دانشکده دامپزشکی، دانشگاه شهید چمران اهواز
۳- دامپزشک، اداره کل دامپزشکی استان قم
ایمیل نویسنده مسؤول: shmasaeli@gmail.com

هدف: سرب یک فلز سنگین است که مصرف جهانی آن بویژه در کشورهای درحال توسعه منجر به آلودگی های زیست محیطی وسیع شده و نیز با وارد شدن به بدن و تجمع در اندام های مختلف، باعث بروز اثرات زیان آور می گردد. آلودگی طیور صنعتی به سرب، به دلیل شرایط پرورش بسته و کنترل شده، بطور معمول از راه آب و یا دان ممکن است صورت گیرد. هدف از انجام این مطالعه، سنجش غلظت سرب در آب و دان مصرفی جوجه های گوشتی جهت تعیین وجود احتمالی باقیمانده ی این فلز در گوشت ماکیان تولیدی استان قم بود.

مواد و روش کار: در مجموع ۱۵۰ نمونه شامل ۷۵ نمونه آب و ۷۵ نمونه دان یا خوراک کامل از تعداد ۷۵ مزرعه پرورش مرغ گوشتی در ۵ بخش از استان قم بطور تصادفی گرفته و پس از انتقال به آزمایشگاه، نسبت به اندازه گیری سرب با استفاده از دستگاه اسپکتروسکپی جذب اتمی اقدام گردید. سپس داده ها در قالب "خطای استاندارد ± میانگین "بیان و با استفاده از آزمون واریانس یک طرفه توسط نرم افزار SPSS 16 تجزیه و تحلیل شد.

نتایج و بحث: بر اساس نتایج حاصل از مطالعه حاضر، غلظت سرب در تمامی ۷۵ نمونه آب مصرفی در فارم های پرورش طیور گوشتی کمتر از حد تشخیص (LOD) و میانگین میزان سرب در خوراک طیور ppb ۲۸/۵۳±۱۵۲/۵۳ بود. با توجه به آن که بر اساس استانداردهای موجود، حداکثر میزان قابل قبول سرب در آب آشامیدنی معادل ppm ۰/۰۱ (ppb ۱۰) و در خوراک طیور معادل ppm ۵ (ppb ۵۰۰۰) می باشد، می‌توان اظهار نمود که کیفیت نمونه های آب و خوراک مصرفی در فارم های پرورش طیور استان قم از نظر وجود باقیمانده فلز سنگین سرب در حد مجاز و قابل قبول قرار دارند؛ اما در هر حال بدلیل خاصیت تجمعی تدریجی این ماده در بدن، می بایست مراقبت و پایش مستمر تمامی نهاده های غذایی، دان کامل و آب مصرفی مرغداریها از نظر میزان سرب و نیز حتی سایر فلزات سنگین انجام گیرد.

کلید واژه: سرب، مرغ گوشتی، استان قم، آب، خوراک طیور

مقایسه‌ی دو روش واکسیناسیون از طریق بررسی برانگیختگی پاسخ پادتن به واکسن بیماری برونشیت عفونی در جوجه های گوشتی

فروغ طلازاده[۱]، منصور میاحی[۱]، حسام الدین ذهبی[۲]، پویا پارسایی[۳]
[۱]گروه علوم درمانگاهی، عضو هیئت علمی دانشکده دامپزشکی، دانشگاه شهید چمران اهواز
[۲] دانشجوی دکترای تخصصی بهداشت و بیماری‌های طیور دانشکده دامپزشکی، دانشگاه شهید چمران اهواز
[۳]دکترای عمومی دامپزشکی
نویسنده ی مسؤول: hessamoddin.zahabi@gmail.com

اهداف: هدف از این مطالعه، بررسی پاسخ پادتن‌های سیستمیک در دو روش مختلف واکسیناسیون علیه بیماری برونشیت در جوجه های گوشتی می‌باشد.

مواد و روش کار: در این مطالعه ۸۴۰۰۰ جوجه ی یک روزه در دو گروه تقسیم شدند. جوجه های گروه ۱ توسط واکسن Ma5 (Nobilis) در یک روزگی و همچنین واکسن 4/91 (Nobilis) در ۱۱ روزگی به روش اسپری واکسینه شدند. . جوجه های گروه ۲ توسط واکسن Ma5 (Nobilis) در یک روزگی به روش اسپری و واکسن 4/91 (Nobilis) در ۱۱ روزگی به روش آشامیدنی واکسینه شدند. سرم ها در سن ۲۸ روزگی جمع‌آوری شدند و جهت بررسی سطوح آنتی بادی مورد ارزیابی قرار گرفتند.

نتایج و نتیجه گیری: نتایج تفاوت آماری معنی داری بین دو گروه واکسینه شده، نشان داد. بالاترین عیار پادتن علیه بیماری برونشیت مربوط به گروه دوم بود. به نظر می‌رسد واکسیناسیون به روش اسپری (آنچه در گروه اول اجرا شد) جهت پاکسازی ویروس از ارگان های تنفسی کاراتر بوده است، از این رو عیار حاصل از واکسن در سیستم گردش خون درگروه اول، عیار پایین تری را نشان می‌دهد. همچنین نقش ایمنی مخاطی در مطالعه ی حاضر مورد بحث می باشد. بسیاری از آزمون های اولیه و ثانویه پس از عفونت که خاطره علیه برونشیت را بررسی می‌کردند، عیار بالای IgY را نشان دادند. حضور ویروس تخفیف حدت یافته در ارگان‌های تنفسی می‌تواند جهت جلوگیری از کلونیزه شدن ویروس وحشی در بافت کمک کننده باشد. این یافته اهمیت روش واکسیناسیون همچنین بررسی های مخاطی و چالشی در بیماری برونشیت را نشان می‌دهد.

واژه‌های کلیدی: ویروس بیماری برونشیت، جوجه‌های گوشتی، پاسخ ایمنی سیستمیک، برنامه ی واکسیناسیون

بررسی نحوه تکثیر و انتشار بافتی ویروس آنفلوانزای H9N2 پرندگان در کبک پرورشی نژاد کانادایی Chukar Partridg با استفاده از روش Reverse Transcription-PCR

حسن نیلی[۱]، نادر قلعه‌گلاب[۲]، آزاده خادم[۳]، محمد عباس‌نیا[۳]
۱- مرکز تحقیقات بیماری‌های پرندگان، استاد دانشکده دامپزشکی دانشگاه شیراز، ایران.
۲- انستیتو تحقیقاتی واکسن و سرم سازی رازی، شعبه شیراز، ایران.
۳- مرکز تحقیقات بیماری‌های پرندگان، دانشکده دامپزشکی، ایران

آلودگی به ویروس آنفلوانزای H9N2 یکی از دلایل ضرر های اقتصادی هنگفت در صنعت طیور است. برای تعیین نحوه تکثیر و انتشار بافتی ویروس آنفلوانزای H9N2 ، تعداد ۱۲۵ کبک نژاد کانادایی با نام علمی *Alectoris Chukar* را به صورت تصادفی در۴ گروه آزمایش و ۱ گروه کنترل (هر گروه ۲۵ کبک) دسته بندی کردیم. پرندگان گروه آزمایش را با ویروس A/Chicken/Iran/722/2000(H9N2) با غلظت های گروه ۱EID50/ml $10^{8/5}$ و گروه ۲ EID50/ml $10^{7/5}$ وگروه ۳ EID50/ ml $10^{6/5}$ و گروه ۴ EID50/ml $10^{5/0}$ مورد تلقیح از طریق قطره داخل چشمی و داخل بینی قرار دادیم. در روز های ۱ و ۳ و ۶ و ۹ و ۱۲ بعد از تلقیح، از بافت های نای، ریه، طحال، کلیه، تیموس، پانکراس، روده کوچک و لوزه روده ای برای انجام ازمون های مولکولی، با رعایت شرایط، نمونه گیری انجام شد. از تست Reverse Transcription Polymerase Chain Reaction (RT-PCR) برای جدا سازی ویروس از بافت ها استفاده شد. درگروه ۱ و ۲ که بیشترین غلظت ویروس را دریافت کرده بودند، علایم بالینی از قبیل افسردگی، بی حالی، سرفه و عطسه در روز های ۳ و ۶ بعد از تلقیح مشاهده شد. در گروه ۱ و ۲، RNA ویروسی از نای و ریه در روز های ۱ و ۳ و ۶ و ۹ و ۱۲پس از تلقیح جدا شد. در پانکراس، ویروس فقط از گروه ۱ و ۲ ،در روز های ۱ و ۳ و ۶ جدا شد. ویروس در کلیه از روز ۶ به بعد و در تیموس در روز های ۱ و ۱۲ جدا شد. RNA ویروس در روز ۱۲ در لوزه روده ای مشاهده نشد. روده کوچک از نظر RNA ویروس، در روز های ۱ و ۳ و ۶ مثبت بود. در همه روز های نمونه گیری ویروس از طحال جدا شد. این مطالعه نشان می دهد که غالبا گرایش ویروس آنفلوانزای H9N2 در کبک به بافت های تنفسی، ادراری و طحال است و در سایر ارگان هایی که در این مطالعه بررسی شدند به غلظت ویروس تلقیح شده و تعداد روز های گذشته از تلقیح بستگی دارد.

کلمات کلیدی: RT-PCR، ویروس آنفلوانزای H9N2 پرندگان، تکثیر و انتشار بافتی، کبک.

بررسی فراوانی ژن مقاومت به سولفانامید *sul1* در جدایه های اشرشیاکلی از جوجه های گوشتی شهرستان ارومیه

سینا مجاوررستمی[۱]، وحید محمدی[۲]، ابوالفضل غنی ئی[۳]، پیمان سپهرنیا[۱]
[۱]دانش آموخته دانشکده دامپزشکی، دانشگاه ارومیه، ارومیه، ایران
[۲]استاد یار بخش کلینیکال پاتولوژی ، دانشکده دامپزشکی، دانشگاه ارومیه، ارومیه، ایران
[۳]استاد یار بخش طیور، دانشکده دامپزشکی،دانشگاه ارومیه، ارومیه، ایران
ایمیل نویسنده مسؤول: pdotsepehrnia@gmail.com

سابقه و هدف: کلی باسیلوز یک از مهم ترین بیماری های صنعت طیور از نظر اقتصادی است و همچنین از لحاظ بهداشت عمومی خطرناک محسوب می شود. درمان آنتی بیوتیکی مهم ترین روش درمانی و کنترلی در برخورد با این بیماری می باشد. بررسی وضعیت مقاومت آنتی بیوتیکی هم از لحاظ ژنوتیپی و هم از لحاظ فنوتیپی قبل از انتخاب یک داروی آنتی بیوتیکی در یک منطقه ضروری می باشد.
مواد و روش کار: در این مطالعه تعداد ۴۴ جدایه باکتری اشیرشیا کلی از ۳۰ گله طیور گوشتی جداسازی شد و حساسیت آن نسبت به پنج آنتی بیوتیک شامل انروفلوکساسین، سولفادیازین، فلورفنیکل، نئومایسین، اکسی تتراسایکلین ارزیابی شد. برای شناسایی ژن *Sul1* واکنش زنجیره پلی مراز بکار گرفته شد.
نتایج و بحث: نتایج تست آنتی بیوگرام نشان داد که ۲۰ جدایه به سولفادیازین به عنوان یک آنتی بیوتیک سولفانامیدی مقاوم بودند. درصد مقاومت برای سولفادیازین ۴۵/۵٪، انروفلوکساسین ۶/۸٪، اکسی تتراسایکلین ۷۹/۵٪، فلورفنیکل ۱۳/۷٪ و نئومایسین ۰ ٪ بوده است. در این مطالعه از ۴۴ جدایه باکتری اشیرشیا کلی ۲۵ جدایه دارای ژن *Sul1* بودند. نتایج نشان دادند که ۵ جدایه که دارای ژن مورد نظر بودند در تست آنتی بیوگرام این مقاومت را از خود نشان ندادند، این امر می تواند حاکی از وجود اختلاف در حساسیت این دو تست از همدیگر یا عدم ایجاد شرایط مناسب برای بیان ژن در این پنج جدایه باشد. نتایج نشان داد که مقاومت جدایه های اشیرشیا کلی به سولفانامیدها بالا می باشد و میزان مقاومت در دو تست آنتی بیوگراموواکنشزنجیرهپلیمرازمیتواندمتفاوتباشد.
کلمات کلیدی:مقاومت آنتی بیوتیکی، سولفانامیدها، اشیرشیاکلی

بررسی فراوانی ژن مقاومت به تتراسایکلین tet(A) در جدایه‌هایاشریشیا کلی از جوجه‌های گوشتی شهرستان ارومیه

پیمان سپهرنیا[۱]،ابوالفضل غنی ئی[۲]، وحید محمدی [۳]، سینا مجاور رستمی [۱]
[۱]دانش آموخته دانشکده دامپزشکی، دانشگاه ارومیه، ارومیه، ایران
[۲]استاد یار بخش طیور، دانشکده دامپزشکی،دانشگاه ارومیه، ارومیه، ایران
[۳]استاد یار بخش کلینیکال پاتولوژی ، دانشکده دامپزشکی،دانشگاه ارومیه، ارومیه، ایران
ایمیل نویسنده مسؤول: pdotsepehrnia@gmail.com

سابقه و هدف:کلی‌باسیلوز یکی از مهم ترین بیماری‌های صنعت طیور از نظر اقتصادی است و نیز از لحاظ بهداشت عمومی خطرناک محسوب می‌شود. درمان آنتی بیوتیکی مهم ترین روش درمانی و کنترلی در برخورد با این بیماری می‌باشد. بررسی وضعیت مقاومت آنتی بیوتیکی هم از لحاظ ژنوتیپی و هم از لحاظ فنوتیپی قبل از انتخاب یک داروی آنتی بیوتیکی در یک منطقه ضروری می‌باشد. این بررسی برای ارزیابی مقاومت فنوتیپی و ژنوتیپیجدایه‌هایاشریشیا کلی انجام گرفت.
مواد و روش کار:در بررسی حاضر تعداد ۴۴ جدایه باکتری اشیرشیا کلی از ۳۰ گله طیور گوشتی جداسازی شد و حساسیت آن نسبت به پنج آنتی‌بیوتیک شامل انروفلوکساسین،سولفادیازین،فلورفنیکل،نئومایسین،اکسی‌تتراسایکلین ارزیابی شد. برای شناسایی ژن tet(A) واکنش زنجیره پلی‌مراز بکارگرفته شد.
نتایج و بحث: نتایج تست آنتی بیوگرام نشان داد که ۳۵ جدایه به اکسی تتراسایکلین به عنوان یک آنتی بیوتیک تتراسایکلینی مقاوم بودند. درصد مقاومت برای سولفادیازین ۴۵/۵٪، انروفلوکساسین ۶/۸٪، اکسی تتراسایکلین ۷۹/۵٪، فلورفنیکل ۱۳/۷٪ و نئومایسین ۰ ٪ بوده است. در این مطالعه از ۴۴ جدایه باکتری اشیرشیا کلی ۲۱ جدایه دارای ژن tet(A) در تست PCR بودند. نتایج نشان دادند که ۱۴ جدایه از لحاظ تست آنتی بیوگرام (فنوتیپ) مقاومت از خود نشان دادند ولی ژن tet(A)(ژنوتیپ) در آنها شناسایی نشد ، این امر می تواند حاکی از تاثیر سایر ژن‌های دخیل در ایجاد مقاومت نسبت به تتراسایکلین‌ها باشد که باعث ایجاد این مقاومت در تست آنتی بیوگرام در این جدایه‌ها شده است. نتایج نشان داد که مقاومت جدایه‌های اشیرشیا کلی به تتراسایکلینبالا می باشد و ژن مقاومت tet(A) به طور عمده در بین جدایه‌هایاشریشیا کلی منتشر شده است. و می تواند یکی از مهم ترین مکانیسم‌های مقاومت به تتراسایکلین‌ها در منطقه باشد.
کلمات کلیدی: مقاومت باکتریایی، اشریشیا کلی، تتراسایکلین

تاثیر گیاهان دارویی (جعفری و آب انار) بر روی التیام آترواسکلروزیس تجربی در جوجه‌های گوشتی

محمد صادق مددی[۱]،فائزه روستایی شلمانی*[۲]، جواد اشرفی هلان[۳]، امیر نیک کار مکرم[۴]
۱.گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه تبریز، تبریز، ایران
۲.دکترای دامپزشکی، دانشکده دامپزشکی، دانشگاه تبریز، تبریز، ایران
۳.گروه پاتوبیولوژی، دانشکده دامپزشکی، دانشگاه تبریز، تبریز، ایران
۴.دانشجوی دکترای دامپزشکی، دانشکده دامپزشکی، دانشگاه تبریز، تبریز، ایران

هدف: بیماری‌های متابولیکی جزء بیماری‌های مهم در صنعت طیور هستند که زیان‌های اقتصادی زیادی را به این صنعت وارد می‌کنند. در این ارتباط اثرات گیاهان دارویی بر روی التیام آترواسکلروزیس تجربی مورد مطالعه قرار گرفت.
مواد و روش کار: مطالعه در یک طرح کاملا تصادفی صورت گرفت، که شامل ۹۰ قطعه جوجه گوشتی بوده و در دو مرحله انجام شد. در مرحله اول دو گروه مورد مطالعه قرار گرفت. جیرهگروه اول شامل دنبه بود که تا ۴۲ روزگی مورد استفاده قرار گرفت و گروه دوم به عنوان گروه کنترل در نظر گرفته شد و جیره بدون روغن مصرف نمود. در گروه اول با افزایش سن مقدار چربی از ۲٪ در مرحله اول تا ۶٪ در مرحله آخر افزایش یافت. در روز ۴۲ دوره پرورش، ۳ جوجه از هر گروه کشتار شده و تعدادی وارد مرحله دوم مطالعه شدند. در مرحله دوم، سه درمان مورد مطالعه قرار گرفت. هیچ کدام از گروه‌ها از روز ۴۲ چربی دریافت نکردند. در گروه اول از جعفری و در گروه دوم از آب انار به عنوان داروی گیاهی از روز ۳۷ تا روز ۵۰ استفاده شد و گروه سوم به عنوان گروه کنترل مثبت در نظر گرفته شده و جیره بدون داروی گیاهی دریافت کرد.
نتیجه‌گیری و بحث: نتایج حاصل از این مطالعه نشان داد، که دنبه باعث ایجاد آترواسکلروزیس شدید می‌شود، در حالیکه در گروه کنترل هیچ علایمی مبنی بر آترواسکلروزیس مشاهده نشد. استفاده از درمان‌های گیاهی در گروه‌های مختلف نیز نشان داد که جعفری ضایعات ناشی از آترواسکلروزیس را کاهش می‌دهد، اما آب انار تاثیر قابل توجهی بر روی آترواسکلروزیس ندارد.
کلمات کلیدی: جوجه گوشتی، آترواسکلروزیس، دنبه، جعفری، آب انار

جستجوی مولکولیمایکوپلاسماگالیسپتیکوم در جوجه های یک هفته ای گوشتی

فرشاد سلطانی[۱]، ابوالفضل غنی ئی[۲]، وحید محمدی[۳]، پیمان سپهرنیا[۱]
[۱]دانش آموخته دانشکده دامپزشکی، دانشگاه ارومیه، ارومیه، ایران
[۲]استاد یار بخش طیور، دانشکده دامپزشکی، دانشگاه ارومیه، ارومیه، ایران
[۳]استاد یار بخش کلینیکال پاتولوژی ، دانشکده دامپزشکی، دانشگاه ارومیه، ارومیه، ایران
ایمیل نویسنده مسؤول: pdotsepehrnia@gmail.com

سابقه و هدف: آلودگی به مایکوپلاسماگالیسپتیکوم(MG)منجر به تلفات گسترده در گله‌های طیور می‌شود. تظاهرات تنفسی بیماری به طور معمول در گله‌های طیور مشاهده می‌شود. اگرچه فرم های دیگری از آلودگی هم امکان پذیر است. روش‌های مختلفی برای جستجوی (MG) وجود دارد. روش‌هایسرولوژیکی، کشتی و روش‌هایمولکولی برای این منظور انجام می گیرد. در میان این روش‌ها، روش‌هایی که پایه مولکولی دارند ارجح تر از سایر روش ها هستند. آزمایشگاه‌های تشخیصی عمدتا از روش‌هایسرولوژیکی برای جستجو این عفونت بهره می برند.
مواد و روش کار: از بیست گله جوجه گوشتی یک هفته ای مرکز استان آذربایجان غربی برای انجام این بررسی استفاده شد. از هر گله پنج سوآپ از ناحیه نای و شکاف شؤآن اخذ شد. سوآپ‌ها در داخل ۱/۵میلی لیتر از PBS نگه داری شدند. بعد از استخراج DNA به روش جوشاندن، آزمایش PCR با استفاده از پرایمرهای16SrRNA انجام گرفت.
نتایج و بحث: تمامی نمونه‌های تست شده با PCR منفی بودند. به علت اهمیت بالای آلودگی با مایکوپلاسماگالیسپتیکوم در گله‌های گوشتی، بررسی زود هنگام و دقیق آلودگی ضروری می‌باشد. به این منظور از روش‌هایمولکولی با کارایی بالا همچون PCR در گله‌های جوجه گوشتی یک روزه می‌توان بهره جست.
کلمات کلیدی: مایکوپلاسماگالیسپتیکوم، PCR، جوجه گوشتی، 16SrRNA

شناسایی ژن‌های حدت (*tsh ,sitA ,traT ,iutA*)درجدایه های*اشریشیاکلی*های ادرار انسان و کلی باسیلوزماکیان

سالار داداش زاده[1]، ملاحت احمدی[2]، پیمان سپهرنیا[1]
[1]دانش آموخته دانشکده دامپزشکی، دانشگاه ارومیه، ارومیه، ایران
[2]دانشیار بخش میکروبیولوژی، دانشکده دامپزشکی،دانشگاه ارومیه، ارومیه، ایران
ایمیل نویسنده مسؤول: pdotsepehrnia@gmail.com

سابقه و هدف:*اشریشیاکولای* پاتوژن طیوربعنوان یک عامل مسبب زیان‌های اقتصادی صنعت طیور در سطح جهانی مطرح است. یکی از توضیحاتی که برای نقش مخزن بودن طیور برای سویه هایUPECیا ایفای نقش مهم آن در اعطای این ژن‌های مهم مرتبط با حدت مطرح است ، حضور ژن‌های مشابه مرتبط با حدت در جدایه های APEC و UPECمی‌باشد.
مواد و روش کار: در مطالعه حاضر، به ترتیب ۶۳ نمونه کلی باسیلوز طیور و ۹۳ نمونه عفونت ادراری انسانی برای شناسایی جدایه های APEC و UPEC اخذ شده و مورد آزمایش قرار گرفتند. تعداد ۲۵جدایهUPEC و ۲۶جدایه APEC بدست آمد. متعاقب استخراج DNA با روش جوشاندن، تکثیر این ژن‌های مرتبط با حدتبه روش PCR انجام شد. برای شناسایی دو ژن *traT* و *iutA* ازتست PCRچندگانه و برای دو ژن *sitA*و *tsh* از تست PCRتکی استفاده شد.
نتایج و بحث:فراوانی ژن‌های انتخاب شده در میان جدایه های APEC و UPEC به ترتیب شامل ۹۶/۲٪ و ۶۴٪ برای ژن *traT*، ۹۲/۳۰٪ و ۷۶٪ برای ژن *sitA*، ۸۰/۷۶٪ و ۶۴٪ برای ژن *iutA*، و ۶۱/۵۳٪ و ۱۶٪ برای ژن *tsh* هستند.
در مجموع تنها حضور ژن های *tsh* و *traT* میان جدایه های APEC و UPEC مرتبط بوده و از این دو ژن در پروفایل های ژنی شناسایی پاتوتیپ های فوق می توان استفاده کرد و نیز بعنوان کاندیدا های واکسیناسیون در پروژه های بعدی مورد بهره برداری قرار داد.
واژه های کلیدی:APEC، UPEC، کلی باسیلوز، ، PCR، ژن های حدت

عوامل باکتریایی کاهش جوجه درآوری در یک محل پرورش قناری در اهواز

رمضانعلی جعفری[1]، داریوش غریبی[2]، حسام الدین ذهبی[3]*
۱- گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه شهید چمران، اهواز
۲- گروه پاتوبیولوژی، دانشکده دامپزشکی، دانشگاه شهید چمران، اهواز
۳- رزیدنت بهداشت و بیماریهای طیور، دانشکده دامپزشکی، دانشگاه شهید چمران، اهواز
[*]نویسنده مسؤول: jafari.ramezanali@scu.ac.ir

اهداف: عوامل زیادی بر میزان باروری و جوجه درآوری تخم پرندگان تأثیر می‌گذارند که آلودگی های باکتریایی متداول‌ترین آن ها می باشند. این کار با هدف تعیین نقش احتمالی باکتری‌ها در کاهش جوجه درآوری در قناری انجام گرفت.
مواد و روش کار: صاحب یکی از اماکن پرورش قناری در اهواز با شکایت از افزایش ناباروری و تلفات جنینی و کاهش جوجه درآوری در پرندگان خود به درمانگاه دانشکده دامپزشکی دانشگاه شهید چمران اهواز مراجعه کرد. در بازدید از محل نگهداری، هیچ گونه مشکل تغذیه‌ای مشاهده نشد. برای تشخیص قطعی، نمونه‌های میکروبی از پوسته و محتویات ۱۲ تخم تفریخ نیافته تهیه گردیدند. نمونه ها نخست در محیط پیش مغذی آب پپتون بافره و سپس در سلنیت F کشت داده شدند. پس از آن، کشت مجدد به روی محیط‌های مک‌کانکی و زیلوز- لیزین - دکربوکسیلاز صورت گرفت. به منظور تعیین هویت باکتری، حداقل سه کلنی از هر محیط برداشت شده و به وسیله‌ی آزمایشات مختلف بیوشیمیایی بررسی گردیدند. حساسیت تمامی جدایه‌ها نسبت به آنتی‌بیوتیک‌های جنتامایسین (۱۰میکروگرم)، فسفومایسین (۲۰۰میکروگرم)، سیپروفلوکساسین (۵میکروگرم)، داکسی‌سایکلین (۳۰میکروگرم)، سفوتاکسیم(۳۰میکروگرم) و سفتریاکسون(۳۰ میکروگرم) (ساخت شرکت پادتن طب، تهران) به‌روش انتشار در دیسک در محیط مولر-هینتون تعیین شد.
نتایج و نتیجه‌گیری: از مجموع ۲۴ نمونه ای که از خارج و داخل تخم گرفته شد، *کلبسیلا نومونیا* در ۳۳٪، *سراشیا مارسسنس* و *انتروباکتر کلوآکه* هر کدام در ۱۶/۷٪ و *انتروباکتر آئروژنز* در ۸/۳٪ موارد جدا گردیدند. چهار جدایه قابل شناسایی نبودند و در دو نمونه هیچ گونه رشد باکتریایی مشاهده نشد. *سراشیا مارسسنس و گونه های انتروباکتر* به ترتیب فقط از محتویات و پوسته تخم جدا شدند. بیشترین حساسیت در برابر جنتامایسین (۱۰۰٪) و پس از آن در برابر فسفومایسین (۸۱٪)، سفتریاکسون (۷۷٪)، سفوتاکسیم (۶۸٪)، سیپروفلوکساسین (۶۳٪) و داکسی سایکلین (۱۸٪) مشاهده گردید. این یافته-ها نقش فلور روده‌ای را در تلفات جنینی وهمچنین اهمیت رعایت بهداشت در جایگاه‌های نگهداری پرندگان برای تکثیر موفق را نشان می‌دهد.
واژه های کلیدی: *کلبسیلا، سراشیا، انتروباکتر*، جوجه درآوری، قناری، تخم

بررسی آلودگی های کرمی دستگاه گوارش در مرغان تخمگذار

توسلی. م[۱]، عالی مهر. م[۲]، قاسمی. س[۱] و سمیعی. خ[۱]*
۱.- بخش پاتوبیولوژی، دانشکده دامپزشکی، دانشگاه ارومیه، ارومیه، ایران
۲- بخش بیماری های طیور، دانشکده دامپزشکی، دانشگاه ارومیه، ارومیه، ایران
ایمیل نویسنده مسؤول: mtavassoli2000@yahoo.com

اهداف: تخم مرغ برای بسیاری از مردم در سراسر جهان یک غذای محبوب است و مصرف کننده گان از خواص تغذیه ای آن آگاه هستند. شیوع اکثر بیماری های انگلی در طیور به نظر می رسد بطور قابل توجهی در سیستم های تولید طیور به شکل تجارتی و داخلی با توجه به بهبود جایگاه، بهداشت و مدیریت خوب کاهش یافته است. به هر حال، بیماری های انگلی ممکن است در برخی سیستم های تجارتی دیده شوند. هدف از این مطالعه تعیین شیوع و شدت آلودگی های کرمی دستگاه گوارش مرغان تخم گذار در فارم های مرغ شمال غرب ایران بود.
مواد و روش کار:در مجموع ۸۱ مرغ تخم گذار مربوط به ۱۲ فارم از استان های قزوین، زنجان، آذربایجان غربی و شرقی بین ماه های دی تا شهریور سال ۱۳۹۴ جمع آوری گردید. مرغ های مرده توسط صاحبان مربوطه شان معرفی و به آزمایشگاه انگل شناسی دانشکده دامپزشکی دانشگاه ارومیه آورده شدند. در آزمایشگاه تمامی محتویات مجاری دستگاه گوارش از مری تا مقعد برای حضور و شدت آلودگی های کرمی آزمایش شدند. در نهایت، کرم ها بوسیله ی چشم غیر مسلح با استفاده از پنس های مربوطه برداشته شدند و با کلید های تشخیصی معتبر تشخیص داده شدند.
بحث و نتایج: نتایج مشخص نمود که فقط نمونه متعلق به فارم مرغ تخم گذار از شهرستان خوی، آذربایجان غربی، به *کوانوتنیا انفاندیبولوم* آلوده بوده است. تعداد زیادی از این گونه ی سستود در طیور خانگی گزارش شده است. جایی که به دلیل مدیریت فشرده و مناسب شیوع کرم های نواری کاهش پیدا کرده است. به هرحال، تحت مدیریت های شدید، سستودها، مخصوصا *کوانوتنیا انفاندیبولوم*، جایی که مگس ها میزبانان واسط آن هستند، ممکن است در طیور پرورشی در جایگاه های رو باز بیشتر رخ دهند. در فارم های آلوده درمان بایستی همزمان با معیارهای کنترل به شکل مستقیم علیه میزبان های واسط در نظر گرفته شود.
واژه های کلیدی:مرغ تخم گذار، کوانوتنیا انفاندیبولوم، آلودگی کرمی، دستگاه گوارش، ایران

انگل های دستگاه گوارش اردک های خانگی در شهرستان آمل، شمال ایران

توسلی. م[۱]، رضایی. م[۱] و سمیعی. خ[۱]*
۱.- بخش پاتوبیولوژی، دانشکده دامپزشکی، دانشگاه ارومیه، ارومیه، ایران
ایمیل نویسنده ی مسؤول: mtavassoli2000@yahoo.com

اهداف: اردک ها حیوانات سرسخت و پاکننده گان خوبی هستند. آن ها به منظور نگه داری نسبت به مرغ ها آسان تر و ارزان تر هستند و نقش بزرگی در اقتصاد روستایی به لحاظ گوشت و تخم مرغ بازی می کنند. اردک ها نسبت به آلودگی های انگلی حساس هستند. آن ها برای برخی از انگل ها بعنوان میزبان های واسط و نهایی واقع می شوند. انگل ها بر روی سلامتی اردک ها اثرات جدی دارند و منجر به خسارات اقتصادی ناشی از کاهش وزن و کاهش تولید تخم مرغ می شوند. مطالعه ی حاضر به منظور پیدا کردن شیوع و شدت انگل های داخلی اردک های اهلی در شهرستان آمل، شمال ایران، طراحی شده است.
مواد و روش کار: در مجموع ۳۶ اردک از قسمت های مختلف شهرستان آمل (استان مازندران) بین ماه های اردیبهشت تا شهریور سال ۱۳۹۴ جمع آوری گردید و مجاری دستگاه گوارش هر اردک به شکل انفرادی در آزمایشگاه مورد آزمایش قرار گرفت. به منظور جمع آوری انگل های داخلی، ابتدا مجاری دستگاه گوارش هر اردک جدا گردید و هر قسمت آن داخل پتریدیش قرار گرفت، سپس با سالین شسته شد و بوسیله دست (استفاده از دستکش)، سطح داخلی هر ارگان همزمان خراشیده و پاک شد. در نهایت، کرم ها با چشم غیر مسلح با استفاده از پنس های مربوطه جدا شدند و در اتانول ۷۰٪ برای شناسایی قرار گرفتند.
بحث و نتایج:این مطالعه ۶ گونه ی انگلی را از روده های اردک های خانگی را مشخص نمود. شیوع و شدت آلودگی انگلی از گونه ای به گونه ای دیگر از انگل های ثبت شده متفاوت بود. نتایج نشان داد که ۱۲ نمونه از مجموع ۳۶ نمونه حداقل به یک انگل آلوده بودند. نتایج همچنین نشان داد که اردک های آلوده به *آسکاریدیا گالی*، *هتراکیس گالیناروم*، *دیورکیس استفانوفسکی*، گونه های *همینولیپیس*، گونه های *کاپیلاریا* و گونه های *ایمریا* آلوده بودند. به علت عفونت بالا و تنوع انگلهای جمع آوری شده، توجه بیشتری برای بهبود برنامه های پرورشی و درمانی اردک های خانگی مورد نیاز است.
واژه های کلیدی: اردک اهلی، دستگاه گوارش، انگل، انگل های داخلی، آمل

مطالعه هیستوشیمی اینفاندیبولوم اویداکت در کبک چوکار در دوره تخمگذاری

شادی هاشم نیا، سعید حسن زاده*
گروه علوم پایه، دانشکده دامپزشکی، دانشگاه شهید باهنر، کرمان، ایران
نویسنده مسؤول shadihashemnia@yahoo.com

مقدمه:باتوجه به اینکه تاکنون مطالعات اندکی در مورد ریخت شناسی و بافت شناسی در کبک چوکار انجام شده است، در مطالعه حاضر بافت شناسی اینفاندیبولوم در این پرنده مورد بررسی قرار گرفت.
مواد و روش کار: به منظور این بررسی، ۵ عدد کبک چوکار سالم و تخمگذار تهیه و به روش انسانی و با کمک کتامین کشته شدند. سپس محوطه سینه ای-شکمی باز، اویداکت به طور کامل خارج و از ناحیه اینفاندیبولوم نمونه هایی تهیه شد. پس از ثبوت نمونه ها در محلول بوئن، از نمونه ها به روش معمول آزمایشگاه هیستوتکنیک بلوک های پارافینی فراهم و برش هایی عرضی به ضخامت ۵ میکرون آماده گردید.سپس برش ها با رنگ های هماتوکسیلین- ائوزین، پریودیک اسید شیف و تری کروم ماسون رنگ آمیزی و با کمک میکروسکوپ نوری مورد مطالعه قرار گرفتند.
نتیجه گیری و بحث:در بررسی بافت شناسی لایه های مختلف اینفاندیبولوم،بافت پوششی شامل سلول های ترشحی و غیرترشحی مژه دار بود که در قسمت های مختف پراکندگی متفاوتی داشتند. حضور این سلول های ترشحی و نوع ترشح آن ها با کمک رنگ آمیزی پاس مشخص شد.در مخاط و زیر مخاط دیواره نازک اینفاندیبولوم، چین های اولیه و ثانویه به همراه ستیغ های طولی مشاهده گردید. مخاط و زیر مخاط با کمک رنگ آمیزی تری کروم ماسون به خوبی قابل تشخیص بودند. لامینا پروپریا و زیر مخاط از یک بافت همبند سست به همراه فیبرهای کلاژن و عروق تشکیل شده بودند. طبقه عضلانی و سروز نیزبه طور واضح مشخص بود. نتایج این مطالعه نشان داد که ساختار بافتی اینفاندیبولوم در کبک چوکار با سایر پرندگان اهلی مشابه است.
کلمات کلیدی: اویداکت، اینفاندیبولوم، بافت شناسی، کبک چوکار

تعیین ترکیب شیمیایی و محتویات مواد معدنی پودر ماهی کیلکا

*حسین جهانیان نجف‌آبادی**
گروه علوم دامی، دانشکده کشاورزی، دانشگاه بوعلی سینا، همدان، ایران
پست الکترونیک نویسنده مسؤول: hjahanian@yahoo.com

اهداف: یکی از مهمترین مشکلات استفاده از پودر ماهی کیلکا در جیره‌های غذایی طیور، متغیر بودن ارزش غذایی آن به ویژه از نظر مقدار پروتئین و چربی می‌باشد. هدف از این مطالعه تعیین ترکیب شیمیایی و محتویات مواد معدنی پودر ماهی کیلکا بود.
مواد و روش‌ها: تعداد ۱۰ نمونه مرکب پودر ماهی کیلکا در طی دو ماه نمونه‌برداری از واحد تولید دو کارخانه صنعتی تولید پودر ماهی در استان گیلان تهیه شدند. هر یک از نمونه‌های مرکب پودر ماهی کیلکا تا زمان انجام تجزیه شیمیایی برای تعیین ترکیب شیمیایی و محتویات مواد معدنی در دمای ۲۰°C- در سردخانه نگهداری شدند. داده‌ها در قالب طرح کاملا تصادفی مورد تجزیه و تحلیل قرار گرفتند. هر نمونه در شش تکرار مورد آزمایش قرار گرفت. مقایسه میانگین‌ها با استفاده از آزمون چند دامنه‌ای دانکن انجام شد. مقایسه میانگین ترکیب شیمیایی و محتویات مواد معدنی نمونه‌های پودر ماهی کیلکا با داده‌های NRC (۱۹۹۴) با استفاده از آزمون t دو دامنه انجام شد.
نتایج و نتیجه‌گیری: نتایج تجزیه تقریبی نشان داد که مقدار ماده خشک، چربی خام، پروتئین خام، فیبر خام و خاکستر در بین نمونه‌های پودر ماهی کیلکا اختلافات بسیار معنی‌داری (P<۰/۰۱) داشت و میانگین مقادیر آنها به ترتیب ۹۴/۹، ۲۴/۲، ۵۷/۶، ۰/۷۸ و ۱۵/۱ درصد بود. مقدار انرژی خام در بین نمونه‌های پودر ماهی کیلکا تفاوت‌های بسیار معنی‌داری (P<۰/۰۱) را نشان داد و میانگین مقدار آن ۵۴۹۶ کیلوکالری در کیلوگرم بود. مقادیر مواد معدنی پرنیاز شامل کلسیم، فسفر، سدیم، پتاسیم، کلر، منیزیم و گوگرد در بین نمونه‌های پودر ماهی کیلکا اختلافات بسیار معنی‌داری (P<۰/۰۱) داشت و میانگین مقادیر آنها به ترتیب ۴/۶۳، ۲/۷۷، ۰/۹۴، ۰/۶۱، ۰/۷۲، ۰/۳۵ و ۰/۵۲ درصد بود. مقادیر مواد معدنی کم نیاز شامل آهن، مس، منگنز، روی و سلنیم در بین نمونه‌های پودر ماهی کیلکا تفاوت‌های بسیار معنی‌داری (P<۰/۰۱) را نشان داد و میانگین مقادیر آنها به ترتیب ۲۶۷/۴، ۷/۸، ۴/۳، ۸۸/۶ و ۱/۷۵ میلی‌گرم در کیلوگرم بود. بر اساس نتایج این مطالعه به نظر می‌رسد که ترکیب شیمیایی و محتویات مواد معدنی پودر ماهی کیلکا به شدت متغیر است و بایستی به طور مداوم قبل از استفاده آن در جیره‌های غذایی طیور مورد ارزیابی قرارگیرد.
واژه‌های کلیدی: پودر ماهی کیلکا، ترکیب شیمیایی، محتویات مواد معدنی، جیره، طیور، ایران

ارزیابی ترکیب شیمیایی و محتویات مواد معدنی پودر گوشت و استخوان

*حسین جهانیان نجف‌آبادی**

گروه علوم دامی، دانشکده کشاورزی، دانشگاه بوعلی سینا، همدان، ایران

پست الکترونیک نویسنده مسؤول: hjahanian@yahoo.com

اهداف: یکی از مهمترین مشکلات مصرف پودر گوشت و استخوان در جیره‌های غذایی طیور، متغیر بودن ارزش غذایی آن به ویژه از نظر مقدار پروتئین، کلسیم و فسفر می‌باشد. هدف از این مطالعه ارزیابی ترکیب شیمیایی و محتویات مواد معدنی پودر گوشت و استخوان بود.

مواد و روش‌ها: تعداد ۱۰ نمونه مرکب پودر گوشت و استخوان در طی دو ماه نمونه‌برداری از واحد تولید یک کشتارگاه صنعتی دام در استان فارس تهیه شدند. هر یک از نمونه‌های مرکب پودر گوشت و استخوان تا زمان انجام تجزیه شیمیایی برای تعیین ترکیب شیمیایی و محتویات مواد معدنی در دمای ۲۰°C- در سردخانه نگهداری شدند. داده‌ها در قالب طرح کاملا تصادفی مورد تجزیه و تحلیل قرار گرفتند. هر نمونه در شش تکرار مورد آزمایش قرار گرفت. مقایسه میانگین‌ها با استفاده از آزمون چند دامنه‌ای دانکن انجام شد. مقایسه میانگین ترکیب شیمیایی و محتویات مواد معدنی نمونه‌های پودر گوشت و استخوان با داده‌های NRC (۱۹۹۴) با استفاده از آزمون t دو دامنه انجام شد.

نتایج و نتیجه‌گیری: نتایج تجزیه تقریبی نشان داد که مقدار ماده خشک، چربی خام، پروتئین خام، فیبر خام و خاکستر در بین نمونه‌های پودر گوشت و استخوان تفاوت‌های بسیار معنی‌داری (P<۰/۰۱) داشت و میانگین مقادیر آنها به ترتیب ۹۴/۳، ۲۲/۴، ۳۶/۸، ۵/۶ و ۲۴/۲ درصد بود. مقدار انرژی خام در بین نمونه‌های پودر گوشت و استخوان اختلافات بسیار معنی‌داری (P<۰/۰۱) را نشان داد و میانگین مقدار آن ۵۳۴۷ کیلوکالری در کیلوگرم بود. مقادیر مواد معدنی پرنیاز شامل کلسیم، فسفر، سدیم، پتاسیم، کلر، منیزیم و گوگرد در بین نمونه‌های پودر گوشت و استخوان تفاوت‌های بسیار معنی‌داری (P<۰/۰۱) داشت و میانگین مقادیر آنها به ترتیب ۶/۵۸، ۳/۹۱، ۲/۴۴، ۰/۷۶، ۲/۵۷، ۰/۸۳ و ۰/۹۶ درصد بود. مقادیر مواد معدنی کم نیاز شامل آهن، مس، منگنز، روی و سلنیم در بین نمونه‌های پودر گوشت و استخوان اختلافات بسیار معنی‌داری (P<۰/۰۱) را نشان داد و میانگین مقادیر آنها به ترتیب ۸۷۵/۲، ۷۶/۹، ۴۹/۱، ۷۸/۴ و ۰/۲۸ میلی‌گرم در کیلوگرم بود. بر اساس نتایج این مطالعه به نظر می‌رسد که ترکیب شیمیایی و محتویات مواد معدنی پودر گوشت و استخوان به شدت متغیر است و بایستی به طور مداوم قبل از استفاده آن در جیره‌های غذایی طیور مورد ارزیابی قرار گیرد.

واژه‌های کلیدی: پودر گوشت و استخوان، ترکیب شیمیایی، محتویات مواد معدنی، جیره، طیور، ایران

مطالعه پاتولوژیک و مولکولی یک مورد عفونت غیرمعمول هپاتیت E مرغی درگله های تخمگذار تجاری درایران.

*سید احمد مدنی[۱]، امیر قربانی[۱ و *]، مرتضی حدادیان[۲]، آرش قلیانچی لنگرودی[۳]*

[۱]گروه بیماریهای طیوردانشکده دامپزشکی دانشگاه تهران،تهران،ایران

[۲]آزمایشگاه دامپزشکی مرکزی، خیابان توحید،تهران،ایران

[۳]گروه میکروبیولوژی و ایمونولوژی دانشکده دامپزشکی دانشگاه تهران،تهران،ایران

[*] نشانی پست الکترونیک نویسنده مسؤول: amirghorbani@ut.ac.ir

اهداف:ویروس هپاتیتEپرندگان (aHEV) عامل سندرم هپاتیت-اسپلنومگالی یا بیماری کبد وطحال بزرگ درماکیان میباشد. حداقل سه ژنوتیپ ازaHEVها تا کنون در ارتباط با این بیماری در ماکیان شناسایی شده است. بااینحال،تا کنون گزارشی حاکی از شناساییaHEVها درگله های طیورایران ارایه نشده است.

موادوروش کار:یک گله مرغ تخمگذار تجاری واقع دراستان گلستان درشمال شرقی ایران با افزایش تلفات وافت تولیدتخم مرغ غیرمعمول در سن ۳۸ هفتگی درژوئن ۲۰۱۴ به کلینیک مراجعه نمود. لاشه ها کالبدگشایی و بدقت مورد معاینه آسیب شناسی قرار گرفتند.کشت های میکروبی معمول بر روی لاشه ها صورت پذیرفت.واکنش زنجیرهای پلیمرازترانس کریپتازمعکوس(RT-PCR)جهت ردیابی ویروسهای هپاتیت E پرندگان،بیماری نیوکاسل،آنفلوآنزای پرندگان وبرونشیت عفونی طیور مورد استفاده قرارگرفت. قطعات DNA تخلیص شده حاصل از RT-PCR با طول ۱۴۱ جفت بازحاوی ناحیه ای از ژن هلیکازaHEVجهت تعیین توالی ژنومی به شرکتBioneer(کره جنوبی) ارسال گردیدند. نرم افزار های MegAlign،BioEditو MEGA6 جهت آنالیزتوالی ژنومی بدست آمده مورد استفاده قرار گرفتند.

نتایج وبحث:متوسطمرگ ومیر وکاهش تولیدتخم مرغ در یک دوره ۱۱هفته ای بترتیب ۰/۱۸٪و ۲۰٪بود. درکالبدگشایی ضایعات اغلب شامل بزرگشدن کبدوطحال باظاهر لکه لکه وحضورهماتوم زیرکپسولی و لخته های خون متصل به سطح شکننده کبد بود. درهیستوپاتولوژی،ضایعات ازهپاتیت لنفوپلاسموسیتیک پری پورتال حاد تا کلانژیوهپاتایتیس مزمن همراه باخونریزی،واسکولیت وآمیلوئیدوزمشاهده گردید. هیچ باکتری قابل توجهی بجز اشریشیاکلی ازکبدوطحال لاشه هاجدا نگردید. چهارنمونه مخلوط ازکبد،صفرا وطحال برای ردیابی aHEVتوسط RT-PCR موردآزمایش قرارگرفته که همگی مثبت بودند. تلاش برای ردیابی ویروس بیماری نیوکاسل،آنفلوآنزای وبرونشیت عفونی طیور توسط RT-PCRناموفق بود. تجزیه وتحلیل توالی قطعه ای از ژن هلیکاز این ویروسها نشان دادکه جدایه ایرانی بیشترین خویشاوندی را باژنوتیپ ۴ فرضی ازمجارستان نشان میدهد. مشاهده شباهت ۷۹ تا ۹۰٪میان توالی مورد نظر از ژن هلیکاز ویروس این مطالعه وسایرaHEV ها حاکی ازوجود هتروژنیسیتی گسترده درaHEVها در سراسرجهان می باشد. این اولین گزارش ازحضورaHEVها درگله های طیورایران است. ازاینرو،دامپزشکان طیوربایستی توجه کافی به ضایعات آسیب شناسی aHEVدرطیور تخمگذارتجاری داشته باشند.

کلمات کلیدی:ویروس هپاتیتEمرغی،سندرم هپاتیت-اسپلنومگالی،ژن هلیکاز،تجزیه وتحلیل توالی،ایران

تاثیر اسیدهای چرب اشباع و غیراشباع بر روی آترواسکلروزیس تجربی در جوجه‌های گوشتی

محمد صادق مددی[۱]،فائزه روستایی شلمانی[۲]، جواد اشرفی هلان[۳]، امیر نیک کار مکرم[۴]*
۱.گروه علوم درمانگاهی، دانشکده دامپزشکی، دانشگاه تبریز، تبریز، ایران
۲.دکترای دامپزشکی، دانشکده دامپزشکی، دانشگاه تبریز، تبریز، ایران
۳.گروه پاتوبیولوژی، دانشکده دامپزشکی، دانشگاه تبریز، تبریز، ایران
۴.دانشجوی دکترای دامپزشکی، دانشکده دامپزشکی، دانشگاه تبریز، تبریز، ایران

هدف: بیماری‌های متابولیکی جزء بیماری‌های مهم در صنعت طیور هستند که زیان‌های اقتصادی زیادی را به این صنعت وارد می‌کنند. در این ارتباط اثرات گیاهان دارویی بر روی التیام آترواسکلروزیس تجربی مورد مطالعه قرار گرفت.
مواد و روش کار: این مطالعه در یک طرح کاملا تصادفی با ۹۰ قطعه جوجه گوشتی در سه گروه و هر گروه در ۳ تکرار انجام شد. جیره گروه اول و دوم به ترتیب حاوی دنبه و روغن سویا بود و گروه سوم به عنوان گروه کنترل در نظر گرفته شده و جیره فاقد چربی دریافت کرد. در گروه اول و دوم با افزایش سن، مقدار چربی از ۲٪ در مرحله اول به ۶٪ در مرحله سوم رسید.
نتیجه گیری و بحث: این مطالعه نشان داد که روغن دنبه آترواسکلروزیس شدید و روغن سویا آترواسکلروزیس خفیفی ایجاد می‌کند، درحالیکه در گروه کنترل هیچ علایمی مبنی بر آترواسکلروزیس مشاهده نشد.
کلمات کلیدی: جوجه گوشتی، اسید چرب اشباع، اسید چرب غیراشباع، آترواسکلروزیس

بررسی سرمی آنتی بادی بیماری نیوکاسل و ویروس آنفولانزای پرندگان در گروهی از گله های مادر در آذربایجانغربی

رضا رضاپور،ابوالفضل غنی یی[۱]،پیمان منتظمی،آرمان فیضی*
۱-استادیارگروه طیور دانشکده دامپزشکی دانشگاه سراسری ارومیه
***ایمیل: Rezapour.vetpou@gmail.com**

اهداف:کمپلکس های تنفسی جزو مهم ترین مشکلات صنعت طیور هستند و میتوانند خسارات اقتصادی سنگینی را به صنعت طیور و دولت تحمیل کنند.ویروس آنفولانزای پرندگان و ویروس نیوکاسل دو مورد از مهم ترین موارد درگیر کننده ی سیستم تنفسی طیور هستند.پرندگانی که تحت تاثیر این دو ویروس قرار می گیرند دچار کاهش تولید و افزایش تلفات می شوند.آزمایش های سرولوژی ابزار مناسبی برای ارزیابی وضعیت ایمنی پرندگان هستند.آزمایش ممانعت از هماگلوتیناسیون یک آزمایش رایج و مفید در تشخیص آزمایشگاهی است.
ابزارها و روشها:برای تعیین تیتر آنتی بادی در گروهی از مرغان مادر در آذربایجانغربی نمونه های خون ۵۰۰ پرنده از ۶۴ گروه ازآزمایشگاه مرکزی آذربایجانغربی جمع آوری و آزمایش ممانعت از هماگلوتیناسیون روی آنها انجام شد.نتایج آزمایش ثبت شد و با نرم افزاراس پی اس اس مورد آنالیز آماری قرار گرفت.
نتایج:میانگین تیتر آنتی بادی برای ویروس بیماری نیوکاسل ۹/۴ ,حداقل تیتر آنتی بادی ۷ و حداکثر ۱۲ بود.تیتر آنتی بادی ۸۵٪از پرندگان(۴۲۵ پرنده)در بازه ۷-۱۰ قرار داشت که میتواند نشان دهنده ی واکسیناسیون قبلی باشد و تیتر ۱۵٪ از پرندگان(۷۵ پرنده) در بازه ۱۱- ۱۲قرار داشت که احتمالا نشان دهنده ی چالش با ویروس مزرعه است.میانگین تیتر آنتی بادی برای ویروس آنفولانزا۸/۷,حداقل تیتر آنتی بادی ۷ و حداکثر ۱۲ بود.تیتر آنتی بادی ۹۴٪از پرندگان(۴۷۰پرنده)در بازه ۷-۱۰ قرار داشت که ممکن است نشان دهنده ی واکسیناسیون قبلی باشد و تیتر آنتی بادی ۶٪ از پرندگان (۳۰ پرنده)در بازه۱۱-۱۲ قرار داشت که احتمالا نشان دهنده ی چالش با ویروس مزرعه است.اینها تیترهای آنتی بادی متفاوت در طول فصول مختلف سال بودند.
بحث:تیتر بالای آنتی بادی در سرم مربوط به ویروس آنفولانزای پرندگان و ویروس بیماری نیوکاسل نقش خیلی مهمی را در ابتلا به عفونت های پیچیده ی دستگاه تنفس در مرغان مادر ایفا میکند.تدابیر امنیت زیستی،واکسیناسیون و مراقبت از گله ابزارهای تاثیر گذاری در جهت پیشگیری از ابتلا به آلودگی هستند و خسارات اقتصادی ناشی از درگیری را کاهش میدهند.
کلمات کلیدی:بیماری نیوکاسل,آنفولانزای پرندگان,ممانعت از هماگلوتیناسیون,مرغ مادر,آذربایجانغربی

بررسی سرمی آنتی بادی ویروس آنفولانزای پرندگان وبیماری نیوکاسل در گروهی از گله های گوشتی در آذربایجانغربی

ابوالفضل غنی یی[1]،آرمان فیضی،رضا رضاپور،هانیه حقیقت خواه*
۱-استادیارگروه طیور دانشکده دامپزشکی دانشگاه سراسری ارومیه
***ایمیل :Rezapour.vetpou@gmail.com**

اهداف:کمپلکس های تنفسی جزو مهم ترین مشکلات صنعت طیور هستند و میتوانند خسارات اقتصادی سنگینی را به صنعت طیور و دولت تحمیل کنند.ویروس آنفولانزای پرندگان و ویروس نیوکاسل دو مورد از مهم ترین موارد درگیر کننده ی سیستم تنفسی طیور هستند.پرندگانی که تحت تاثیر این دو ویروس قرار می گیرند دچار کاهش تولید و افزایش تلفات می شوند.آزمایش های سرولوژی ابزار مناسبی برای ارزیابی وضعیت ایمنی پرندگان هستند.آزمایش ممانعت از هماگلوتیناسیون یک آزمایش رایج و مفید در تشخیص آزمایشگاهی است.
ابزارها و روشها:برای تعیین تیتر آنتی بادی در گروهی از مرغان گوشتی در آذربایجانغربی نمونه های خون ۵۰۰ پرنده ازآزمایشگاه مرکزی آذربایجانغربی جمع آوری و آزمایش ممانعت از هماگلوتیناسیون روی آنها انجام شد.نتایج آزمایش ثبت شد و با نرم افزاراس پی اس اس مورد آنالیز آماری قرار گرفت.
نتایج:میانگین تیتر آنتی بادی برای ویروس بیماری نیوکاسل ۴/۶۴ بود.تیتر آنتی بادی ۲۶/۲٪از پرندگان(۱۳۱پرنده)در بازه ۰-۳ قرار داشت که این پرندگان سرم منفی هستند.تیتر ۶۸٪ از پرندگان (۳۴۰پرنده)در بازه ۴-۷ بود که میتواند نشان دهنده ی واکسیناسیون قبلی باشد و تیتر ۵/۸٪ از پرندگان(۲۹ پرنده) در بازه ۸- ۱۲قرار داشت که احتمالا نشان دهنده ی چالش با ویروس مزرعه است.میانگین تیتر آنتی بادی برای ویروس آنفولانزا۳/۷۶ بود.تیتر آنتی بادی۶/۸٪از پرندگان(۳۴پرنده)در بازه ۰-۱ قرار داشت که این پرندگان سرم منفی بودند.تیتر آنتی بادی ۷۴/۷٪از پرندگان(۳۷۲پرنده)در بازه ۲-۵ بود که ممکن است نشان دهنده ی واکسیناسیون قبلی باشد و تیتر آنتی بادی ۱۸/۸٪ از پرندگان (۹۴ پرنده)در بازه۶-۱۲ قرار داشت که احتمالا نشان دهنده ی چالش با ویروس مزرعه است.اینها تیترهای آنتی بادی متفاوت در طول فصول مختلف سال بودند.
بحث:تیتر بالای آنتی بادی در سرم مربوط به ویروس آنفولانزای پرندگان و ویروس بیماری نیوکاسل نقش خیلی مهمی را در ابتلا به عفونت های پیچیده ی دستگاه تنفس در مرغان گوشتی ایفا میکند.تدابیر امنیت زیستی،واکسیناسیون و مراقبت از گله ابزارهای تاثیر گذاری در جهت پیشگیری از ابتلا به آلودگی هستند و خسارات اقتصادی ناشی از درگیری را کاهش میدهند.
کلمات کلیدی:بیماری نیوکاسل،آنفولانزای پرندگان،ممانعت از هماگلوتیناسیون،مرغ گوشتی،آذربایجانغربی

تعیین هویت مولکولی ایزوله‌های اورنیتوباکتریوم جدا شده از مرغداریهای استان مرکزی

پریسا ایزدخواه[1] ، سید داوود حسینی[2] ، احمدعلی پوربابایی[3]*
۱)کارشناس ارشد میکروب شناسی، دانشگاه آزاد اسلامی قم، قم، ایران.
۲)استادیار، موسسه تحقیقات واکسن و سرم سازی رازی شعبه اراک، اراک، ایران.
۳)استادیار، گروه میکروبیولوژی، دانشگاه آزاد اسلامی قم، قم، ایران.
نویسنده مسؤول: hosseinida@yahoo.com *

سابقه و هدف: اورنیتوباکتریوم رینوتراکئال (ORT) یک گونه از باکتری‌های شناخته شده است که با بیماری‌های تنفسی، کاهش رشد، مرگ و میر و کاهش میزان تولید تخم مرغ در ارتباط است. اورنیتوباکتریوزیز یک بیماری عفونی در گونه‌های پرندگان است که تقریبا در تمام کشورها در سراسر جهان گزارش شده است. اولین ایزوله‌های ثبت شده ORT از بوقلمون در آلمان در سال ۱۹۸۱ بود. ORT همچنین از مرغ، مرغ شاخدار، غازها، مرغابی‌ها، بلدرچین، کبوتر، قرقاول، کبک، شترمرغ، مرغ ماهی‌خوار، کلاغها و بوقلمون جدا شده است. ORT توسط Vandamme و همکارانش در سال ۱۹۹۴ نامگذاری شد. در ایران عفونت ORT برای اولین بار توسط بنانی و همکارانش گزارش شد. هدف اصلی این مطالعه شناسایی اورنیتوباکتریوم‌های جدا شده در استان مرکزی با استفاده از تجزیه و تحلیل مولکولی است.
مواد و روش‌ها: نمونه‌برداری توسط موسسه تحقیقات واکسن و سرم سازی رازی از مرداد ۹۰ تا پایان سال ۹۱ انجام شده و نمونه‌ها به صورت تصادفی از ۲۰ مرغداری مناطق مختلف شهرستان اراک و از ۲۳۱ قطعه طیور جمع آوری شده بودند. نمونه‌ها در محیط آگار خوندار حاوی 5µg/ml جنتامایسین کشت داده شد و به مدت ۴۸ ساعت در ۳۷°c انکوبه شد. سپس همه نمونه‌ها با استفاده از پرایمر PCR ،16S rRNA و در نهایت توالی یابی شدند.
یافته‌ها: نتایج آزمون PCR و مشاهده باند 784 bp بر روی ژل آگاروز وجود جنس باکتری اورنیتوباکتریوم را تایید کرد. همچنین مقایسه توالیهای بدست آمده از ایزوله‌های جدا شده با توالی‌های موجود در GeneBank نشان داد که ۹۸ -۱۰۰ درصد شباهت با سویه‌های اورنیتوباکتریوم رینوتراکئال وجود دارد که مبین وجود این گونه‌ی باکتری در مرغداریهای استان مرکزی است.
نتیجه گیری: باکتری اورنیتوباکتریوم رینوتراکئال گونه غالب باکتری اورنیتوباکتریوم در مرغداریهای استان مرکزی است.

کلمات کلیدی: ORT، مرغ، PCR، بیماری تنفسی، 16S rRNA

طراحی و ارزیابی یک روش Multiplex PCR در تشخیص وجود عفونت ویروس‌های نیوکاسل، برونشیت و آنفلوانزا در طیور

سید داود حسینی[1]، سعید ابراهیمی[1]، نفیسه سادات میرجمالی[1]، مسعو هاشم زاده[2]*
۱ - موسسه تحقیقات واکسن و سرم سازی رازی شعبه اراک، اراک، ایران.
۲- موسسه تحقیقات واکسن و سرم سازی رازی ،کرج، ایران.
نویسنده مسؤول: hosseinida@yahoo.com *

مقدمه: از مهم‌ترین این بیماری‌های ویروسی که سوددهی صنعت طیور را تحت تاثیر قرار می‌دهند، بیماری‌های ویروس‌های برونشیت عفونی، نیوکاسل و آنفلوانزای طیور است. شناسایی اولیه و سریع این بیماری‌ها حائز اهمیت بسیار بالایی است. روش Multiplex PCR که قابلیت تشخیص همزمان چند ویروس را در آن واحد به ما می‌دهد یکی از بهترین روش‌هایی است که امروزه در تشخیص بیماری‌های ویروسی مورد استفاده قرار می‌گیرد. بنابراین با استفاده از این روش می‌توان سه ویروس فوق را به روشی بسیار کم‌هزینه‌تر و سریع‌تر شناسایی نمود. هدف از این مطالعه شناسایی همزمان آلودگی با سه ویروس برونشیت، نیوکاسل و آنفلوانزا به روش Multiplex PCR در یک واکنش است.
موادا و روش‌ها: پس از استخراج RNA ژنومی سه ویروس برونشیت، نیوکاسل و آنفلوانزا از سویه‌های استاندارد آن‌ها، DNA مکمل هریک ساخته شد. سپس واکنش PCR برای هر یک از ویروس‌ها به طور جداگانه طراحی و بهینه‌سازی شد. سپس شرایط واکنش برای ویروس‌ها به صورت دو به دو بررسی گردید، و نهایتا یک واکنش Multiplex PCR برای هرسه ویروس به طور همزمان انجام شد و باندهای مربوط به هر ویروس به طور همزمان بررسی شد.
نتایج: سه باند ۶۳۷ bp برای IBV، ۲۳۴ bp برای NDV و ۴۹۳ bp برای HN در یک ستون روی ژل آگارز قابل مشاهده بودند.
بحث و نتیجه‌گیری: با توجه به گسترش روزافزون صنعت طیور و تاثیر هرچه بیشتر آن بر اقتصاد کشورها و دنیا، نیاز به شناسایی هرچه سریع‌تر و دقیق‌تر بیماری‌ها خصوصا بیماری‌های ویروسی نیازی مبرم به نظر می‌رسد. بنابراین، استفاده از روش‌های نوین مولکولی همچون Multiplex PCR می‌تواند مراکز پرورش طیور را در تشخیص و درمان این بیماری‌های ویروسی بسیار کمک کند. نتایج نشانگر آن است که از این روش می توان به عنوان یک روش سریع و حساس تشخیصی برای این سه پاتوژن مهم تنفسی طیور بهره جست.

اثر تجویز همزمان آنتاگونیست گیرنده های Metabotropic Glutamate و آنتاگونیست Nociceptin/orphaninFQ بر اخذ غذای بلدرچین

الهام واعظی، شقایق حاجیان شهری، محمدرضا حاجی نژاد، مختارپور

اهداف : [Nphe[1]]NC (1–13) NH2یک آنتاگونیست موثر و قوی برای گیرنده Nociceptinorphanin FQ (NH□) اثرات کاهنده اشتها خود را در شرایط نرمال بروز می دهد. اثر بلاک کننده گیرنده Metabotropic Glutamate تیپ 1 محیطی روی گیرنده Nociceptinorphanin FQ اثر افزاینده مصرف غذا در بلدرچین هایی که تحت محدودیت غذایی قرار گرفته بودند را مورد ارزیابی قرار گرفت.
مواد و روش ها : ۴۰ پرنده در هر آزمون تجربی مورد ارزیابی قرار گرفتند. همه ی محلول ها در یک روز در طی ساعت ۹ تا ۱۲ صبح به ۱۰ پرنده مشابه تزریق شدند. غذای تازه فراهم شده بود در زمان تزریق و مقدار مصرف تجمعی غذا به گرم در ۱۸۰، ۳۶۰ و ۵۴۰ دقیقه بعد ثبت شد. مقدار غذای مصرف شده به صورت تجمعی به صورت میانگین ±انحراف معیار (SD) بیان شد و با استفاده از آنالیز یک‌طرفه متغییرها (Annova) در هردوره زمانی آنالیز شد.
بحث و نتیجه گیری : یافته های بدست آمده در این مطالعه نشان داد که تجویز آنتاگونیست گیرنده Metabotropic Glutamate تیپ 1 (mGlur 1) یا (YM-202074) با دوز mg/kg ۱۰۰ باعث القا اثرات کاهنده مصرف غذا شد در بلدرچین هایی که تحت محدودیت غذایی گرفته بودند. تزریق داخل صفاقی آگونیست گیرنده Nociceptinorphanin FQ انتخابی باعث افزایش مصرف غذا در بلدرچین های محروم از غذا شد که این اثر در ۳ دوز تست شده به صورت آماری قابل توجه بود. (۴، ۸ و ۱۶ mg/kg)
به نظر می رسد موثرترین دوز mg/kg ۱۶ بود. به دنبال تزریق داخل صفاقی (YM-202074) مصرف غذا و مدت زمان تاخیر تا خوردن غذا کاهش پیدا کرد . برای بررسی اینکه آیا این اثر بی اشتهایی که ایجاد کردیم به دلیل بلاک گیرنده Nociceptinorphanin FQ بوده یا نه، پرنده ها تزریق هم زمان داخل صفاقی Nociceptinorphanin FQ و YM-202074 را دریافت کردند و دوزNociceptinorphanin FQSubmaximal (۳ mg/kg) به طور قابل توجهی باعث افزایش بی اشتهایی ناشی از آنتاگونیست Metabotropic Glutamate تیپ 1 (mGlur 1) شد.
نتایج مطالعه حاضر نشان می دهد که آنتاگونیست Nociceptinorphanin FQ به طور قابل توجهی باعث افزایش اثرات بی اشتهایی آور گیرنده Metabotropic Glutamate تیپ 1 می شود و ما را به این نتیجه می رساند که احتمالا بی اشتهایی ایجاد شده توسط YM-202074 ممکن است توسط بر هم کنش گری با گیرنده های Nociceptinorphanin FQ میانجی گری شود.

کلمات کلیدی : بلدرچین، اخذ غذا، متابوتروپیک گلوتامات، نوسی سپتین

غدد میزبان اسپرم در کبک چوکار (الکتوریس چوکار)

*شادی هاشم نیا**
گروه علوم پایه، دانشکده دامپزشکی، دانشگاه شهید باهنر، کرمان، ایران
نویسنده مسؤول:shadihashemnia@uk.ac.ir

مقدمه:در این مطالعه بافت شناسی و هیستوشیمی ناحیه اتصال رحم- واژن و غدد میزبان اسپرم در کبک چوکار در دوره تخمگذاری مورد بررسی قرار گرفت.
مواد و روش کار: به منظور این مطالعه، ۵ عدد کبک چوکار سالم و تخمگذار تهیه و به روش انسانی و با کمک کتامین کشته شدند. سپس محوطه سینه ای-شکمی باز، اویداکت به طور کامل خارج و از محل اتصال رحم- واژن نمونه هایی تهیه شد.پس از ثبوت نمونه ها در محلول بوئن، از نمونه ها به روش معمول آزمایشگاه هیستوتکنیک بلوک های پارافینی فراهم و برش هایی عرضی به ضخامت ۵ میکرون آماده گردید.سپس برش ها با رنگ‌های هماتوکسیلین- ائوزین، پریودیک اسید شیف و آلسین بلو- ون گیسون رنگ‌آمیزی و با کمک میکروسکوپ نوری مورد مطالعه قرار گرفتند.
نتیجه گیری و بحث:در بررسی بافت شناسی و هیستوشیمی لایه های مختلف در محل اتصال رحم- واژن، بافت پوششی از نوع استوانه ای شبه مطبق مژه دار بود. این بافت پوششی شامل سلول های ترشحی و غیرترشحی مژه دار بود که در قسمت های مختلف پراکندگی متفاوتی داشت. حضور سلول های ترشحی بافت پوششی و غدد میزبان اسپرم، همچنین نوع ترشح آن ها با کمک رنگ آمیزی پاس و آلسین بلو مشخص گردید.ترشحات غدد میزبان اسپرم هر دو نوع موکوپلی ساکاریدی اسیدی و خنثی را نشان دادند.لامینا پروپریا و زیرمخاط به کمک رنگ آمیزی ون گیسون به خوبی قابل تشخیص بودند.این دو قسمت از یک بافت همبند سست به همراه فیبرهای کلاژن و عروق تشکیل شده بودند. در لامینا پروپریا هیچ غده ای مشاهده نشد.طبقه عضلانی و سروز نیز به طور واضح مشخص بود. نتایج این مطالعه نشان داد که علی رغم تفاوت های جزئی در ساختار بافتی محل اتصال واژن- رحم در کبک چوکار با سایر پرندگان اهلی، این بخش به طور کلی دارای الگوی بافتی مشابهی با سایر پرندگان اهلی است.
کلمات کلیدی:اتصال رحم- واژن، غدد میزبان اسپرم، بافت شناسی، کبک چوکار

بررسی سرولوژیک ویروس کم خونی عفونی جوجه ها در واحد های مرغ گوشتی ارومیه

دانا انوشه[1]، سیما قریشی[1]
دانشجوی دامپزشکی، دانشکده دامپزشکی، دانشگاه ارومیه، ارومیه، ایران
ایمیل نویسنده مسؤول: Dr.dana.anousheh@gmail.com

مقدمه: هدف از این مطالعه بررسی میزان شیوع و وضعیت سرولوژیکی ویروس کم‌خونی عفونی جوجه‌ها (CAV) در مرغ‌های گوشتی ارومیه می باشد. ویروس کم‌خونی عفونی جوجه‌ها، یک ویروس مقاوم و همه‌جایی است که نقش مهمی در ایجاد سندرم هموراژیک و آنمی‌آپلاستیک دارد. مهمترین عوارض ناشی از بیماری شامل آنمی، آپلاسی مغز استخوان و آتروفی تیموس، طحال و بورس فابرسیوس دیده می‌باشد. اگرچه عفونت در پرندگان مسن‌تر موجب تضعیف سیستم ایمنی نیز می‌شود. ویروس کم‌خونی عفونی جوجه‌ها هم از طریق افقی و هم عمودی منتقل می‌شود. انتقال از طریق تخم اهمیت زیادی در زنجیره‌های تولید مرغ دارد، به خصوص وقتی که مرغ‌های آنتی‌بادی منفی در دوران تولید تخم‌مرغ به صورت افقی و از طریق منی خروس‌های عفونی آلوده می‌شوند.
مواد و روش کار:تعداد ۱۵۰ نمونه خون از ۱۴ واحد مرغداری گوشتی ارومیه جمع‌آوری و به آزمایشگاه منتقل شد و سرم با سانتریفیوژ g۱۷۵۰ و به مدت ۱۰ دقیقه اخذ شد. تست الایزا با استفاده از کیت تجاری (*ProFLOK® CAV* ELISA kit) ، و سنجش تیتر آنتی‌بادی نیز با دستگاه ELISA Readerانجام شد.
نتایج:ویروس کم‌خونی عفونی جوجه در واحدهای طیور گوشتی ارومیه شیوع فراوانی داشت. میزان شیوع سرولوژیکی عامل کم خونی عفونی جوجه‌ها ۹۱.۳٪ می‌باشد. میانگین هندسی تیتر الایزا ویروس کم‌خونی عفونی ۳۹۲۸ بود، که کمترین و بیشترین میزان تیتر به ترتیب ۰ و ۱۳۷۰۲ گزارش شد. اهمیت فرم تحت‌بالینی کم‌خونی عفونی جوجه‌ها که با تخریب بافت لنفوئیدی موجب تضعیف سیستم ایمنی پرنده‌ها می‌شود، نیز در این مطالعه مشخص شد. این مطالعه نشان داد میزان شیوع بیماری کم خونی عفونی جوجه‌ها در واحدهای مرغ گوشتی ارومیه بالا است، که اهمیت واکسیناسیون منظم در واحدهای مرغ مادر گوشتی برای جلوگیری از انتقال عمودی، و همچنین افزایش آنتی‌بادی مادری برای جلوگیری از عفونت مرغ‌های گوشتی را نشان می‌دهد.
کلمات کلیدی: کم‌خونی عفونی جوجه‌ها، مرغ گوشتی، سرولوژیک، الایزا، ارومیه

مطالعه اثر عصاره آبی زرشک بر *Escherichia coli* در سوپ مرغ تجاری

مجید علیپور اسکندانی
استادیار بهداشت و کنترل کیفی مواد غذایی، دانشکده دامپزشکی، دانشگاه زابل، زابل
ایمیل : alipour@uoz.ac.ir

اهداف: اثر ضد میکروبی غلظتهای مختلف عصاره آبی زرشک(Berberis vulgaris) بر روی رشد باکتری *Escherichia coli* (PTCC 1399) با استفاده از نمونه های استریل شده و در دمای انکوباسیون ۳۰ ^{o}C طی ۶ روزمورد مطالعه قرار گرفت .
موادوروشها: بعد از آماده سازی و آسیاب کردن میوه زرشک، عصاره آبی تهیه گردید. $۱۰^{۳}$باکتری *Escherichia coli* (PTCC 1399) در هر میلی لیتر از سوپ مرغ تجاری (در هر ۸۰ میلی لیتر سوپ، ۸×۱۰^{۴} باکتری) درون ظروف شیشه ای درب آبی شامل نمونه ها تحت شرایط استریل تلقیح گردید. بعد از تلقیح باکتری و اضافه نمودن غلظت های مختلف عصاره آبی به سوپ، اثر ضد میکروبی زرشک بر باکتری ایکلای در غلظت ها ی مختلف طی روزهای مد نظر بررسی گردید.
نتایج:نتایج نشان داد که غلظتهای ۰/۵ ٪ ، ۱ ٪ و ۲/۵ ٪ اثر مهاری بر روی باکتری *E. coli*داشت، و غلظت های ۰/۱٪ و ۰/۳٪ اثر مهاری بر رشد باکتری *E. coli*نداشتند. بر طبق یافته های بدست آمده از این تحقیق، عصاره آبی زرشک میتواند باکتری *E. coli*را در سوپ از بین ببرد .همچنین می تواند به عنوان یک نگهدارنده طبیعی در بعضی مواد غذایی استفاده گردد.
واژگان کلیدی:*Escherichia coli*،عصاره آبی ، زرشک، سوپ مرغ

گزارش مشاهده‌ی لکه‌ی سیاه در قناری

منصور میاحی[۱]، حسام الدین ذهبی[۲]، وحید کشاورز[۲]، امین نجاتی ساروی[۲]
[۱] گروه علوم درمانگاهی، عضو هیئت علمی دانشکده دامپزشکی، دانشگاه شهید چمران اهواز
[۲] دانشجوی دکترای تخصصی بهداشت و بیماری‌های طیور دانشکده دامپزشکی، دانشگاه شهید چمران اهواز
نویسنده ی مسؤول: hessamoddin.zahabi@gmail.com

اهداف: قناری ماده با نشانه‌های کزکردگی، گوشه گیری، افسردگی، کاهش اشتها و مدفوع آبکی به درمانگاه پرندگان دانشکده دامپزشکی شهید چمران اهواز ارجاع گردید، نشانه‌ها از یک هفته قبل، مشاهده شده بود. صاحب پرنده از کنجاله‌ی تخم پنبه به عنوان بستر برای نگه داری پرنده استفاده کرده بود، که در پرسش‌های انجام گرفته، ایشان، به مصرف و مسمومیت حاصل از کنجاله ی تخم پنبه و ایجاد عوارض بیماری ناشی از آن مشکوک بودند. مسمومیت با رنگدانه ی گوسیپل، که در کنجاله ی تخم پنبه به فراوانی موجود است، ممکن است با بی اشتهایی، لاغری، کاهش تخم گذاری و تغییر رنگ زرده همراه شود، که عدم تخمگذاری در پرنده ی مذکور که ۱۳ ماه سن داشته، از دیگرنشانه ها ی حاصل از بیماری بیان گردیده بود.
مواد و روش کار: بعد از معاینات بالینی انجام گرفته، به بیماری لکه سیاه (Black Spot) ناشی از مایکوپلاسما با توجه به سن درگیری مشکوک شدیم. بر این اساس برای درمان از ۲ داروی فلورفنیکل و داکسی سایکلین، به ترتیب با دوزهای، ۲۰ میلی گرم به ازای هر کیلوگرم وزن بدن، و۰/۲۵ گرم در لیتر، به مدت ۶ روز و از طریق آشامیدنی استفاده گردید.
نتایج و نتیجه گیری: در پیگیری انجام گرفته، بعد از یک هفته، نشانه ها تا حد زیادی برطرف گشته بود، و پرنده بعد از ۲ هفته به طور کامل بهبود یافت. رعایت بهداشت محیط ازجمله نکات مهم در کنترل بیماری می باشد. همچنین کنترل بیماری هایی مثلا اورنیتوزیز یا کوکسیدیوز جهت جلوگیری از کاهش سطح ایمنی در پرنده ها ضروری می باشد، بهبود تغذیه و توجه دقیق به آماده سازی بهداشتی غذاهای نرم و دانه های جوانه زده، برای جلوگیری از عفونت های باکتریایی، استفاده از تولترازوریل به عنوان بخشی از یک طرح کنترل در برابر لکه سیاه در پرندهای جوان و همچنین ضدعفونی ظروف آبخوری و دانخوری به صورت هفتگی از دیگر نکات لازم جهت حفظ گله از بیماری می باشد.
واژه های کلیدی: بیماری بلک اسپات، مایکوپلاسما، قناری

خصوصیات مورفوپاتولوژیک آبله پرندگان در بوقلمون های بومی

حسن نوروزیان*[1]، قاسم فرجانی کیش[2]، عباس پیرزاده[2]
۱. گروه علوم درمانگاهی دانشکده دامپزشکی دانشگاه لرستان، ۲. گروه پاتوبیولوژی دانشکده دامپزشکی دانشگاه لرستان
* ایمیل نویسنده مسؤول: norouzian.h@lu.ac.ir

ویروس آبله پرندگان عضو خانواده Poxviridae و جنس Avipoxvirus است. این ویروس ها شامل چند سویه مشابه هستند که برای گونه های مختلف پرندگان اختصاصی میزبان هستند. این بیماری تمام گونه های پرندگان اعم از پرندگان اهلی و وحشی را درگیر می کند. در فرم پوستی ابله که رایج تر است ضایعات ابتدا به صورت تاول های ریز که در ادامه به ندول های زگیل مانند و دلمه های خشک تبدیل می شوند در تمام نقاط پوست بدن و بیشتر در جاهایی از بدن که بدون پر بوده(همانند تاج، گوش، چشم و گاهی روی پاها) ظاهر می شود. در شکل دیفتریایی یا مرطوب که کمتر معمول است بیشتر غشاهای مخاطی بخش های ابتدایی دستگاه تنفس و گوارش درگیر می شود. مطالعه حاضر خصوصیات مورفوپاتولوژیک آبله پرندگان در یک گله بوقلمون بومی را توصیف می کند.
از مجموع ۱۱۰ بوقلمون، هفت پرنده با سابقه افسردگی، بی اشتهایی و کاهش وزن به درمانگاه ارجاع داده شد. بر اساس اظهارات دامدار، حدود نیمی از بوقلمون ها درگیر بیماری بودند و تلفاتی مشاهده نشد اما دیگر سایر بوقلمون های مزرعه در معرض خطر بودند در معاینات اولیه، ندول های نرم و زردرنگ با قطر ۱ تا ۲ سانتی متر در ناحیه سر و گردن مشاهده شد. لایه های سطحی ندول ها به راحتی برداشته می شد. بافت نرم زیر لایه های سطحی ندول ها پرخون و هموراژیک بود. پس از معاینات بالینی، نمونه های بیوپسی از ضایعات در فرمالین بافر دار ۱۰ درصد تثبیت شد. پس از مراحل آماده سازی و تهیه برش های ۴ تا ۵ میکرونی از قالب ها، رنگ آمیزی متداول هماتوکسیلین و ائوزین انجام شد و به وسیله میکروسکوپ نوری مورد مطالعه قرار گرفت.
نتایج آزمایش هیستوپاتولوژی بیانگر هیپرپلازی سلولهای پوششی، دژنرسانس، تورم و واکوئلدار شدن سلول ها و حضور گنجیدگی های درون سیتوپلاسمی ائوزینوفیلیک(بولینجر بادی) در سلولهای مبتلا بود.
به عنوان استراتژی اصلی و مفید برای کنترل شیوع این بیماری بلافاصله از صاحب دام درخواست شد بوقلمون های بیمار قرنطینه شوند. ضدعفونی سازی منبع آب و غذای پرنده و کنترل جمعیت پشه های ناقل با یک محلول ضدعفونی کننده انجام شد. پس از تایید تشخیص اقدامات کنترلی و واکسیناسیون گله نیز توصیه شد.
کلمات کلیدی: بوقلمون، آبله، هیستوپاتولوژی، کراتینوسیت، واکسیناسیون

جداسازی مایکوپلاسمای آلوده کننده ریه بلدرچینهای پرورشی استان کرمان

بابک خیرخواه[1]،رضا احمدی[2]
۱.گروه میکروبیولوژی،دانشکده علوم،دانشگاه آزاد اسلامی واحد کرمان،کرمان ،ایران۲.گروه بیماریهای طیور،علوم و تحقیقات تهران،دانشگاه آزاد اسلامی،تهران،ایران
[1]babakkheirkhah@yahoo.com

سابقه وهدف : مایکوپلاسما ازعوامل مهم ایجادکننده بیماری در ماکیان وبلدرچین است که موجب عفونت دستگاه تنفسی وسینویت میگردد.این عفونت عامل مهم خسارت اقتصادی بدلیل ایجاد بیماریهای تنفسی،ناهنجاری حرکتی وکاهش دررشد و تولید تخم است که توسط سویه های متعدد پاتوزن ایجادمی شود.هدف ازاین تحقیق جداسازی مایکوپلاسماهای آلوده کننده ریه بلدرچینهای استان کرمان ومقایسه دو روش کشت و واکنش زنجیره ای پلیمرازمی‌باشد.
موادوروشها :دراین مطالعه توصیفی مجموعا ۵۰ نمونه ریه های مشکوک به پنومونیه ازبلدرچینهای پرورشی کشتارشده استان کرمان در ۶ ماهه اول سال ۱۳۹۴ جمع آوری وبه آزمایشگاه انتقال یافت.ترشحات ریه های مذکورابتدادرمحیط PPLO Broth غنی سازی وسپس با استفاده از یک زوج پرایمر اختصاصی برای جداسازی جنس مایکوپلاسما تحت واکنش زنجیره ای پلیمراز قرارگرفتند.
یافته هاونتایج:ازمجموع ۵۰ نمونه موردآزمایش تعداد ۹ نمونه (۱۸٪)آلوده به مایکوپلاسما بودندکه ۵ نمونه(۱۰٪) آلوده به*مایکوپلاسما سینوویه* و ۱ نمونه(۲٪)به*مایکوپلاسما گالیسپتیکوم*آلوده بودند نتایج این تحقیق نشان داد شیوع مایکوپلاسماها دربلدرچینهای پرورشی بیشتر ازطیور وشترمرغهای پرورشی است.
کلمات کلیدی:عفونت ریه،بلدرچین،*مایکوپلاسماسینوویه*،*مایکوپلاسماگالیسپتیکوم*،واکنش زنجیره ای پلیمراز

درمان جراحی سوختگی چینه دان در یک طوطی خاکستری آفریقایی (کاسکو)

Siyavash Jahany[1], Danial Rezaiemoghadam[2],MehrdadAhmadi Khalili[2],Mohamadreza Hadadmarandi[3]*

1-Resident of Veterinary Surgery, Faculty of Veterinary Medicine, ShahidChamran University,Ahvaz, Iran
2-Doctor of Veterinary Medicine, Exir Pet Clinic, Tehran, Iran
3-Resident of Poultry Diseases, Faculty of Veterinary Medicine, Shiraz University, Iran
denial_rezaie1926@yahoo.com

چینه دان قسمتی از بدن پرنده که در آن نگهداری و تخمیر غذا صورت می گیرد. با توجه به دیواره نازک نسبت به تروما حساس تر از سایر اعضا می باشد. فیسچول چینه دان می تواند بر اثر تغذیه دستی نامناسب، گاز گرفتگی توسط سایر حیوانات، جسم خارجی، ضربات و ... بوجود بیاید. سوختگی چینه دان معمولا بر اثر سوختگی که حاصل خوراندن غذای دستی گرم میباشد بوجود می آید. همچنین ممکن است بر اثر خشک کردن پرنده خیس توسط سشوار ایجاد شود، اگرچه اغلب بر اثر خوردن غذای بیش از حد گرم شده در مایکروویو رخ می دهد. یک عدد طوطی خاکستری آفریقایی (کاسکو) با فیسچول ۱ سانتی متر مربعی حاصل از سوختگی حاد چینه دان به مرکز تخصصی جراحی حیوانات خانگی اکسیر در تهران مراجعه نمود. پس از معاینه بالینی، بیمار برای ۵ روز قبل از جراحی تحت مداوا با دو داروی نیستاتین و انروفلوکساسین قرار گرفت. جهت کاهش فشار وارده بر چینه دان وعده های غذایی به دفعات بیشتر با حجم کمتر تغییر یافتند. پس از ۵ روز سروز چینه دان و پوست در یک لایه جوش خورده بودند. لذا تحت بیهوشی عمومی این بافت ها با کندکاری جداسازی و در دو لایه بخیه شدند. چینه دان با الگوی داخل برگردان و پوست با الگوی ساده تکی بسته شد. داروهای ضد قارچ و آنتی بیوتیک برای ۵ روز پس از جراحی ادامه یافتند. یک ماه پس از جراحی در معاینه خط بخیه کاملا بهبود یافته و اثری از ترشحات چینه دان یافت نشد. بافت چینه دان بسیار حساس به گرما بوده وغذا با دمای بالاتر از ۴۳.۳ سانتی گراد و گاها تماس با یک منبع گرمایی می تواند منجر به سوختگی چینه دان گردد. بنابراین پیشنهاد می گردد توجه بیشتری در هنگام غذا دادن دستی به پرندگان جوان صورت گرفته و غذاهای گرم را حداقل نیم ساعت قبل از در اختیار پرنده گذاشتن در دمای محیط قرار داد.

کلمات کلیدی: طوطی خاکستری آفریقایی، سوختگی چینه دان، فیسچول چینه دان، جراحی

تولید آنتی بادی منوکلونال ضد IgG مرغ (IgY)

مسعود رضا صیفی آباد شاپوری[۱]، محمد رشنو[۱]، مهشید آریا[۲]

۱. بخش پاتوبیولوژی،دانشکده دامپزشکی،دانشگاه شهیدچمران اهواز،اهواز،ایران
۲. بخش زیست شناسی،دانشکده علوم،دانشگاه شهیدچمران اهواز،اهواز،ایران

مقدمه و هدف : آنتی بادی‌های مونوکلونال ابزارهای بسیار قدرتمندی در تحقیقات محققان و زمینه ساز روش‌های نوین در تشخیص و درمان بیماری‌ها می‌باشند. با توجه به گسترش صنعت طیور، نیاز به تولید کیت‌های تشخیصی سرولوژی بیماری‌های طیورو نیز امکان جایگزینی IgG مرغ با IgG پستانداران در کاربردهای بالینی، هدف از مطالعه حاضر، تولید آنتی بادی مونوکلونال ضد IgG مرغ بود.

مواد و روش ها: IgG خالص شده از سرم مرغ برای ایمن سازی موش‌های Balb/c استفاده شد. پس از فیوژن، سلول‌هایی که در محیط انتخابی دارای HAT رشد یافتند بعنوان هیبریدوما در نظر گرفته شدند و از نظر تولید آنتی بادی ضد IgG مرغ مورد غربالگری قرار گرفتند. بدین منظور از روش‌های الایزا و وسترن بلاتینگ استفاده گردید.

نتایج: بر اساس نتایج به دست آمده، کلون هیبریدوما 5B8 قادر به تولید آنتی بادی مونوکلونال ضد IgG بود. برای اطمینان از واکنش آنتی بادی با IgG مرغ و اطلاع از واکنش آنبا زنجیره سنگین یا زنجیر سبک IgG، چگونگی این واکنش با آزمایش وسترن بلاتینگ بررسی شد. . IgG خالص شده مرغ به دو روش غیر احیا و احیا در ژل پلی‌اکریلآمید الکتروفورز شد،در شرایط غیر احیایک باند پروتئینی با وزن مولکولی حدود ۱۸۰ کیلودالتون و در شرایط احیا،IgG بصورت دو باند پروتئینی معرف زنجیرهای سنگین و سبک با وزن‌های مولکولی ۷۰-۶۵ و ۲۵-۲۰ کیلودالتون مشاهده شد.بر اساس آزمایش وسترن بلاتینگمشخص گردید که آنتی‌بادی 5B8 با مولکول کامل IgG در شرایط غیر احیا واکنش می‌دهد. همچنین با انجام آزمایش الایزای غیر مستقیم عملکرد آنتی بادی مونوکلونال بعنوان آنتی بادی ثانویه بررسی شد. جذب نوری حاصل از واکنش این آنتی‌بادی با سرم‌های مرغ‌های غیر آلوده و مرغ های آلوده شده با ویروس آنفلوآنزا نشان داد که این آنتی‌بادی نتایجی قابل مقایسه با کنژوگه تجاری ضد IgG مرغ را نشان داد.

نتیجه گیری: در مطالعه حاضر نتایج به دست آمده از انجام آزمایش ایمونودات بر روی سرم‌های تهیه شده از گونه‌های مختلف پرندگان و پستانداران نشان داد که این آنتی‌بادی، اختصاصی IgG مرغ بوده و یک آنتی‌بادی عملکردی در روش‌های ایمنی به خصوص الایزا می باشد.همچنین این آنتی‌بادی بعنوان جایگزین آنتی‌بادی پلی‌کلونال ضد IgG مرغ و نیز برای تخمین کل محتوای Ig در سرم مرغ به کار می‌رود.

بررسی علائم و میزان شیوع بیش از حد CRD در گله های طیور گوشتی در زاهدان ۱۳۹۳

شقایق پیکانی ثانی،دانشجوی سال پنجم دامپزشکی,ps.shaghayegh@yahoo.com*
مجید امینی،دکترای دامپزشکی
یاسمن درخشان، دانشجوی سال پنجم دامپزشکی
صبا سرگل حسین زاده، دانشجوی سال پنجم دامپزشکی

مقدمهCRD: یک بیماری مزمن تنفسی است که میزبان اصلی آن طیور و بوقلمون می باشد.عامل بیماری مایکوپلاسما گالیسپتیکوم و مایکوپلاسما ساینوویا است.جوجه های مبتلا با سن ۳تا ۵ هفته و علائم کاهش اشتها ،کاهش رشد،صدا های تنفسی،تنفس با دهان باز وترشحات از چشم و بینی مشاهده می شوند.

مواد و روش کار:از روشS.P.A یا آگلوتیناسیون سرم در جوجه های در حال رشداستفاده می شود. یک قطره از سرم خون جوجهرا روی لام قرار داده و آنتی ژن مایکوپلاسما را به آن اضافه می کنیم.اگر بعد از دو دقیقه آگلوتیناسیون صورت گرفت نمونه مثبت است.

در کالبد گشایی جوجه های تلف شده درگیری قسمت فوقانی دستگاه تنفس وترشحات کاتارال در سینوس ها ، نای و کیسه های هوایی مشاهده میشود.

نتیجه و بحث::در ۴ گله با جمعیت ۱۰۰۰۰۰ شیوع بیماری بیست درصد می باشد.دلیل اصلی شیوع فقدان مدیریت در انتقال عمودیCRD و حضور گرد و غباردر محیط است.این بیماری خسارات اقتصادی فراوانیشامل کاهش تولید ،افزایش بیماری های ناشی از E.coli و شکست واکسیناسیون را تحمیل می کند.

کلمات کلیدی:CRD، نژاد گوشتی،مایکوپلاسما گالیسپتیکوم،مایکوپلاسما سینوویا،S.P.A

اثر عصاره نعناع تند در آب بر روی جمعیت اشریشیاکلی های ایلیوم، آنزیم های هضم کننده و سرم در جوجه های گوشتی

هادی حق بین نظرپاک[۱]، علی داورزنی[۲]، زهرا خرقه پوش[۲]، مه نگار اسدی[۲]
۱. استادیار گروه بهداشت و بیماری های آبزیان، دانشکده دامپزشکی، دانشگاه آزاد واحد گرمسار، سمنان، ایران
۲. دانشجوی دکتری حرفه ای دامپزشکی، دانشکده دامپزشکی، دانشگاه آزاد واحد گرمسار، سمنان، ایران

اهداف:این مطالعه به منظور بررسی اثر عصاره ی نعناع تند بر روی آنزیم های هضم کننده، غلظت سرم، لیپوپروتیین، کلسترول، فسفولیپد و فعالیت ضدمیکروبی رودهدر جوجه های گوشتی طراحی گردید

مواد و روش ها:در کل ۱۵۰ جوجه ی ۴ روزه گوشتی نر استفاده شد. ۴ گروه تیمار وجود داشت شامل: کنترل(WET2)، گروهی که ۲ سی سی عصاره نعناع در یک لیتر آب خوراکی دریافت کردند(WET3)، گروهی که ۵ سی سی (WET4) و ۸ سی سی (WET1).

هر گروه تیمار شامل ۴ مرغ با ده پرنده برای هر مرغ بود. رژیم غذایی گوشتی رایج با انرژی و پروتیین یکسان به آنها داده شد. جوجه هایی که تیمار شده بودند از ۴ تا ۴۰ روز نگه داری شدند.

نتایج و نتیجه گیری:در شمارش CFU(تعداد کلنی) *اشریشیاکلی*هیچ تفاوتی بین تیمارها وجود نداشت. نتایج تجربی نشان داد که اختلاف بین تیمارها در آلکالین فسفاتاز، آمیلاز، LDL، HDL قابل چشمگیر نبودند. اما آنزیم لیپاز در تیمار۳درمقایسهباتیمار ۱و ۲ به طور چشمگیری کاهش داشت ($P\leq0.05$). همچنین میزان LDL/HDL در تیمار ۴ به طور چشمگیری در مقایسه با کنترل افزایش پیدا کرده بود. ($P\leq0.05$)

کلمات کلیدی: نعناع تند، اشریشیاکلی، جوجه گوشتی، ایلیوم

الگوی مقاومت ضدمیکروبی جدایه های *سالمونلا* از گله های طیور اطراف اصفهان

هادی حق بین نظرپاک[۱]، علی داورزنی[۲]، سارابراتی[۳]، مهدی حقی تبار[۲]، زهرا خرقه پوش[۲]، مجتبی کوشکی[۲]*
۱. استادیار گروه بهداشت و بیماری های آبزیان، دانشکده دامپزشکی، دانشگاه آزاد واحد گرمسار، سمنان، ایران
۲. دانشجوی دکتری حرفه ای دامپزشکی، دانشکده دامپزشکی، دانشگاه آزاد واحد گرمسار، سمنان، ایران
۳. Ph.D باکتری شناسی، عضو باشگاه پژوهشگران جوان، دانشگاه آزاد واحد اهواز، اهواز، ایران

اهداف :*سالمونلا* یکی از باکتری های پاتوژن در پرندگان می باشد. این باکتری به دلیل اهمیت اقتصادی در صنعت طیور و سلامت انسان بسیار مهم می باشد.تعدادی از سروارهای سالمونلا مثل سالمونلا انتریتیدیس و سالمونلا تیفی موریوم در بین عوامل مهم بیماری های مشترک طبقه بندی می شوند. میزان مقاومت ضدمیکروبی در بین پاتوژن های باکتریایی طیور به طور چشم گیری به دلیل استفاده محتاطانه از عوامل ضدمیکروبی در صنعت طیور افزایش یافته است.

هدف از این مطالعه تعیین الگوی مقاومت جدایه های سالمونلا که اخیرا از مزارع طیور اطراف شهر اصفهان به دست آمدند، بود.

مواد وروش ها :حساسیت ۱۴ جدایه *سالمونلا* ی به دست آمده از ۲۵ مزرعه طیور (در کل ۱۰۰۰ نمونه مدفوعی) اطراف شهر اصفهان برای ۱۲ عامل ضدمیکروبی با استفاده از روش استاندارد دیسک دیفیوژن (روشBauer Kirby) تعیین گردید.

نتایج و نتیجه گیری :همه ی جدایه های *سالمونلا* به فلورفنیکل، دانوفلوکساسین، سیپروفلوکساسین، لووفلوکساسین، نورفلوکساسین و ایمی پنم حساس بودند و همه جدایه ها به کلیستین مقاوم بودند. ۹۰٪ به کربنی سیلین و تتراسایکلین، ۶۰٪ به فورازولیدون و آموکسی کلاو و ۵۰٪ به داکسی سایکلین. همه جدایه ها به حداقل ۳ عامل ضدمیکروبی مقاوم بودند. ۱۰٪ از ایزوله ها مقاومت چندگانه را برای بیش از ۱۴ عامل ضدمیکروبی نشان دادند.

نتایج این مطالعه نشان داد که مقاومت *سالمونلا*های طیور به اکثر عوامل ضدمیکروبی رایج در صنعت طیور گسترده شده و به یک نگرانی در صنعت طیور برای سلامت عمومی تبدیل شده است.

کلیدواژه ها: *سالمونلای* طیور، مقاومت ضدمیکروبی، اصفهان

بررسی اثرات توربوتوکس بر روی پاسخ ایمنی همورال جوجه های گوشتی واکسینه شده علیه بیماری برونشیت عفونی

۱. مهدی رضائی ۲ .سینا عزیزی ۳. نوروز پناهی*
۱.گروه علوم درمانگاهی دانشکده دامپزشکی دانشگاه ازاد اسلامی واحد ارومیه،ارومیه،ایران
۲.دانش اموخته دانشکده دامپزشکی دانشگاه ازاد اسلامی واحد ارومیه،ارومیه،ایران
ایمیل نویسنده مسوول:mehdi217mr@yahoo.com

برونشیت عفونی بعنوان یک بیماری ویروسی آسیب های جدی به صنعت طیور وارد می کند بیماری با علائم تنفسی ،کلیوی ،تناسلیدر گله نمایان می شود .شرایط امنیت زیستی جهت جلوگیری از علائم وتلفات بیماری امری اساسی وضروری است.یکی از راههای پیشگیری از بیماری در گله واکسیناسیون است . هدف از این تحقیق بررسی اثرات تحریکی وتقویتی توربوتوکس بر روی تیتر آنتی بادی های حاصله از واکسن برونشیت در گله های گوشتی می باشد.

تعداد ۱۴۴ قطعه جوجه گوشتی 4،ROSS 308 منفیدر قالب طرح کاملا تصادفی با ۶ تیمار آزمایشی و۳تکرار برای هر گروه جمعا در ۱۸ گروه آزمایشی بادر نظر گرفتن ۸ قطعه جوجه در هر باکس مورد آزمایش قرار گرفتند. توربوتوکس از روز اول بادز های ۲۵۰گرم (گروه یک) ،۵۰۰گرم (گروه دو) ،۷۵۰گرم (گروه سه) ،۱گیلوگرم (گروه چهارم)،۲ کیلوگرم (گروه پنجم)، در اختیار جوجه هاقرار داده شد گروه شش(کنترل) هیچ دارویی دریافت نکرد .نمونه های خونی از هر گروه در روزهای ۲۴و ۳۴ بعد از واکسناسیون برای تعیین تیتر آنتی بادی برعلیه واکسن برونشیت بر اساس تست الیزا و با استفاده از کیت IDEXX جمع اوری گردیدوزن ارگانهای لنفوئیدی (بورس فابریسیوس- طحال)ثبت شد.

نتایج حاصل شده از این تحقیق نشان می دهدکه تفاوت معنی داری ما بین گروهای مورد مطالعه وجود دارد ($P<0.05$). گروه ۲۵۰ ,۵۰۰ و۷۵۰ گرم اثرات تحریکی وتقویتی فشرده ای روی تیتر انتی بادی حاصل از واکسن برونشیت را داشتند.

کلمات کلیدی:برونشیت،توربوتوکس، جوجه،الیزا

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۱. مهدی رضائی ۲ .سینا عزیزی ۳. نوروز پناهی
۱.گروه علوم درمانگاهی دانشکده دامپزشکی دانشگاه ازاد اسلامی واحد ارومیه،ارومیه،ایران
۲.دانش اموخته دانشکده دامپزشکی دانشگاه ازاد اسلامی واحد ارومیه،ارومیه،ایران
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کلمات کلیدی:برونشیت،توربوتوکس، جوجه،الیزا

بررسی اثرات ویتامین E وC بر روی پاسخ ایمنی هومورال جوجه های گوشتی واکسینه شده علیه بیماری بورس عفونی

۱. مهدی رضائی ۲ .بهزاد حاجی زاده
۱.گروه علوم درمانگاهی دانشکده دامپزشکی دانشگاه ازاد اسلامی واحد ارومیه،ارومیه،ایران
۲.دانش اموخته دانشکده دامپزشکی دانشگاه ازاد اسلامی واحد ارومیه،ارومیه،ایران
ایمیل نویسنده مسوول:mehdi217mr@yahoo.com

بیماری بورس عفونی بعنوان تضعیف کننده سیستم ایمنی خسارات اقتصادی عمده ای به صنعت طیور وارد میکند . واکسیناسیون بموقع یکی از مهمترین راههای پیشگیری از بیماری میباشد.هدف از این تحقیق بررسی اثرات تحریکی وتقویتی ویتامین E وCبر روی تیتر آنتی بادی های حاصله از واکسن بیماری بورس عفونی در گله های گوشتی می باشد.

تعداد ۳۰۰ قطعه جوجه گوشتی 4،ROSS 308 منفیدر قالب طرح کاملا تصادفی با ۱۰ تیمار آزمایشی و۳تکرار برای هر گروه جمعا در ۳۰ گروه آزمایشی بادر نظر گرفتن ۱۰ قطعه جوجه در هر باکس مورد آزمایش قرار گرفتند. ویتامین EوCاز روز اول بادز های (2gr/kg vit E group 1) , 0/5gr/kg vit E (group2) ,1 gr/kg vit E (group 3) , 2 gr/kg vit C(group4) , 0/5gr /kg vit C (Group 5) , 1 gr/kg vit C (group 6) , 2 gr/kg vit E+C (group 7) , 0/5 gr/kg vit E+C (group 8) , 1 gr/kg vit E+C (group 9) در اختیار جوجه هاقرار داده شد. گروه 10(کنترل) ویتامین E وCدریافت نکرد .نمونه های خونی اخذ شده از هر گروه در روزهای ۱۹,۱ ,۲۹ , ۴۰ برای شمارش لنفوسیتها و تعیین تیتر انتی بادی مادری وتعیین تیتر آنتی بادی برعلیه واکسن بورس عفونیبر اساس تست الیزاو با استفاده از کیت IDEXXمورد ازمایش قرار گرفتند.

نتایج حاصل شده از شمارش لنفوسیتها و تست الیزانشان می دهدکه ویتامین E وC افزایش پاسخ انتی بادی بر علیه بیماری بورس عفونی را دارد.($P<0.05$).بطور خلاصه همراهی ویتامین EوC با همدیگر پاسخ بهتری را در این تحقیق نشان دادند.

کلمات کلیدی:ویتامین E وC ، جوجه،الیزا ,لنفوسیت

مطالعه تاثیر افزودن آنتی بیوتیک به واکسن زنده بیماری نیوکاسل در تکامل ساختار بافت لمفاوی مرتبط با چشم و برانگیختگی پاسخ پادتن در واکسیناسیون به روش قطره چشمی با آزمون الایزا و HI

سید حامد وزیری[1]، اوستا صدرزاده[1]*، سید مصطفی پیغمبری[2]، مصطفی رفیعیان[1]، حمیدرضا زارع پور[1]
۱) گروه علوم درمانگاهی،دانشکده دامپزشکی دانشگاه آزاد اسلامی واحد گرمسار، گرمسار- ایران
۲) گروه علوم درمانگاهی،دانشکده دامپزشکی دانشگاه تهران، تهران – ایران
* نویسنده ی مسؤول: avestasadr@yahoo.com

اهداف: حضور کانون‌های لنفاوی مرتبط با چشم در نزدیکی محل وارد شدن ویروس زنده واکسن، مهم‌ترین دلایل کارآمدی روش واکسیناسیون قطره چشمی است. وجود آلودگی باکتریایی در محوطه چشم، به دلیل آلودگی هوای سالن‌های پرورش، از عواملی است که به دلیل جذب ویروس‌های زنده واکسن، ممکن است مانع از رسیدن ویروس‌های واکسن به کانون‌های لنفاوی مرتبط با چشم شود. هدف از این مطالعه، کاهش تاثیر منفی آلودگی باکتریایی محوطه چشم برعملکرد ویروس واکسن و در نتیجه پاسخ بهتر علیه بیماری نیوکاسل با مخلوط‌کردن محلول واکسن با یک آنتی‌بیوتیک می‌باشد.
مواد و روش کار: ۳۸۵ قطعه جوجه ی گوشتی نژاد راس ۳۰۸ به طور تصادفی به ۷ گروه مساوی تقسیم شدند: گروه ۱ و ۲: دریافت کننده ی اکسنل به همراه واکسن. گروه ۳ و ۴: دریافت کننده ی پنی سیلین به همراه واکسن. گروه ۵ و ۶: دریافت کننده واکسن بدون آنتی بیوتیک. گروه۷: گروه کنترل واکسن. در روزهای ۱۰،۱۶،۲۳و۳۳، نمونه های خونجمع آوری گردید و توسط آزمون ELISA و HI مورد عیارسنجی پادتن های ضد ویروس بیماری نیوکاسل قرار گرفتند.سپس از بافت لنفاوی ملتحمه‌ی چشم نمونه هایی تهیه و در محلول فرمالین ۱۰٪ جمع‌آوری گردید وبا روش استاندارد هماتوکسیلین- ائوزین مقاطع بافتیرنگ آمیزی شدند وبا میکروسکوپ نوریبررسی شدند.
نتایج و بحث:نتایج بدست آمده از بررسی مقاطع میکروسکوپیک تغییری بافت شناختی در بافت لنفاوی نشان نداد.مطالعه ی ما علی رغم برخی موارد که تفاوت معنی دار بین نتایج پاسخ های پادتنی در گروه های دریافت کننده‌ی دارو به همراه محلول واکسن، با گروه های دریافت کننده‌ی محلول واکسن بدون دارو، مشاهده گردید در نهایت نتوانست پیش فرض خود را تایید نماید. ما دلایل احتمالی برای عدم مشاهده ی تفاوت معنی دارِ قابل قبول، بین نتایج گروه های دریافت کننده‌ی واکسن و دارو با گروه های کنترل دارو قائل هستیم. مهم ترین آن این که، ممکن است شرایط نسبتا پاک یک مطالعه تجربی، با تراکم بسیار کم جوجه ها در اطاق به همراه تهویه خوب، مانع از آن شده باشد که آلودگی باکتریایی محوطه چشم بتواند زمینه مناسب تاثیر مورد انتظار دریافت دارو را فراهم کند. چنانچه نتایج مطالعات دیگری که بر جنبه های مختلف ایمنی و در شرایط مزرعه انجام شوند با نتایجی مشابه این مطالعه همراه باشند می توان چنین نتیجه گرفت که مخلوط کردن دارو با محلول واکسن تاثیری بر نتایج واکسیناسیون علیه بیماری نیوکاسل به روش قطره‌ی چشمی ندارد.

واژه های کلیدی: بیماری نیوکاسل، بافت لنفاوی، قطره چشمی، آنتی بیوتیک، گوشتی.

اثرات سطوح مختلف گندم کامل بر عملکرد تولیدی و سلامت دستگاه گوارش مرغهای تخمگذار بومی خراسان تحت شرایط استاندارد ارگانیک

علی عمارلو، رضا وکیلی، ایمان سلامتیان*، مجتبی کوشکی
Iman.salamatian@gmail.com

به منظور بررسی اثر سطوح مختلف گندم کامل بر کیفیت تخم مرغ، عملکرد و سلامت دستگاه گوارش مرغ تخم گذار بومی خراسان رضوی درشرایط پرورش ارگانیک، آزمایشی در قالب طرح کاملا تصادفی با سه تیمار، سه تکرار و۱۰ مرغ بومی و یک خروس برای هر تکرار انجام گرفت. جیره غذایی بر پایه گندم و سویا تنظیم گردید بصورتی که در تیمار یک کل گندم آسیاب شد، در تیمار دو ۲۰ درصد و در تیمار سه ۳۰ درصد گندم جیره به صورت دانه کامل مورد استفاده قرار گرفت. آزمایش از سن ۱۸ تا ۳۰ هفتگی طی سه دوره ۲۸ روزه انجام شد. نتایج نشان داد که مصرف گندم کامل تأثیر معنی داری بر مصرف خوراک، افزایش وزن مرغ‌ها، درصد تولید، وزن ، وزن توده تخم مرغ، شاخص شکل، ،شاخص زردە، مقاومت پوسته، وزن پوسته تخم مرغ، وزن و ارتفاع زردە، آلودگی به کوکسیدیا، تعداد لاکتوباسیل ها و کلی فرمها نداشت. هرچند که کمترین تعداد کلی فرم و اووسیست و بیشترین میزان لاکتوباسیل در تیمار ۳۰ درصد مشاهده گردید($P<0/05$)، ولی بر ضریب تبدیل خوراک در دوره اول معنی دار بوده و در کل دوره کمترین ضریب تبدیل مربوط به تیمار ۳۰ درصد بود($P<0/05$). همچنین اثر تیمارهای آزمایشی بر عدد هاو، ضخامت پوسته و میزان کلسترول زردە معنی دار بوده است.میزان کلسترول زردە تخم مرغ در پایان دوره سوم در تیمار ۳۰ درصد گندم کامل به طور معنی داری بیشتر از سایر تیمار ها بوده است($P<0/01$). به طور کلی نتایج این پژوهش نشان داد که استفاده از ۳۰ درصد گندم کامل در جیره مرغان تخم گذار بومی خراسان رضوی در شرایط ارگانیک می تواند بر ضریب تبدیل غذایی و کیفیت تخم مرغ تاثیر مفیدی داشته باشد.

ارزیابی شاخص‌های خونی در کبوتران اهلی بطور طبیعی آلوده شده با *مایکوباکتریوماویوم* تحت گونه *اویوم*

کاوه پروندار اسدالهی[1]*، منصور میاحی[1]، غلام حسین خواجه[1]، نادر مصوری[2]، علی رضا راکی[1]*
۱. بخش علوم بالینی، دانشکده دامپزشکی دانشگاه شهید چمران اهواز، ایران
۲. موسسه واکسن و سرم سازی رازی کرج، ایران

هدف:سل پرندگان یکی از بیماری‌های بسیار مهم پرندگان می‌باشد که اکثر گونه‌های پرندگان را می‌تواند مبتلا نماید و عمدتا توسط *مایکوباکتریوماویوم* و *مایکوباکتریومجنانونس* ایجاد می‌شود. ارزیابی فاکتورهای خونی در تشخیص بیماری‌ها بویژه در پرندگان که نشانه‌های بالینی اندکی را نشان می‌دهند از اهمیت زیادی برخوردار است. هدف از این مطالعه مقایسه فاکتورهای خونی کبوتران اهلی بطور طبیعی آلوده شده با *مایکوباکتریوماویوم* تحت گونه *اویوم* (کبوتران مسلول) با کبوتران سالم می باشد.

مواد و روش ها: از ۱۲ کبوتر مشکوک به بیماری سل خون گیری صورت گرفت. همه پرندگان کالبدگشایی گردیدند و از ارگان‌های دارای جراحت جهت کشت مایکوباکتریوم و آزمایش هیستوپاتولوژی نمونه برداری صورت گرفت. آزمایش PCRجهت تشخیص *مایکوباکتریوماویوم* تحت گونه *اویوم* با پرایمرهایIS1245،16S rRNAو IS901 انجام گرفت.

برای هر نمونه خون شمارش کل گلبول‌های قرمز و سفید توسط روش نات و هریک با استفاده از لام نئوبار صورت گرفت. همچنین شمارش تفریقی گلبول‌های سفید با استفاده از گسترش خونی بروی لام و توسط رنگ آمیزی گیمسا صورت گرفت. میزان هماتوکریت توسط روش میکروهماتوکریت اندازهگیری گردید. همچنین میزان هموگلوبین توسط *اسپکتروفتومتر*و روش سیانومتهموگلوبین اندازه گیری گردید.میزان هموگلوبین متوسط گلبول قرمز (MCH)، غلظت متوسط هموگلوبین گلبول قرمز (MCHC) و حجم متوسط گلبول قرمز (MCV) با توجه به تعداد گلبول های قرمز، میزان هموگلوبین و هماتوکریت محاسبه گردید. جهت تجزیه و تحلیل آماری میزان فاکتورهای خونی کبوتران مسلول با کبوتران سالم مورد مقایسه قرار گرفت.

نتایج و بحث: یافته‌های هیستوپاتولوژی، کشت و تعیین هویت مولکولی توسط PCRآلودگی همه ۱۲ کبوتر را به *مایکوباکتریوماویوم* تحت گونه *اویوم* تایید نمود.میزان تام گلبول‌های سفید خون، هتروفیل، لنفوسیت و مونوسیت در پرندگان آلوده بطور معنی داری در مقایسه با گروه کنترل بالاتر بود، اما میزان هماتوکریت، هموگلوبین، هموگلوبین متوسط گلبول قرمز و غلظت متوسط هموگلوبین گلبول قرمز در پرندگان آلوده در مقایسه با گروه کنترل به طور معنی داری کمتر بود.

لکوسیتوز و آنمی مشخص در پرندگان آلوده نشان می‌دهد که ارزیابی پارامترهای خونی می‌تواند بعنوان یک تست تشخیصی غیر اختصاصی در سل پرندگان مورد استفاده قرار گیرد.

لغات کلیدی: سل پرندگان، *مایکوباکتریوماویوم* تحت گونه *اویوم*، کبوتران اهلی، شاخص‌های هماتولوژی،لکوسیتوزیس و آنمی.

بررسی میزان انتقال آنتی بادی مادری بیماری نیوکاسل در یک گله مرغ مادر نژاد راس ۳۰۸ به نِتاج آن در سنین مختلف توسط آزمونHI

جواد نوروززاده [1]،سعید چرخکار [2]، هادی حق بین نظرپاک [3]
[1] دانشجوی سال آخر دامپزشکی دانشگاه آزاد اسلامی واحد گرمسار
[2] استادیار گروه علوم بالینی بخش بیماری های پرندگان دانشکده دامپزشکی دانشگاه آزاد اسلامی واحد علوم و تحقیقات تهران
[3]استادیار گروه علوم بالینی بخش بیماری های پرندگان دانشکدهدامپزشکی دانشگاه آزاد اسلامی واحد گرمسار

هدف:میزان انتقال آنتی بادی مادری بیماری نیوکاسل به نتایج درپرورش جوجه ها واجد اهمیت میباشد.آگاهی از مقدار انتقال میتواند در طراحی واکسیناسیون مفید واقع شود.

موادوروش کار:جهت بررسی این موضوع ازیک فارم مرغ مادر گوشتی نژاد راس ۳۰۸ دراستان مازندران، ۵ بار و هربار به فاصله ۵ هفته از ۲۰ مرغ مادر بطورتصادفی خونگیری بعمل امد ومیزان عیارانتی بادی بیماری نیوکاسل آنها توسط ازمونHI در آزمایشگاه موردراندازه گیری قرارگرفت .

همچنین ۳ هفته بعد،ازجوجه های یکروزه حاصل ازآن فارم درجوجه کشی،از ۲۰ جوجه بطورتصادفی خونگیری صورت گرفت ومیزان عیار انتی بادی بیماری نیوکاسل آنها نیز توسط ازمون HIاندازه گیری بعمل امد.سپس عیار انها مورد ارزیابی قرارگرفت.

نتایج :بررسی نتایج نشان میدهدکه درصد انتقال عیار آنتی بادی مادری بیماری نیوکاسل به جوجه ها درگله سالم مرغ مادر راس ۳۰۸ بین ۸۰ تا ۸۵ درصداست.همچنین با افزایش سن گله مرغ مادر،تغییر معنی داری دردرصد میزان انتقال آنتی بادی مادری بیماری نیوکاسل مشاهده نشد.

کلمات کلیدی :بیماری نیوکاسل، آنتی بادی مادری،آزمون ممانعت ازهماگلوتین اسیون (HI)، جوجه،مرغ مادر

بررسی میزان آلودگی پوسته و زرده‌ی تخم‌مرغ به اشرشیا کلی سالمونلا و استافیلوکوکوس آرئوس درمزرعه مرغ مادرگوشتی

ویدا پیرزمانی*[1]، مجتبی کوشکی[2]، علی داورزنی[2]، حسن حسن نیا[2]
۱. استادیار گروه بهداشت موادغذایی، دانشکده دامپزشکی چمران، اهواز، ایران
۲.دانشجوی مقطع دکتری دامپزشکی، دانشکده دامپزشکی دانشگاه آزاد اسلامی واحد گرمسار، گرمسار، ایران

از بین مواد غذایی با منشاء دامی تخم مرغ به دلیل نوع استفاده در تولیدات غذایی مانند :سس‌ها، چاشنی‌های غذایی، بستنی و انواع غذاها که ممکن است به صورت خام و یا نیم پز مورد استفاده قرار گیرد همواره می‌تواند به صورت بالقوه منشأ آلودگی و انتقال بیماری‌ها به انسان باشد.
در این مطالعه با مراجعه به یک واحد مرغ مادر گوشتی و نمونه برداری طی چهار مرحله جمعاً به تعداد ۱۲۴ عدد تخم مرغ (۶۲ عدد تخم مرغ آلوده به مدفوع و نیز ۶۲ عدد تخم مرغ گند زدایی شده با گاز فرمآلدهید) انجام شد. نمونه ها در هر نوبت در کیسه های نایلونی استریل قرار داده شده و در کوتاهترین زمان به آزمایشگاه میکروبیولوژی دانشکده دامپزشکی دانشگاه شهرکرد ارسال گردید.
ابتدا سطح تخم مرغ ها در 10ccمحیط PBS غوطه ور شده و 1cc از این محیط بر روی محیط مکانکی آگار (MAC)و 1cc بر روی محیط تریپتک سوی آگار(TSA)کشت داده شد و در دمای ۳۷/۵ درجه سانتیگراد به مدت ۲۴ ساعت انکوبه گردید کلنی باکتری بر اساس شکل انتخاب ودر محیط نوترینت آگار(NA)خالص سازی شده و در رنگ آمیزی گرم، باسیلهای گرم منفی و کوکسی های گرم مثبت مشخص شدند.
در نتایج حاصل از بررسی آلودگی باکتریایی تخم مرغ های مورد آزمایش باکتری های کلی فرم مدفوعی اشیرشیا کلی، استافیلوکوک اورئوس و سالمونلا از زردۀ ۲ گروه تخم مرغ ها (پوسته آلوده و تمیز) جدا نگردید. زرده ۳ تخم مرغ با پوسته آلوده، به باکتری های دیگری آلوده بودند. پوسته هر ۶۲ (۱۰۰٪) نمونه تخم مرغ با پوسته آلوده به کلی فرم مدفوعی و اشریشیا کلی آلوده شده بودند.
استافیلوکوکوس اورئوس از 42(67.7%) نمونه تخم مرغ با پوسته آلوده جدا گردید. اشریشیا کولی و استافیلوکوکوس اورئوس بترتیب در پوسته 7(11.2%) ، 4 (6.4%) و 9 (14.7%) از تخم مرغ های پوسته تمیز (گندزدایی شده) مشاهده شد.
کلمات کلیدی: تخم مرغ، اشرشیاکلای، سالمونلا، استافیلوکوکوس اورئوس، مرغ مادر گوشتی

تشخیص مولکولی آدنوویروس، سیرکوویروس و هرپس ویروس نسب کبوتران درکبد لاشه های کبوتران ارجاعی به کلینیک دامپزشکی دانشگاه فردوسی مشهد توسط واکنش چندگانه زنجیره ای پلیمراز

امید بهروزی نسب

کبوتر از جمله پرندگانی است که علاوه براینکه درفرهنگ ماجایگاه ویژه ای دارد،دردین اسلام نیز بدان توجه شده است. عوامل بیماریزای بسیاری این پرنده را دچار بیماری میکند که ازجمله ی آنها ویروسها هستند. دراین تحقیق به سه ویروس مهم کبوتر بانامهای آدنوویروس،سیرکو ویروس وهرپس ویروس پرداخته شده است. این ویروسها در مجموع درسندرم بیماری کبوتران جوان نقش ایفا میکنند،این سندرم با علائم عمومی اسهال، استفراغ، بی حالی و افسردگی بروزکرده وعلامت اختصاصی وپاتوگنومیک ندارند. یکی از راه های تشخیصی ابتلای کبوتر به این بیماری،استفاده ازآزمایش واکنش زنجیره ای پلیمراز است که دراین تحقیق ازاین روش استفاده گشت. نمونه گیری این تحقیق طی چهار سال، از تعداد ۷۱ نمونه از لاشه های کبوتران ارجاعی به بیمارستان دانشکده دامپزشکی دانشگاه فردوسی مشهد انجام و ژنوم نمونه ها طبق پروتکل های مربوطه استخراج شد. در این تحقیق برای اولین بارحضور آدنوویروس در۱۵/۵٪،سیرکوویروس در۱۰۰٪،وهرپس ویروس در۲۲/۵٪ ازکبوتران مورد آزمایش در مشهد به اثبات رسید. طبق اطلاعات نویسنده، این اولین گزارش در ایران است. تعیین درصددقیق شیوع این ویروسها درایران،نیازمندکارهای تحقیقاتی با جامعه آماری بزرگتر وازسراسرکشوراست.
کلمات کلیدی: آدنوویروس، سیرکوویروس، هرپس ویروس،واکنش چندگانه زنجیره ای پلیمراز،کبوتر،مشهد

بررسی شیوع آرتریت عفونی ناشی از استافیلوکوکوس آرئوس مقاوم به متی سیلین در لاشه های ارجاعی از مزارع پرورش مرغ گوشتی به درمانگاههای دامپزشکی شهرستان سقز در سالهای ۲۰۱۳ الی ۲۰۱۵

حجت علیزاده ممقانی۱ ،محمد هادی کیانی۲ ، خلیل عزیزیان۳ ، کامبیز وثوقی ۴، سعدی امینی

۱-آزمایشگاه تشخیص دامپزشکی رویانا،سقز،کردستان،ایران، ۲-دانشگاه آزاد اسلامی ، واحد علوم و تحقیقات،باشگاه پژوهشگران جوان ونخبگان ، تهران ، ایران، ۳-دانشگاه علوم پزشکی ، گروه باکتری شناسی ، تبریز ، ایران، ۴-درمانگاه دامپزشکی ، سقز ، کردستان ، ایران ۵- آزمایشگاه شبکه دامپزشکی ، سقز،کردستان

پست الکترونیک نویسنده مسؤول مقاله : Rooyanavetlab@yahoo.com

مواد و روش کار :پس از بررسی لاشه ها در درمانگاه ، از ۴۰ مزرعه مرغ گوشتی ۳۰ الی ۵۵ روز ، تعداد ۲۰۰ نمونه مفصلی اخذ گردید . از کارگران ۴۰ مزرعه گوشتی بصورت داوطلبانه سواپ بینی اخذ شد . ۲۹ نفر از آنها نشانه های زکام و سرفه داشته و ۱۱ نفر بدون هرگونه نشانه ای بودند . سواپها در ابگوشت قلب و مغز بدون مکمل های آنتی بیوتیکی انکوبه شده و بعد از یک شب انکوباسیون در ۳۷دمای درجه سانتی گراد یک میکرولیتر از ابگوشت در محیطهای مانیتول سالت آگار ، بردپارکر آگار ، بلادآگار ، مک کانکی آگار کشت و بمدت ۴۸ ساعت در ۳۷ درجه سانتی گراد انکوبه شدند . کلنی های گرد ، صاف ، بتا همولیتیک با قطر ۳-۱ میلی متر و پیگمانهای سفید تا زرد انتخاب و بوسیله رنگ آمیزی گرم رنگ آمیزی و بوسیله تستهای بیوشیمیائی همچون کاتلاز ، گواکولاز لوله ای شناسائی شدند . تست حساسیت آنتی بیوتیکی با تکنیک انتشار دیسک توسط ۲۴ دیسک انتی بیوتیکی تهیه شده از شرکت مست انجام گرفت .

نتیجه گیری و بحث :در این مطالعه ، درصد شیوع استافیلوکوکوس آرئوس کواگولاز مثبت مقاوم به متی سیلین در جوجه های مبتلا به آرتریت عفونی وکارگران مرغداری ، به ترتیب ۹۴ و ۷۲/۵ درصد ثبت گردید . فقط ۶ درصد نمونه های جوجه های گوشتی ایکولای مثبت بودند . ۲۷/۵ درصد نمونه ها کواگولاز منفی بودند . استافیلوکوک حساس به متی سیلین از کارگران بدون نشانه های بالینی جدا گردید . تست آنتی بیوگرام نشان داد که استافیلوککهای مقاوم به متی سیلین جدا شده به ترتیب به اگزاسیلین ، پنی سیلین ، کلوگزاسیلین ، آموکسی سیلین ، آمپی سیلین ، سفاپروزون ،سفوکسیتین ، تتراسایکلین ، اکسی تتراسایکلین ، کلرتتراسایکلین ، داکسی سایکلین وتیکوپلانین مقاوم بودند وجدایه ها به ترتیب به کلرامفنیکل ، کلیندامایسین ، لینکومایسین ، سفتریاکسون و اریترومایسین حساسیت متوسط داشتند و جدایه ها به ترتیب به جنتامایسین ، کوتریموکسازول ،ریفامپین ، سیپروفلوکساسین ،آگومنتین ، فوزیدیک اسید و ونکومایسین حساس بودند .شیوع بالای استافیلوککهای مقاوم به متی سیلین در جوجه های گوشتی و کارگران در این مطالعه ، عفونت متقاطع از جوجه ها به کارگرانی که تماس فیزیکی با جوجه ها را دارند پیشنهاد میدد وبدلیل مقاومت بالا در برابر تعداد زیادی از آنتی بیوتیکها ی رایج تست آنتی بیوگرام قبل از درمان داروئی و مطالعات بیشترهمچون روش PCR ضروری بوده وبیوسکیوریتی پیشنهاد میگردد .

کلمات کلیدی :آرتریت عفونی ، گوشتی ، استافیلوکوکوس آرئوس ، مقاوم به متی سیلین ، حساس به متی سیلین ، سقز ، کردستان ، ایران .

اثر سرکه سیب محلی و سرکه تجاری بر روی رشد، پارامترهای سرمی و هیستوپاتولوژی کلیه در جوجه های گوشتی با جیره حاوی کلسیم بالا

امیرحسین اصل نجاری[۱،]، کرامت اساسی[۱]، فاطمه نمازی[۲]، سعید مخیری[۱]، محسن کلانتری[۳]، نگین حاتمی نصار[۴]، حسین درویشیان[۴]، محسن غریب نواز[۴]*

۱گروه علوم درمانگاهی، بخش طیور دانشکده دامپزشکی دانشگاه شیراز ۲گروه پاتوبیولوژی، بخش پاتولوژی دانشکده دامپزشکی دانشگاه شیراز ۳گروه علوم درمانگاهی، بخش کلینیکال پاتولوژی دانشکده دامپزشکی دانشگاه شیراز ۴دانشجویان دکترای حرفه ای دامپزشکی دانشکده دامپزشکی دانشگاه شیراز

در این مطالعه، در جوجه های گوشتی ای که نسبت کلسیم به فسفر جیره شان غیر متعادل بود، اثر سرکه سیب محلی، سرکه تجاری و ترکیب تجاری اسزول پلاس بر روی رشد، ضایعات کلیوی و یافته های سرولوژی مورد ارزیابی قرار گرفت. برای این منظور ۱۰۰ قطعه جوجه یکروزه تا سن ۱۳ روزگی با جیره بالانس بزرگ شدند و سپس در قالب ۵ گروه ۲۰ تایی تقسیم بندی شدند. گروه ها به ترتیب عبارت بودند از: ۱) گروه کنترل منفی با جیره بالانس، ۲) گروه کنترل مثبت با جیره حاوی نسبت کلسیم به فسفر ۸ برابر بدون دریافت سرکه، ۳) گروه درمان با سرکه سیب محلی ۳میلی لیتر در لیتر، ۴) گروه درمان با سرکه تجاری ۳میلی لیتر در لیتر، ۵) گروه درمان با اسزول پلاس نیم میلی لیتر در لیتر. اسیدیته و PH سرکه سیب محلی، سرکه تجاری و اسزول پلاس به ترتیب عبارت بودند از ۴/۶۸، ۳/۸۵ ؛ ۴/۴۱، ۳/۶ ؛ ۴۹/۴۱، ۲/۷ . پس از ۲۰ روز دریافت جیره غیرمتعادل و مشاهده شروع تلفات، جیره به حالت تعادل برگردانده شده و درمان با سرکه های ذکر شده به مدت هفت روز ادامه یافت. وزن کشی قبل و بعد از درمان انجام گردید. نمونه برداری از کلیه ها و رنگ آمیزی هماتوکسیلین ائوزین جهت ارزیابی هیستوپاتولوژی انجام شد. برای اندازه گیری اسید اوریک، کلسیم و فسفر سرمی پرندها از فتومتر استفاده گردید. نتایج وزن کشی حاکی از اختلاف معنی دار بین گروه (۱) کنترل منفی با سایر گروههای مورد آزمایش بود ولی اختلاف معنی داری بین گروه های درمانی با انواع سرکه و گروه کنترل مثبت مشاهده نشد. کالبد گشایی و مقاطع هیستوپاتولوژی کلیه فاقد ضایعات ماکروسکوپی و میکروسکوپی بودند. یافته های سرولوژیک کاهش معنی دار میزان اسیداوریک سرمی را قبل از درمان در گروه های با جیره حاوی کلسیم بالا نشان داد ولی پس از اصلاح جیره و اتمام دوره درمانی اختلاف معنی داری بین کل گروه ها مشاهده نگردید. میزان کلسیم سرم در گروه های حاوی کلسیم بالای جیره به طور معنی داری بیش از گروه کنترل منفی بود و پس از اصلاح جیره و شروع درمان اختلاف معنی داری بین گروه ها مشاهده نگردید. فسفر سرمی در گروه های با کلسیم بالای جیره کمتر از گروه کنترل منفی بود و پس از اصلاح جیره تفاوت معنی دار تنها بین گروه (۲) کنترل مثبت و گروه (۴) سرکه تجاری مشاهده گردید. نتیجه گیری این که نسبت بالای کلسیم به فسفر موجب کاهش وزن و تغییر فاکتورهای سرمی گردید ولی ضایعه ای در کلیه ایجاد نکرد و درمان با سرکه های نام برده شده نتوانست تغییرات وزنی یا سرمی معنی داری را ایجاد کنند.

کلمات کلیدی: سرکه سیب، جیره گوشتی، ضایعات کلیوی، اسیداوریک سرم، کلسیم و فسفر سرمی

گزارشی از عفونت کلستریدیایی و استافیلوکوکی در یک مزرعه پرورش شترمرغ در استان فارس

امیرحسین اصل نجاری[1*]، نجمه مصلح[1]، حماد شفیعی تفتی[1]، آزاده زهرا فاطمی[2]
۱. گروه علوم درمانگاهی، بخش طیور دانشکده دامپزشکی دانشگاه شیراز
۲. گروه پاتوبیولوژی، بخش میکروبیولوژی دانشکده دامپزشکی دانشگاه شیراز

گزارش حاضر توصیفی از مرگ و میر ۲۰ درصدی را در یک مزرعه شترمرغ استان فارس ارائه می دهد. شترمرغ های درگیر و تلف شده به بخش طیور دانشکده دامپزشکی دانشگاه شیراز ارجاع داده شدند. شکایت پرورش دهنده تلفات کامل جوجه های ۲ الی ۳ ماهه با علایم پیش از مرگ بی اشتهایی و عدم هوشیاری بود. در معاینه بالینی خروج مایعات سبز رنگ از دهان و مدفوع آبکی و افسردگی در پرنده دیده شد. در کالبدگشایی دستگاه گوارش خونریزی پتشی روده کوچک مخصوصا در دوازدهه و نیز پتشی در برخی لاشه ها بر روی لوزالمعده دیده شد. در دستگاه قلبی عروقی خونریزی های پتشی روی اپیکارد و خونریزی های اکیموتیک در محل پایک های دریچه های قلبی وجود داشت. در دستگاه تنفسی التهاب کیسه های هوایی و چرک خشک پنیری در داخل کیسه های هوایی دیده شد. در دستگاه عصبی پرخونی و خونریزی بر روی مخچه مشاهده گردید. کلیه ها در دستگاه ادراری پرخون و ملتهب بودند. آزمایشات پاراکلینیکی از جمله لام مرطوب و رنگ آمیزی گرم از روده کوچک و نیز کشت از کبد و قلب انجام شد. نتایج آزمایشات حضور فراوان کلستریدیاهای باسیلی گرم مثبت را دید میکروسکوپی نشان داد. در محیط های کشت کبد و قلب باکتری استافیلوکوس به شکل خالص جا گردید. باکتری استاف جدا شده در محیط کشت بلاد، همولیتیک نبوده و نسبت به آنتی بیوتیک پنیسیلین مقاوم بود. کشت آنتی بیوگرام حساسیت باکتری را به آنتی بیوتیکهای جنتامایسین و لینکواسپکتین نشان داد. نتیجه اینکه فاکتورهای مستعد کننده موجب تشدید عفونت های کلستریدیایی و استافیلوکوکی شده و در گزارش حاضر نقش عفونت استافیلوکوکوس در میزان مرگ و میر شترمرغ ها قابل توجه است.

کلمات کلیدی: استافیلوکوکوس، کلستریدیوم، شترمرغ

تاثیر ال-کارنیتین بر میزان تلفات طیور گوشتی تحت استرس گرمایی

مظفر حاجی جعفری انارکی[1]، مهرداد احمدی خلیلی[2]
۱. رزیدنت بیماری های طیور دانشکده دامپزشکی دانشگاه آزاد اسلامی واحد علوم و تحقیقات
۲. دانش آموخته دکترای حرفه ای دامپزشکی از دانشگاه آزاد اسلامی واحد گرمسار

ال-کارنیتین یک ماده مغذی شبیه ویتامین ها است. این ماده به مقدار اندک و ناچیز در بدن حیوانات از دو اسید آمینه ضروری متیونین و لیزین در کبد و کلیه سنتز می شود. وجود ال-کارنیتین برای متابولیسم و حرکت اسیدهای چرب در داخل سلول ها ضروری است. ال-کارنیتین در مرغان گوشتی باعث بهبود ضریب تبدیل، افزایش وزن، کاهش ذخیره سازی چربی و تسهیل استفاده از چربی های موجود در جیره غذایی می گردد و مقاومت طیور را در مقابل استرس های محیطی و فیزسولوژیکی بالا میبرد. هدف از مطالعه حاضر پی بردن به نقش ال-کارنیتین در کاهش میزان طلفات در جوجه های گوشتی تحت استرس گرمایی می باشد. تعداد ۲۰۰ قطعه جوجه گوشتی راس ۳۰۸ از مادران مشابه انتخاب و به دو گروه مساوی ۱۰۰ قطعه ای تقسیم شدند. هر دو گروه تحت شرایط یکسان پرورشی به مدت ۴۲ روز پرورش یافتند. دمای پرورش هر دو گروه به منظور قرار دادن آن ها تحت استرس گرمایی ۴ درجه بالاتر از جدول استاندارد راس ۳۰۸ با توجه به سن آنها اتخاذ گردید. گروه اول در تمام طول پرورش از آب آشامیدنی فاقد ال-کارنیتین تغذیه گردید در حالیکه گروه دوم در سراسر طول پرورش از آب آشامیدنی حاوی ترکیب ال-کارنیتین تغذیه گردید. مقدار تلفات در هر دو گروه به صورت هفتگی ثبت گردید. در پایان هفته ششم پرورش گروه دوم به میزان ۲ درصد تلفات کمتری نسبت به گروه اول داشت. نتیجه مطالعه حاضر نشان می دهد که تغذیه طیور تحت استرس حرارتی با ترکیب ال-کارنیتین می تواند در میزان تلفات اثر گذاشته و باعث کاهش تلفات گردد.

انگل های کبوترهای اهلی (*Columba liviadomestica*) در شهرستان ایرانشهر

*داود انوری[۱]، صبا سرگل حسین زاده[۲] **
[۱] دکتر دامپزشک، ایرانشهر، ایران
[۲] دانشجوی دکترای حرفه ای دامپزشکی، دانشکده دامپزشکی، دانشگاه زابل، زابل، ایران
ایمیل نویسنده مسؤول: sabasargol@yahoo.com

مقدمه و هدف:کبوترها در همه جای این گیتی پراکنده بوده و رابطه خیلی نزدیکی با انسان دارند. کبوترها صدها سال پیش اهلی گشته اند. آنها مدت های زیادی به عنوان منبع غذایی، حیوان خانگی یا فرهنگی و نمادهای دینی مورد استفاده قرار گرفته اند. کبوترها به عنوان مخزن یا حامل هم نقش دارند، بنابراین آنها منبع مهمی از آلودگی برای پرندگان دیگر بوده به طوری که عامل انتشار انگل های مشترک هستند. هدف از بررسی حاضر تعیین میزان شیوع آلودگی به *Trichomonas*gallinae، *Haemoproteus Columbia* و انگل های خارجی (*Columba domestica*) کبوترهای شهرستان ایرانشهر می باشد.

مواد و روش کار: این بررسی بر روی تعداد ۲۰ کبوتر در طول مدت تابستان سال ۱۳۹۴ در شهرستان ایرانشهر واقع در جنوب شرق ایران انجام پذیرفت. سوآب های ناحیه دهانی-حلقی از تمام کبوترها اخذ گردید. همچنین نمونه های خون از ورید بالی اخذ و و گسترش های نازک تهیه گردید. تمامی گسترش ها توسط گیمسا رنگ آمیزی گردید و با روغن امرسیون زیر میکروسکوپ نوری مورد بررسی قرار گرفت. شپش های جونده و *Pseudolynchiacanariensis*نیز توسط بررسی ماکروسکوپیک جمع آوری گردید.

نتایج: از تعداد ۲۰ نمونه سوآب دهانی-حلقی ۷ نمونه(۳۵درصد) برای تک یاخته *تریکوموناس گالینه* مثبت بودند. در گسترش های خونی *هموپروتئوس گالینه* در ۸ گسترش(۴۰ درصد) شناسایی گردید. آلودگی با *Pseudolynchia*و شپش های جونده به ترتیب ۳(۱۵ درصد) و ۴(۲۰ درصد) مورد مشاهده گردید. میزان آلودگی با این انگل در جهان بسیار متفاوت است. این تفاوت ممکن است در ارتباط با تفاوت های جغرافیایی و تفاوت در عادات تغذیه ای این پرندگان باشد.

واژگان کلیدی: انگل ها، کبوترها، ایرانشهر

کوکسیدیوز در بلدرچین ژاپنی (*Coturnix coturnix japonica*): تشخیص و درمان عفونت طبیعی در یک فارم پرورشی تجاری

منیره خردادمهر، رویا شهبازی؛ وحیدرضا رنجبر*
گروه پاتوبیولوژی دانشکده دامپزشکی دانشگاه تبریز
***نویسنده مسؤول: R.shahbazi91@ms.tabrizu.ac.ir**

هدف: بیماری کوکسیدیوز یک بیماری انگلی تک یاخته ای شایع در بسیاری از پرندگان اهلی می باشد که همراه با انتریت و اسهال خونی می باشد. شدت بیماری به فاکتورهای مختلفی مربوط می باشد که از آن جمله می توان به تعداد اووسیست خورده شده، استرین کوکسیدیا، شرایط محیط، جایگاه تکامل انگل در بدن میزبان و سن میزبان اشاره کرد. در مطالعه حاضر، یک عفونت حاد طبیعی کوکسیدیوز در یک فارم بپرورش بلدرچین ژاپنی با ۸۰٪ واگیری و ۳۰٪ تلفات تشخیص داده شد.

روش کار: در پرندگان بیمار علایم بالینی مشاهده شده شامل اسهال خونی، ضعف و رنگ پریدگی صورت بود. به منظور تشخیص دقیق بیماری، علاوه بر آزمایش مدفوع (روش شناورسازی و سپس نگهداری اووسیست ها در دی کرومات پتاسیم)، کالبدگشایی بر روی ده لاشه تازه تلف شده انجام شد و نمونه های بافتی مناسب از بافت روده با اندازه های ۲ سانتی متر، به منظور مشاهده مراحل مختلف تکامل انگل، گرفته شد و در فرمالین بافر ۱۰٪ فیکس و بعد از تهیه لام به روش روتین و رنگ آمیزی هماتوکسیلین و ائوزین، مطالعات هیستوپاتولوژی انجام شد. قابل ذکر است که بعد از انجام کالبدگشایی، درمان پرندگان بیمار با داروی سولفاکلوزان با دور یک گرم در لیتر به مدت سه روز تجویز شد که باعث درمان موفق و بهبودی موثر پرندگان مبتلا شد.

نتایج و نتیجه گیری: در آزمایش مدفوع، تعداد بسیار زیادی اووسیست ایمریا مشاهده شد. در کالبدگشایی لاشه ها، خونریزی متوسط در بافت روده دیده شد. در مطالعات پاتولوژی، مراحل مختلف انگل در بافت روده کوچک مشاهده شد که بیشتر در قسمت ویلی ها حضور داشتند. ضایعات پاتولوژیک نیز بیشتر در قسمت مخاط روده کوچک ایجاد شده بود که جایگزینی و تکثیر انگل در این قسمت، مسبب ایجاد تغییرات ساختاری و عملکردی در پرندگان بیمار شده بود که در نهایت منجر به تخریب مخاط روده و کاهش قدرت جذب آن می شود. در مطالعه حاضر، با توجه به علایم بالینی، نتایج آزمایش مدفوع، مشاهدات کالبدگشایی و مطالعات هیستوپاتولوژی، تشخیص نهایی بیماری، کوکسیدیوز حاد می باشد که یک بیماری قابل پیشگیری و درمان پذیر در بلدرچین ژاپنی می باشد.

واژهای کلیدی: کوکسیدیوز، بلدرچین ژاپنی، اووسیست، عفونت طبیعی

تشخیص و درمان عفونت آسپرژیلوس در یک گله شترمرغ

ایرج کریمی[1] _میلاد رجبی[2]* _امیر حاتمی[2] _حسین عباسی[2]
[1]دانشیاربخش پاتوبیولوژی دانشکده دامپزشکی دانشگاه شهرکرد، شهرکرد، ایران
[2]دانشجوی دوره دامپزشکی، دانشکده دامپزشکی دانشگاه شهرکرد، شهرکرد، ایران
*ایمیل نویسنده مسؤول:milad.vet91@gmail.com

هدف:آسپرژیلوس یک عفونت قارچی است که عمدتا توسط آسپرژیلوس فومیگاتوس و فلاووس ایجاد می شود که از سال ۱۸۱۵ شناسایی شده است که عموما مسیر تنفسی را درگیر می کند.عفونت های تنفسی متعددی توسط آسپرژیلوس در شترمرغ گزارش شده است.هدف از مطالعه حاضر،گزارش یافته های کالبدگشایی آسپرژیلوس و ارزیابی درمان متعاقب می باشد.

مواد و روش کار:در شهریور ماه سال ۹۲،در یگ گله ۱۵۰ راسی شترمرغ، ۴ راس شترمرغ مرده ۷ماهه به بخش بیماری های طیور دانشکده دامپزشکی دانشگاه شهرکرد ارجاع داده شدند.تاریخچه و علائم لاشه ها شامل:موریختگی ناحیه سر و اطراف چشم ها،غش طولانی مدت،افتادن و مرگ بود.تعدادی از کلاغ های اطراف مزرعه پرورش نیز علائم مشابهی داشتند. درکالبد گشایی، کپک قارچی با قطر ۳-۴ سانتی متر در کیسه هوایی سمت چپ، نودول های سفید متمایل به خاکستری باقطر ۱-۲ میلی متر در ریه چپ و پرده جنب، ضخیم شدگی کیسه هوائیسمت چپ و تورم و التهاب روده ها یافت شد. در آزمایش مستقیم بوسیله محلول هیدروکسید پتاسیم، فرم فعال میسل های قارچی مشاهده شد. نمونه های حاصله از پرده جنب، ریه، کیسه هوائی و ژژنوم در بافر ۱۰٪ فرمالینفیکس شدند و به آزمایشگاه هیستوپاتولوژی دانشگاه شهرکرد جهت آزمایشات معمول ارسال شدند.

یافته ها و نتیجه گیری:برای ارزیابی هیستوپاتولوژی، مقاطع بافتی با روش رنگ آمیزی هماتوکسین ائوزین و شیف پریودیک اسید رنگ آمیزی شدند. در زیر میکروسکوپ: نشت فیبرین،نفوذهتروفیل ها و سلول های تک هسته ای و سازماندهی ترشحات فیبرینی در کیسه هوائی، پرخونی شدید در ریه و گرانول های کوچک در پرده جنب مشاهده شد. مراکز گرانول دارای نکروز پنیری که به وسیله سلول های غول پیکر، ماکروفاژها، لنفوسیت ها و پلاسماسل ها احاطه شده بود.اطراف کانون های نکروزه نیز، تشکیل بافت پیوندی مشاهده شد. در رنگ آمیزی شیف پریودیک اسید از نواحی نکروزشده، مقاطع عرضی میسل های قارچی مشاهده گردید. بر اساس تاریخچه، یافته های کالبدگشایی و آزمایشات هیستوپاتولوژی، ضایعات به عنوان آسپرژیلوس تنفسی تشخیص داده شدند. داروی ایتراکونازول با دوز ۱۰ میلی گرم به ازای هر کیلوگرم وزن بدن به مدت یک هفته برای پرنده های دارای علائم مشابه در مرزعه پرورش تجویزگردید. پاسخ به روند درمانی بسیار خوب ارزیابی شد.

کلیدواژه ها: آسپرژیلوزیس، شترمرغ، شیف اسید پریودیک

مطالعه ی مقایسه ای تاثیرنژاد و روش واکسیناسیون در برانگیختگی پاسخ پادتن به واکسن بیماری نیوکاسل در بوقلمون‌های تجاری با آزمون الایزا و HI

سید علی رضا اسحاق نیا[1]، اوستا صدرزاده[1]*، سعید چرخ کار[2]، سید حامد وزیری[1]، رسول طحانچی[1]
۱) گروه علوم درمانگاهی،دانشکده دامپزشکی دانشگاه آزاد اسلامی واحد گرمسار، گرمسار- ایران
۲) گروه علوم درمانگاهی،دانشکده دامپزشکی دانشگاه آزاد اسلامی واحد علوم تحقیقات، تهران – ایران
* نویسنده ی مسؤول: avestasadr@yahoo.com

اهداف: بیماری نیوکاسل، یک بیماری حاد و با واگیری بالاست که درگونه های زیادی از پرندگان اهلی و وحشی بروز می کند. تنها راه مقابله با آن واکسیناسیون می‌باشد. انتخاب نوع واکسن و برنامه واکسیناسیون مهم‌ترین عوامل موثر در ایمنی‌سازی بوقلمون‌ها علیه این بیماری هستند. علاوه بر این عوامل، نوع سویه تجاری(نژاد) نیز بر نتیجه فرایند واکسیناسیون تاثیرگزار است و شواهد نشان می دهد که نژاد در بوقلمون می تواند بر میزان پاسخ پادتن بر علیه بیماری نیوکاسل تاثیر گزار باشد. هدف از مطالعه ی حاضرارزیابیتاثیر نژاد و روش واکسیناسیون،در برانگیختگی پاسخ پادتن به واکسن‌های بیماری نیوکاسل در دو نژاد(سویه تجاری) مختلف بوقلمون می باشد. در این مطالعه دو نژاد بوقلمون (Grade Maker و BUT Premium) و دو روش واکسیناسیون (قطره چشمی و اسپری) علیه بیماری نیوکاسل مورد مقایسه قرار گرفتند.

مواد و روش کار: ۱۶۰ قطعه جوجه بوقلمون از هر دو نژاد به طور تصادفی به سه گروه اصلی تقسیم شدند:A، B و C. سپس خود این ۳ گروه به تحت گروه های A1، A2، A3، B1، B2، B3، C1 و C2 شامل ۲۰ قطعه تقسیم شدند. پرندگان گروه Aبه روش قطره چشمی و گروه B به روش اسپری با واکسن ویتاپست در روز اول واکسینه شدند. گروه های C1 و C2 نیز گروه های کنترل واکسن می باشند. در روزهای ۱، ۷، ۱۴، ۲۱، ۲۸، ۳۵، ۴۲، ۴۹ و ۵۶ نمونه های خون جمع آوری گردید و توسط آزمون ELISA و HI مورد عیارسنجی پادتن های ضد ویروس بیماری نیوکاسل قرار گرفتند.

نتایج و بحث:نتایج مطالعه ی ما نشان داد که در نژاد Grade Makerروش قطره ی چشمی نسبت به اسپری به طور معنی داری پاسخ بهتری ایجاد کرده است. اختلاف آماری معنی داری ($p < 0.05$) بین تیتر های آنتی بادی در روز های ۷ و ۱۴در دو روش واکسیناسیون قطره ی چشمی و اسپری وجود داشت. در حالی که در نژادBUT Premiumروش اسپری پاسخ بهتری را نشان داده است اما اختلاف آماری معنی داری در آنها دیده نشد. نتایج مطالعه ی ما نشان داد که نوع نژاد و روش واکسیناسیون در برانگیختگی پاسخ پادتن به واکسن‌های بیماری نیوکاسل موثر است. نتایج مطالعه ی ما پیش فرض های ما را در مورد این که دو سویه‌ی تجاری مختلف بوقلمون به برنامه واکسیناسیون واحد پاسخ متفاوتی می دهند تایید نمود. همچنین یک سویه‌ی تجاری واحد، می تواند به دو برنامه واکسیناسیون مختلف پاسخ متفاوتی بروز دهد.

واژه های کلیدی: بیماری نیوکاسل، قطره چشمی، اسپری، HI ، الایزا، بوقلمون.

عفونت طبیعی کبوتر اهلی (*Columba livia*) به انگل سارکوسیست در ایران

منیره خردادمهر؛ معین زهتاب- نجفی؛ وحیدرضا رنجبر؛ پریسا شهبازی*
گروه پاتوبیولوژی دانشکده دامپزشکی دانشگاه تبریز
***ایمیل نویسنده مسؤول:moein.zehtab91@ms.tabrizu.ac.ir**

هدف: پرندگان میزبان واسط گونه های زیادی از انگل سارکوسیست هستند، ولی پرندگان کلمبیفرم، از جمله کبوتر، به ندرت مبتلا می شوند. تا به امروز پژوهش های کمی در این زمینه انجام شده است. اخیرا از برلین (آلمان) یک بیماری عصبی کشنده همراه با گونه جدیدی از انگل سارکوسیست در کبوتر (*Columba liviadomestica*) گزارش شده است. در مطالعه حاضر، آلودگی طبیعی دو فارم کبوتر اهلی (شامل ۹۴ پرنده) با علایم بالینی عصبی توضیح داده شده است.

روش کار: صاحبان دو فارم کبوتر اهلی، علی رغم استفاده از واکسن نیوکاسل، یک بیماری عصبی همراه با علایمی مانند افسردگی پیشرونده، پیچش گردن، فلجی، لرزش و ۲۳.۴٪ مرگ و میر را در کبوتران خود مشاهده نمودند. به منظور تشخیص بیماری، شش پرنده تازه تلف شده، مورد کالبدگشایی قرار گرفتند. با توجه با علایم بالینی، در ابتدا چون احتمال ابتلا به فرم عصبی بیماری نیوکاسل می رفت، تمام ارگان های احشایی، سیستم عصبی و همچنین نای، به صورت دقیق مورد بررسی ماکروسکوپی قرار گرفتند و تمام آنها، طبیعی و بدون ضایعه به نظر رسیدند. به منظور اطمینان بیشتر، از تمامی ارگان های بازرسی شده، نمونه های مناسبی جهت مطالعات هیستوپاتولوژی گرفته شد و در فرمالین بافر ۱۰٪ فیکس و بعد از پروسه کردن بافت ها به روش روتین، با هماتوکسیلین و ائوزین، رنگ آمیزی و در نهایت با میکروسکوپ نوری مطالعه شدند.

نتایج و نتیجه گیری: در مطالعات پاتولوژی، تعداد بسیار زیادی کیست های انگل سارکوسیست در عضله سینه و به ویژه لایه عضلانی سنگدان مشاهده شد. در اطراف کیست های دجنره شده، نفوذ شدید سلول های آماسی، دجنراسیون هیالینی و نکروز وجود داشت. دیواره کیست های دجنره نشده، با میکروسکوپ نوری، صاف تا کمی مواج به نظر رسیدند. از برلین اخیرا یک بیماری عصبی کشنده همراه با گونه جدیدی از انگل سارکوسیست در کبوتر گزارش شده است. علایم بالینی مشاهده شده در کبوتران مبتلا، مشابه علایم ابتلا به *پارامیکسوویروس* یک یا *سالمونلا تایفیموریوم* می باشد که شامل افسردگی، لرزش؛ پیچش گردن، فلجی، لرزش و مرگ می باشد. نتایج مطالعه حاضر نشان میدهد که لایه عضلانی سنگدان نیز بافت مناسبی جهت مطالعه انگل سارکوسیست در کبوتر می باشد. با توجه به اینکه اطلاعات کمی در این زمینه وجود دارد، پژوهش بیشتری در این زمینه مورد نیاز می باشد.

واژه های کلیدی: عفونت طبیعی؛ کبوتر؛ سارکوسیستوز؛ علایم عصبی

جداسازی سالمونلاهای متحرک از مزارع طیور گوشتی خراسان‌رضوی و تعیین گروه‌های سرمی و مقاومت آنتی‌بیوتیکی آنها

علیرضا کوچک زاده، مجید کاظم نژاد، مهران نورافر، مسعود اکبری سلطان آباد، رضا غفورزاده یزدی، امین عباسی، حسین جهانیان، نیما فرهادی فر،ابراهیم فرامرزی

سالمونلا باکتری روده ای و زئونوزیست که قدرت ایجاد بیماری در طیور، انسان وحیوانات مزرعه را داراست. هدف از انجام این مطالعه بررسی فراوانی حضور سالمونلا و تعیین الگوی مقاومتآنتی بیوتیکی این جدایه هاست.نمونه های مدفوع از نود(۹۰) فارم گوشتی از خراسان رضوی جداسازی شد(۲۰۱۳-۲۰۱۲). نمونه ها پس از غنی سازی بروی محیط انتخابی کشت شدند و در نهایت الگوی مقاومت آنتی بیوتیکی وگروه های سرمی جدایه های مذکورمورد ارزیابی قرار گرفت. نتایج حاکی از آن است که سالمونلا از۳۸/۸٪ مزرعه جداسازی شد ، سوش های مذکور اکثرا متعلق به سروگروپ دی ۶۵/۷ ٪ بودند و ۳۴/۲ ٪ جدایه ها نیز متعلق به سرگروپ سی بودند.نتایج آنتی بیوگرام ۱۵ آنتی بیوتیک مختلف به روش انتشار دیسک به شرح زیر است. میزان مقاومت به آموکسی سیلین ، لینکواسپکتین، تتراسایکلین، اکسی تتراسایکلین ، داکسی سایکلین، کلر تتراسایکلین و نئومایسین به ترتیب در ۹۴/۲ ،۸۸/۵، ۸۵/۷، ۸۵/۷، ۸۰، ۷۷/۱، ۸۵/۷ درصد از نمونه ها مشاهده گردید. مناسب ترین مواد آنتی بیوتیکی به ترتیب شامل فورازولیدون ، تریمتوپریم سولفامتوکسازول ، سفتریاکسون و جنتامایسین بود. که میزان حساسیت به آنها به ترتیب عبارت بود از۱۰۰ ، ۹۴/۲ ، ۹۴/۲ ، ۷/ ۸۵ درصد ، در ضمن میزان تاثیری حدوسط در مورد آنتی بیوتیک های فلورفنیکل ، سیپروفلوکساسین ، دی فلوکساسین و اتروفلوکساسین در مورد اکثر جدایه ها مشاهده شد. تمام جدایه های مذکور دارای الگوی مقاومت چند گانه بودند. در این مطالعه سالمونلا از ۳۸/۸٪ مزارع جداسازی شد و با توجه به مقاومت متنوع این باکتری انجام آنتی بیوگرام پیش از درمان ضروری بنظر میرسد. همچنین جهت بررسی دقیق تر حضور سالمونلا مطالعه جامع تر در این زمینه باید به انجام رسد.

کلمات کلیدی :سالمونلا ، گروه سرمی ، مزارع گوشتی ، آنتی بیوگرام و جداسازی

تعیین سلنیوم آب مزارع پرورش طیور گرمسار با روش طیف سنجی جذب اتمی

ویدا پیر زمانی، امیر ربیعی، ایمان سلامتیان، سید امید بابایی*
Iman.salamatian@gmail.com

اهداف: سلنیوم عنصری است که از جنبه های محیط زیستی، زیست شناختی و سم شناسی حائز اهمیت است. این اهمیت به این موضوع برمی گردد که بین اثرات سمی و تغذیه ای این عنصر مرز باریکی وجود دارد. در تامین نیازهای غذایی ندرتا مقادیر سلنیوم در نظر گرفته می شوند. این مطالعه بصورت مقطعی-توصیفی، برای تعیین میزان غلظت فلز سلنیوم در آب لوله کشی و چاه های آب مزارع پرورش طیور شهرستان گرمسار انجام شده است.

مواد و روش کار: این مطالعه مقطعی-توصیفی در سال ۱۳۹۳ انجام گرفت و شهرستان گرمسار به ۵ ناحیه ی شمالی، جنوبی، غربی، شرقی و مرکزی تقسیم بندی شد و به صورت تصادفی ۲۵ نمونه آب لوله کشی و ۵۵ نمونه آب چاه از مرغداری ها جمع آوری گردید. غلظت عنصر سلنیوم با روش طیف سنجی جذب اتمی همراه با سیستم تولید هیدرید تعیین گردید و در نهایت همه نتایج توسط آزمون آماری ANOVA مورد تجزیه و تحلیل قرارگرفته و مقایسه شدند.

نتایج و نتیجه گیری: در نمونه های آب مربوط به چاه و لوله ها میانگین غلظت سلنیوم به ترتیب ۰.۴۸۲ ppm و ۰.۳۲۶ ppm بود. نتایج نشان می دهد که مقادیر سلنیوم بدست آمده در ۲۲.۵٪ مرغداری ها، در محدوده استاندارد است (۰.۲ ppm تا ۰.۳ ppm). بنابراین برای جلوگیری از ایجاد مسمومیت و بهره گیری از فواید فیزیولوژیکی این عنصر ضروری کم نیاز، در نظر گرفتن مقادیر سلنیوم در آب و سایر مواد غذایی برای محاسبات نیازهای تغذیه ای ضروری است.

واژگان کلیدی: سلنیوم، آب، طیف سنجی جذب اتمی همراه با سیستم تولید هیدرید، مرغداری

اهمیت و روشهای نوین کنترل جرب درمانیسوس گالینه در مرغان تخمگذار

امیرعلی امیری[۱]،نوا ارم[۲]
۱- کلینیسین اختصاصی طیور،کلینیک مهر(دامپزشک بخش خصوصی)
۲- دانشجوی تخصصی بهداشت وبیماریهای طیوردانشگاه تهران
ایمیل نویسنده مسؤول: a2_amiri@yahoo.com

مقدمه: جرب درمانیسوس گالینه یاجرب قرمز طیور،یک انگل خارجی است که ازخون میزبان تغذیه نموده وعلاوه برپرندگان درسایرگونه های جانوران نیز دردسرساز میباشد. این انگل درمرغان تخمگذار به وفوریافت میشود و در بسیاری از نقاط جهان ازجمله ایالت متحده امریکا،اروپا، ژاپن وچین یک خطرجدی محسوبمیشود. آلودگی طیور به وسیله این جرب موجب افزایش تلفات،انتقال بیماریها،کاهش تولیدوهمچنین واکنشهای آلرژیک درافراد درتماس خواهدشد. هزینه ی کنترل وضرر اقتصادی حاصل ازکاهش تولید ناشی از این جرب سالانه ۱۳۰ یورو در اتحادیه اروپا برآورد شده است.

مواد و روش کار: کنترل جرب درمانیسوس به دو بخش روش های سنتی و روش های جایگزین تقسیم می گردد. روش های سنتی بیشتر بر پایه ی کشتن جرب و استفاده از سموم مختلف استوار بود اما امروزه روش هایی چون استفاده از نور، جرب های مهاجم، قارچ ها، واکسن و استفاده از روغن های ضروری و ترکیبات گیاهی با بوی نافذ همچون سیر، آویشن، بابونه و کاسنی و... بیشتر مورد توجه و استفاده هستند.

نتیجه گیری: جرب درمانیسوس گالینه تهدیدی جدی برای صنعت طیور تخمگذار در ایران و بسیاری نقاط جهان محسوب می شود. مقاومت های دارویی گسترده نسبت به انواع حشره کش ها، نشان از تداوم این مشکل در سطح وسیع دارد. بررسی اطلاعات و دانسته های گوناگون حاصل از تحقیقات انجام شده ما را در یافتن روشی نوین و کارآمد در حذف این انگل یاری خواهد کرد.

کلمات کلیدی: درمانیسوس گالینه، جرب قرمز، انگل خارجی، مرغان تخمگذار، تولید تخم مرغ.

گزارش یک مورد آبله ی جلدی غیر معمول در یک فارم طیور تخمگذار تجاری

نویسندگان : امیر علی امیری[۱] ، نوا ارم[۲]
۱- کلینیسین اختصاصی طیور ، کلینیک طیور مهر (دامپزشک بخش خصوصی)
۲- دانشجوی تخصصی بهداشت و بیماری های طیور دانشگاه تهران
ایمیل نویسنده مسؤول : a2_amiri@yahoo.com

مقدمه: بیماری آبله یک بیماری ویروسی شایع در طیور صنعتی، پرندگان زینتی و پرندگان وحشی و مهاجر می باشد. این بیماری در طیور تخمگذار موجب کاهش تولید، کاهش رشد و افزایش مرگ و میر می گردد. بیماری آبلهیکبیماری آهسته گسترش است که به سه فرم اصلی بروز می کند.فرم جلدی شامل جراحات ندولار مجزا در نقاط بدون پر بدن می باشد که فرم خفیف تری از بیماری محسوب می شود . فرم دیفتریک شامل جراحات فیبرینونکروتیک پیش رونده در غشای موکوسی دهان ، مری و ابتدای دستگاه تنفس می باشد و فرم سوم نیز فرم سیستمیک از بیماری آبله می باشد.
مواد و روش کار : یک گله تخمگذار تجاری ۵۰۰۰۰ تایی نژاد LSL در سن ۶۰ هفتگی در منطقه ورامین دچار تلفات روزانه ۳۰تا۵۰ قطعه گردید. این فارم دارای ۴ سالن بود که تلفات ابتدایی تنها در یک سالن مشاهده گردید . میزان تولید گله ۱۰٪ کاهش یافت . این فارم سابقه واکسیناسیون علیه بیماری آبله را در ۱۲ هفتگی دارا بود . همچنین گله به شدت درگیر با جرب درمانیسوس گالینه بود.
نتیجه گیری : در کالبدگشایی جراحات پوستی دیده شد . در پاتولوژی و همچنین آزمایش PCR بیماری ابله طیور تایید گردید . همچنین نکته قابل توجه تست مثبت PCR انجام شده بر روی جرب های قرمز طیور بود. این مورد از نظر درگیری مجدد گله علی رغم واکسیناسیون علیه بیماری آبله پرندگان و امکان وجود سویه های مقاوم به واکسن و همچنین نقش جرب درمانیسوس گالینه در انتقال مکانیکی بیماری آبله قابل توجه بود.
کلمات کلیدی: آبله پرندگان، درمانیسوس گالینه، PCR، هیستوپاتولوژی،مرغان تخمگذار

تعیین گروه فیلوژنتیکی جدایه های اشریشیا کولی از موارد کولی باسیلوز طیور گوشتی و تخم گذار

پیمان نخعی[۱]، جمشید رزم یار[۲]، سید مصطفی پیغمبری[۳]*
۱.رزیدنت بهداشت و بیماری های طیور، دانشکده دامپزشکی، دانشگاه شیراز، ایران
۲.دانشیار بخش بیماری های طیور، دانشکده دامپزشکی، دانشگاه فردوسی مشهد، ایران
۳.استاد بخش بیماری های طیور، دانشکده دامپزشکی، دانشگاه تهران، ایران
***pmnakhaei@gmail.com**

کولی باسیلوز یکی از شایع ترین بیماری های باکتریایی صنعت طیور است. به منظور آنالیز فیلوژنتیکی، تعداد ۱۷۰ جدایه اشریشیا کولی از گله های طیور گوشتی و تخم گذار مبتلا به کولی باسیلوز در طی سال های ۱۳۸۹ تا ۱۳۹۲ جمع آوری گردید. از تعداد ۱۵۰ جدایه تهیه شده از جراحات مشخص موضعی و سیستمیک کولی باسیلوز به ترتیب ۵۴ (۳۱/۸٪)، ۳۷ (۲۱/۷٪)، ۳۶ (۲۱/۲٪) و ۴۳ (۲۵/۳٪) جدایه متعلق به گروه های A، B1، B2 و D بود. همچنین پراکندگی گروه های فیلوژنتیکی در ۲۰ جدایه تهیه شده از مدفوع پرندگان به ظاهر سالم به عنوان گروه کنترل شامل ۹ (۴۵٪)، ۵ (۲۵٪)، ۱ (۵٪) و ۵ (۲۵٪) جدایه بود که به ترتیب متعلق به گروه های A، B1، B2 و D می باشد. بنابراین گروه های فیلوژنتیکی B2 و A به ترتیب در بین جدایه های جمع آوری شده از پرندگان مبتلا به کولی باسیلوز و پرندگان به ظاهر سالم غالب بودند. نتایج این مطالعه نشان دهنده تنوع ژنوتیپی در میان انواع مختلف رخدادهای کولی باسیلوز طیور می باشد.
واژگان کلیدی: کولی باسیلوز، گروه های فیلوژنتیکی، جدایه، طیور

گزارش موردی: شناسایی مایکوباکتریوز در گله کبوترهای خانگی به وسیله علایم کالبدگشایی، میکروبیولوژی و هیستوپاتولوژی

حسن میرعرب رضی[1*]، سینا فقیه زاده[1]، پیمان نخعی[1]، محدثه منظری توکلی[1]، بهمن عبدی هاچسو[2]
۱.رزیدنت بیماری های طیور، دانشکده دامپزشکی، دانشگاه شیراز، ایران
۲.بخش بیماری های طیور، دانشکده دامپزشکی، دانشگاه شیراز، ایران
*hassan.mirarab@gmail.com

اهداف: مایکوباکتریوز طیور که غالبا به‌وسیله مایکوباکتریوم ایویوم ایجاد می شود، بیماری مهمی است که تمام گونه های پرندگان را درگیر می‌کند. با این‌حال کبوترها نسبت به عفونت‌های ناشی از این عامل باکتریایی بسیار مقاوم بوده و به ندرت جراحات کلاسیک در کبوترسانان ایجاد می‌شود.
مواد و روش کار: این گزارش رخداد مایکوباکتریوز طیور را در یک گله ۱۲۰ عددی کبوتر با سنین مختلف بیان می نماید. در طی یک دوره سه ماهه، کبوترهای بیمار دچار افسردگی و بی اشتهایی و به دنبال آن لاغری مفرط آتروفی عضلانی شدند. علاوه بر حضور جراحات ندولار گرانولوماتوز در اندازه های مختلف در اندام های داخلی، جراحاتی بر روی بال ها و پاها نیز وجود داشت. جراحات ندولار داخلی در ارگان هایی از جمله کبد، روده، سنگدان، کلیه، پرده مزانتر و بیضه ها مشاهده شد. با توجه به حضور این جراحات به عفونت های ناشی از مایکوباکتریوز یا توبرکلوز مشکوک شده و نمونه هایی از جراحات موجود در ارگان های ذکر شده به منظور انجام آزمایشات میکروبیولوژی و هیستوپاتولوژی اخذ شد.
نتایج: در آزمایشات هیستوپاتولوژی این ارگان ها تعدادی جراحات گرانولوماتوز بزرگ با نکروز کازئوز مرکزی که به وسیله سلول های اپی تلیال، سلول های غول پیکر و لایه ضخیمی از لنفوسیت ها احاطه شده بودند، مشاهده شد. در مقاطع بافتی تهیه شده با رنگ آمیزی زیل-نلسون، تعداد بسیار زیاد باسیلی های اسیدفست داخل سلولی و خارج سلولی در این ارگان ها ردیابی شد. با توجه به محل قرارگیری جراحات گرانولومایی به نظر می رسد که انتقال بیماری در گله به صورت مدفوعی-دهانی بوده است. با توجه به اهمیت زئونوز بودن و خطر انتقال این بیماری به انسان به خصوص افراد دچار نقص سیستم ایمنی، توصیه به حذف پرندگان مبتلا به جای درمان آن ها می باشد.
کلمات کلیدی: مایکوباکتریوز، مایکوباکتریوم ایویوم، کبوتر، جراحات ندولار

بررسی انتقال کاندیدا از طریق کیسه زرده و کیسه آمنیوتیک در جنین جوجه

رضا امان الهی[1]، علیرضا شفیعیان[2]، هادی توکلی[3]، امین درخشان فر[4]، پیمان نخعی[1*]، سید حسن میرعرب رضی[1]
۱. رزیدنت بیماری های طیور، دانشکده دامپزشکی، دانشگاه شیراز،شیراز، ایران
۲.دانشکده دامپزشکی دانشگاه شهید باهنر کرمان، کرمان، ایران
۳.بخش بیماری های طیور، دانشکده دامپزشکی دانشگاه شهید باهنر کرمان، کرمان، ایران
۴.بخش علوم پایه، مرکز تحقیقات بیماری های عفونی، دانشکده پزشکی دانشگاه شیراز، شیراز، ایران
*Pmnakhaei@gmail.com

اهداف: کاندیدا آلبیکنز، قارچی است که از لحاظ انتقال به انسان و زئونوز بودن حائز اهمیت است و همچنین به عنوان قارچ همزیست و عامل اولیه ایجاد کننده کاندیدیازیس محسوب می شود. کاندیدیازیس می تواند طیف وسیعی از عفونت ها را سبب شود از عفونت های سطحی همانند برفک های دهانی و واژینال گرفته تا عفونت های سیستمیک و بیماری های تهدید کننده زندگی را ایجاد می کند.
مواد و روش کار: در این مطالعه با تلقیح مستقیم کاندیدا آلبیکنز در کیسه زرده و کیسه آمنیوتیک جنین جوجه ها، کاندیدیازیس سیستمیک ایجاد شد. در مرحله بعد به منظور ارزیابی عفونت ایجاد شده و جراحات پاتولوژیک کاندیدا آلبیکنز از لحاظ بافت شناسی و آسیب شناسی مورد بررسی قرار گرفتند. در قدم اول، سویه های مختلف کاندیدا برای بار اول بر روی محیط کشت YPD آگار کشت داده شدند؛ سپس تک کلونی را در داخل محلول YPD ۲۰ میلی لیتری تلقیح داده شد و در داخل انکوباتور قرار گرفت. محصول ۱۰ میلی لیتری از طریق سانتریفیوژ به دست آمد. شمارش سلول ها بعد از مخلوط سازی با PBS سرد صورت گرفت. تخم های جنین دار بالغ به چهار گروه ۲۰ تایی تقسیم شد که شامل دو گروه کنترل و دو گروه درمان بود. آب مقطر به میزان ۰.۴ میلی لیتر به داخل کیسه زرده تخم های متعلق به گروه کنترل A و داخل کیسه آمنیوتیک گروه کنترل B تزریق شد. درحالی که ۰.۴ میلی لیتر محلول حاوی کاندیدا به داخل کیسه زرده تخم های گروه درمانی C و داخل کیسه آمنیوتیک گروهD تزریق شد.
نتایج: در تعداد معدودی از جنین های متعلق به گروه کنترل خون ریزی های کوچکی به دلیل ضربه های خفیف مشاهده شد و هیچ جراحت دیگری دیده نشد. در هر دو گروه درمانی جراحات مشابهی به‌چشم خورد که تفاوت مشخصی بین این دو گروه مشاهده نشد. جراحات هیستوپاتولوژیک به‌طور گسترده در کبد، کلیه و ریه متمرکز شده بودند و هیچ‌گونه جراحات ماکروسکوپیکی در بافت‌های آلوده مشاهده نشد.
واژگان کلیدی: کاندیدا آلبیکنز، تخم مرغ های جنین دار، هیستوپاتولوژیک، کیسه زرده، کیسه آمنیوتیک

اورنیتوباکتریوز در طیور صنعتی ایران و واکسن های اورنیتو باکتریوم رینو تراکئال

*بنانی، منصور؛ پوربخش، سید علی؛ نوری، عباس؛ گودرزی، حسین؛ اشتری، عباس؛ میرزایی، سید غلامرضا و باباخانی، مهناز
مؤسسه تحقیقات واکسن و سرم سازی رازی، سازمان تحقیقات، آموزش و ترویج کشاورزی
*منصور بنانی؛ دانشیار بخش تحقیق و تشخیص بیماریهای باکتریایی، انگلی و قارچی طیور، مؤسسه تحقیقات واکسن و سرم سازی رازی، حصارک کرج، ایران

مقدمه: اورنیتو باکتریوز یا عفونت اورنیتوباکتریوم رینوتراکئال (ORT) یک بیماری مسری باکتریایی گونه های پرندگان، به ویژه ماکیان و بوقلمون است. این بیماری می تواند با اختلال تنفسی، کاهش رشد، تلفات و افزایش حذف کشتارگاهی همراه باشد و سالیانه خسارات اقتصادی سنگینی در صنعت طیور سراسر جهان ایجاد نماید. انتقال ORT به صورت افقی و عمودی رخ می دهد و ایمنی با واسطه آنتی بادی، نقش کلیدی در محافظت در برابر عفونت ORT ایفا می کند. پس از آلودگی یک مرغداری، به خصوص در مزارع چند سنی و در مناطق با تولید متراکم، عفونت ORT بومی می شود. برخی از گزارش ها، بروز بالای عفونت ORT در میان گله های ماکیان و بوقلمون تجاری در سراسر ایران را نشان می دهند که برخی از آنها با مرگ و میر بالا هم همراه بوده است.

بررسی اثر داروی گیاهی ایمونوساپورت در مقایسه با ترکیبات مشابه بر سیستم ایمنی، مرفولوژی و میکروفلور روده و عملکرد جوجه های گوشتی

ش. رحیمی*[1]، م.ا. کریمی ترشیزی[1]، م. عیاری[2]، س. یخکشی[1]، م. نورانی[1]، م. سلیمانی[1]،غ.ر. زابلی [1]
[1]گروه علوم طیور، دانشکده کشاورزی، دانشگاه تربیت مدرس، تهران، ایران
[2] گروه علوم باغبانی، دانشکده کشاورزی، دانشگاه تربیت مدرس، تهران، ایران
* rahimi_s@modares.ac.ir

تحقیق حاضر به منظور مقایسه عصاره های گیاهان دارویی با آنتی بیوتیک بر روی وزن بدن، مقدار خوراک مصرفی، ضریب تبدیل خوراک، مرفولوژی روده، جمعیت میکروبی دستگاه گوارش، ارزیابی سیستم ایمنی همورال و سلولی و بیوشیمی خون در جوجه های گوشتی انجام گرفت. این آزمایش به مدت ۶ هفته با استفاده از ۳۰۰ قطعه جوجه گوشتی تک جنس (ROSS 308) در قالب طرح کاملا تصادفی با ۵ تیمار و ۶ تکرار و ۱۰ قطعه جوجه در هر تکرار انجام گرفت. گروه‌های آزمایشی شامل گروه ۱ـ جیره شاهد بدون هیچ افزودنی، گروه‌های ۲ و ۳ به ترتیب ایمونوفین® و ایمونوساپورت® ، گروه ۴ آنتی بیوتیک (تتراسایکلین) و گروه ۵ سرخارگل به نسبت ۱ در هزار در آب آشامیدنی بودند. بیشترین وزن بدن مربوط به گروه آنتی بیوتیک بود($P<۰/۰۵$). کمترین و بیشترین ضریب تبدیل به ترتیب مربوط به گروه کنترل و آنتی بیوتیک بود ($P<۰/۰۵$). همه تیمارها نسبت به تیمار شاهد عیار آنتی بادی بالاتری را نسبت به واکسن نیوکاسل و آنفلوانزا دارا بودند ($P<۰/۰۵$). به طور کلی گیاهان دارویی موجب افزایش تعداد باکتری های مفید روده نظیر لاکتیک اسید و کاهش کلی فورم ها و کل باکتری های هوازی گردید. همچنین ایمنوساپورت بیشترین پاسخ ایمنی سلولی و کمترین کلسترول و تریگلیسرید را نشان داد($P<۰/۰۵$). با توجه به نتایج این مطالعه، ایمنوساپورت می تواند به عنوان جایگزین آنتی بیوتیک محرک رشد در پرورش طیور مورد استفاده قرار گیرد.
واژه‌های کلیدی:داروهای گیاهی، سیستم ایمنی، جوجه‌های گوشتی، عملکرد

اثرات ژله رویال، عسل و عصاره اتانولی بره‌موم بر سیستم ایمنی بلدرچین‌های ژاپنی

سکینه بابایی[۱]،شعبان رحیمی[۲]،محمدامیرکریمی ترشیزی[۳]،سیدناصرخالقی میران[۱]، غلامحسین طهماسبی[۴]

۱.دانش آموخته دکتری،گروه پرورش وتولیدطیور،دانشکده کشاورزی،دانشگاه تربیت مدرس

۲.استاد گروه پرورشوتولیدطیور،دانشکده کشاورزی،دانشگاه تربیت مدرس

۳.دانشیارگروه پرورش و تولیدطیور،دانشکده کشاورزی،دانشگاه تربیت مدرس

۴.استادپژوهشی بخش تحقیقات زنبورعسل مؤسسه تحقیقات علوم دامی

فرآورده‌های زنبورعسل حاوی مقادیر زیادی فلاونوئیدها، ترکیبات آلی، اسیدهای چرب و سایر مواد می‌باشند.این ترکیبات شیمیایی می‌توانند ایمنی هومورال و سلولی را در پرندگان بهبود دهند. این مطالعه به منظور تعیین اثرات ژله رویال، عسل و عصاره اتانولی بره‌موم بر سیستم ایمنی بلدرچین‌های ژاپنیانجام شد. ۱۲۸ قطعه جوجه بلدرچین نر و ماده به صورت مخلوط در قالب طرح کاملاً تصادفی با ۴ تیمار،۴ تکرار و ۸ قطعه جوجه در هر تکرار به مدت ۴۲ روز مورد آزمایش قرار گرفت.جیره‌های غذایی بر پایه ذرت– سویا مطابق با احتیاجات NRC(۱۹۹۴) تنظیم شد.گروه‌های آزمایشی شامل شاهد (بدون افزودنی)، عصاره اتانولی بره‌موم ppm ۱۰۰۰، ژله‌رویالppm ۱۲۵،محلول آبی عسل ٪ ۲/۲ بود. واکسیناسیون علیه بیماری نیوکاسل (B_1) در روز ۷ به روش قطره چشمی و در روز ۲۱ علیه آنفلوانزا (H_9N_2)-نیوکاسل به صورت زیر جلدی انجام شد. دومین واکسن زنده علیه بیماری نیوکاسل (سویه لاسوتا) از طریق قطره چشمی در روز ۲۱ صورت گرفت. پاسخ ایمنی از طریق آزمایش مهار هماگلوتیناسیون (HI) ارزیابی شد. عیار آنتی‌بادی HI علیه هر دو واکسن در نمونه‌های سرم پرندگان در روز ۴۲ تعیین شد. در سن ۲۸ و ۳۵ روزگی محلول ٪ ۵ گلبول قرمز گوسفندی (SRBC) به میزان ۰/۱mLدر عضله سینه جوجه‌ها تزریق شد. سطوح آنتی‌بادی علیه SRBC توسط آزمایش هماگلوتیناسیون (HA) اندازه‌گیری شد. میزان پاسخ ایمنی سلولی از طریق فیتوهماگلوتنین (PHA) و دی‌نیتروکلروبنزن (DNCB) در سن ۴۱ روزگی تعیین شد. نتایج حاصل با استفاده از نرم افزار SAS مورد تجزیه و تحلیل آماری قرار گرفت. نتایج آزمایش نشان داد در مقایسه با گروه شاهد عصاره اتانولی بره‌موم دارای بالاترین عیار آنتی‌بادی علیه بیماری نیوکاسل بود($P<۰/۰۱$). تفاوت معنی‌داری در میزان عیار آنتی‌بادی علیه SRBC و واکسن آنفلوانزا مشاهده شد. بالاترین میزان عیار آنتی‌بادی علیه آنفلوانزا مربوط به گروه عسل بود ($P<۰/۰۱$). در بلدرچین‌هایی که عسل دریافت کردند، میزانپاسخپوستبهDNCB بیشتر از سایر گروه‌ها بود ($P<۰/۰۱$). تفاوت معنی‌داری در نسبتهتروفیلبهلنفوسیت بین گروه‌های عصاره اتانولی بره‌موم، ژله رویال و عسل با گروه شاهد وجود داشت ($P<۰/۰۱$). نتایج این مطالعه پیشنهاد می‌کند که استفاده از فرآورده‌های زنبورعسل به عنوان یک افزودنی طبیعیدر خوراک طیور می‌تواند منجر به تحریک پاسخ ایمنی هومورال و سلولی در بلدرچین ژاپنی شود.

کلمات کلیدی: فرآورده‌های زنبورعسل، ایمنیسلولی، ایمنیهومورال، بلدرچین ژاپنی.

بررسی اثر عملیات کشتار بر آلودگی میکروبیولوژیکی لاشه جوجه های گوشتی

ولی اله کوهدار. احمد شایگان منصوری.

گروه بهداشت مواد غذایی و کنترل کیفیت، دانشکده دامپزشکی،واحد کرج، دانشگاه آزاد اسلامی، کرج، ایران

نویسنده مسؤول: dr.koohdar@gmil.com

گوشت مرغ یکی از در دسترس ترین منابع تولید پروتئین مورد نیاز انسان در جهان است، به طوری که یک چهارم از کل تولید گوشت در جهان از طریق مرغ به دست می آید و با توجه به ارزش غذایی بالایی که دارد، مصرف آن بسیار توصیه می شود. از سوی دیگر، این ماده غذایی پروتئینی با ارزش اگر آلوده به میکروارگانیسم های بیماری زا باشد، می تواند منجربه بیماری در انسان شود و از طرف دیگر بسیار مستعد فساد می باشد و اگر به درستی بسته بندی و نگهداری نشود، از بین می رود .یکی از راه های حفاظت گوشت مرغ از آلودگی، تولید گوشت و عملیات کشتار مناسب در کشتارگاه است .از منظر تولید گوشت و برای اطمینان از سلامت جامعه و کیفیت گوشت، رعایت شیوه های مناسب و بهداشتی در کشتار، همراه با اقدامات پیشگیرانه مبتنی بر کاهش خطر(روش HACCP) بسیار مهم است. برای ارزیابی عملکرد فرایند کشتار، محلهایی که باعث افزایش یا کاهش بار میکروبی بر روی لاشه می شوند باید شناسایی گردند .کشتارگاه مدرن طیور دارای یک فرایند پیچیده، سریع و کاملا خودکار است .با توجه به نحوه کشتار جوجه ها، آلودگی لاشه با ایکولای چالش عمده است . ایکولای شاخصی برای شناسایی و برآورد میزان آلودگی مدفوعی گوشت مرغ است. دستکاری و مصرف مرغ آلوده به عنوان یک منبع عمده برای بیماری انسان محسوب می شود. جوجه های سالم اغلب حامل انتروباکتریاسه هستند و لاشه ها ممکن است در طول کشتار به این باکتری آلوده شوند.

تعداد سی لاشه جوجه گوشتی در کشتارگاه مرغ در مراحل مختلف کشتار(قبل و بعد از غوطه وری در آب گرم، پس از پرکنی، بعد از تخیله امعاء و احشا، وچیلر) انتخاب شده و برای تجزیه و تحلیل میکروبی مورد بررسی قرار گرفت. قبل از غوطه وری، شمارش کلی باکتریایی و ایکولای لاشه ها به ترتیب 8.1 log CFU / g و 3.2 log CFU / g بود . پس از غوطه وری، میانگین شمارش کلی باکتری 6.9 log CFU / g و ایکولای ۲.۸ log CFU / g بود . در پرکنی کاهش شمارش کلی باکتری به میزان 1.5 log CFU / g اتفاق افتاد، در حالی که ایکولای با تغییر کمی به 2.4 log CFU / g کاهش یافته است . پس از تخلیه امعاء و احشا، شمارش کلی باکتری و ایکولای به ترتیب 6.5 log CFU / g و 2.3 log CFU / g بود. بعد از سرد شدن(چیلر)، کاهش معنی داری رخ داد و میانگین شمارش کلی باکتری و ایکولای به ترتیب 4.2 log CFU / g و ۱.۹ log CFU / g شد . نتایج به دست آمده نشان می دهد که سیستم مورد استفاده در این کشتارگاه طیور در کاهش تعداد شمارش کلی باکتری و ایکولای موثر است.

کلید واژگان: مرغ، کشتارگاه، لاشه جوجه های گوشتی، روند کشتار، شمارش کلی باکتریایی، اشریشیا کولای

ارزیابی میکروبیولوژیکی گوشت طیور در کشتارگاه

ولی اله کوهدار. محسن طهماسبی.
نویسنده مسؤول: dr.koohdar@gmil.com

بهداشت مواد غذایی و ماندگاری آن هر دو نگرانی باکتریایی مهم در رابطه با تولید گوشت طیور می باشد. عمدتا" توجه ها بر روی عدم و یا کنترل میکروبی پاتوژن هایی مانند سالمونلا , کمپلو باکتر می باشد . اما از دیدگاه اقتصادی و تجاری دیگر باکتری های عامل فساد نیز بسیار مهم و قابل توجه می باشند. با توجه به سلامت مواد غذایی ,حیواناتی که بصورت آزادانه زندگی می کنند اصلی ترین تولید کنندگان باکتری های بیماری زا می باشند. در نتیجه ایجاد و ساخت کشتارگاه به منظور کنترل میکروارگانیسم ها لازم و ضروری می باشد. فعالیت ها واعمالی که در کشتارگاه انجام می شود نمی تواند به طور کامل تمام میکروارگانیسم ها را از بین ببرد. بنابراین اقداماتی برای کنترل میکروارگانیسم ها مانند جدانگهداشتن حیوانات بیمار از گله ,ضدعفونی لاشه و پیاده سازی سیستم HACCP ضروری میباشد.
بهداشت مواد غذایی در طول تولید و فراوری باعث ماندگاری بیشتر مواد غذایی می شود. اقدامات و مراحلی که در خط تولید در کشتارگاه انجام می گیرد مانند مرحله چیلر, مرحله شستشو و مرحله سرد کردن امکان کنترل میکروارگانیسم ها را بالا می برد. از زمانی که این مراحل انجام می گیرد باعث افزایش زمان ماندگاری و محدودیت آلودگی گردیده است. این تحقیق برای ارزیابی کیفیت لاشه طیور صورت گرفته است. در این تحقیق مجموعا" ۵۰ نمونه از کشتارگاه به منظور تجزیه و تحلیل میکرواوگانیسم ها جمع آوری شده است. تعدادکلی بارمیکروبی و همچنین شمارش کلیفرم های مدفوعی ,استافیلوکوکوس اورئوس , ایکولای در این مطالعه مورد بررسی قرار گرفت. براساس سازمان ملی استاندارد ایران این تحقیق صورت گرفته است. نتایج ,شیوع عفونت های Ecoli و استافیلوکوکوس اورئوس را بترتیب 60% و 56% نشان داد. حد مجازواستاندار برای آلودگی لاشه طیور برای شمارش کلی میکروبی,کلیفرم مدفوعی واستافیلوکوکوس اورئوس بترتیب ۵, ۲/۱۸, ۱/۰۸ در واحد / log10 CFU g می باشد. باتوجه به نتایج بدست آمده شمارش کلی میکروبی 20% , استافیلوکوکوس اورئوس 23% , ایکولای 25% از حد مجاز استاندارد بالاتر می باشند.
واژهای کلیدی: شمارش کلی میکروبی ،استافیلوکوکوس اورئوس،ایکولای، گوشت طیور

تاثیر دمای سر سالن جمع آوری تخم مرغ بر تلفات اولیه جنینی کارخانه جوجه کشی در یک مزرعه مرغ مادر تخمگذار در فصل زمستان

علی خداداد فخرآبادی، سعید چرخکار، رضا حسینی شهیدی، امیرحسین خوانساری، نصراله رهبر

هدف: مقایسه تاثیر دو دمای مختلف محل جمع آوری و درجه بندی اولیه تخم مرغ نطفه داردر یک مزرعه مرغ مادر تخمگذار بر کاهش تلفات اولیه جنینی ناشی ازشوک سرمایی در کارخانه جوجه کشی.
مواد و روشها: این مطالعه در دو سالن مرغ مادر تخمگذار نژاد بوونز۴۶ هفته شرکت سیمرغ خراسان با شرایط مشابه از نظرسن وپرورش و تولید انجام گردید. تخم مرغهای نطفه دار پس از جمع آوری در سالن A در دمای ۲۰°C و در سالن B در دمای ۲۵° C نگهداری شده و پس حمل با گاریهای مخصوص گازدهی با گاز فرمالین انجام و به کارخانه جوجه کشی منتقل شدند. تلفات اولیه جنینی در کارخانه جوجه کشی با نوربینی در سن ۷ روزگی در ۱۰ پارتی مختلف مورد بررسی قرار گرفت.
بحث و نتیجه گیری: میانگین تلفات اولیه جنینی در تخم مرغهای نگهداری شده در دمای ۲۰° C کمتر بود. تلفات در دمای ۲۰°C و۲۵° C به ترتیب ۴ و ۶ درصد بود($P<0.005$). بنابراین کاهش دما سبب کاهش شوک سرمایی و تلفات اولیه جنینی گردیده است.
واژه های کلیدی: primary embryonic mortality, layer breeder, service room temperature, Seamorgh Company Khorasan

ارزیابی تاثیر داروی گیاهی ایمونوفین برپاسخ ایمنی واکسن بیماری نیوکاسل در گله مرغ مادر گوشتی

رضا حسینی شهیدی، سعید چرخکار، امیرحسین خوانساری، علی خداداد فخرآبادی، نصراله رهبر

هدف :هدف این مطالعه تعیین اثرات داروی گیاهی ایمونوفین بر تیتر ایمنی واکسن نیوکاسل در یک گله مادر گوشتی نژاد راس ۳۰۸ با سن ۴۰ هفته میباشد. این مطالعه برروی دو گروه ۱۵ قطعه ای پرنده با شرایط مشابه از نظر تغذیه و تهویه و واکسیناسیون و تولید و... انجام گردید.
مواد و روشها : هر دو گروه پرنده در سن ۴۰ هفته با واکسن نیوکاسل کلون۳۰ واکسینه شده ودر گروه ۲ علاوه برآن داروی ایمونوفین در یک روز قبل واکسیناسیون و روز واکسیناسیون و روز پس از آن مورد استفاده قرار گرفت.نمونه سرمی در هر دو گروه در روز قبل واکسن و روزهای ۱۴ و ۲۸ پس از آن جهت ازمایش HI اخذ گردید. علاوه برآن نمونه برداری برروی جوجه حاصل از تخم مرغهای نطفه دار به دست آمده از دو گروه برای آزمایش HI انجام گردید.
بحث و نتیجه گیری:تیتر ایمنی بدست آمده در هر دو روز در گروه با استفاده از داروی گیاهی به طور معنی داری بالاتر بود ($P<0.05$) . بنابراین این ترکیب میتواند در افزایش تیتر آنتی بادی حفاظت کننده پرنده در ابن بیماری موثر باشد.
واژه های کلیدی:Immunofin, broiler breeder, ND immune respons, HI test, Achillea, Echinacea angustifolia

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گزارش یک مورد شیوعواریانتQXویروسبرونشیت عفونی در یک گله گوشتی استاناردبیل، ایران

آیدین‌عزیزپور[۱]، رسول علقلی‌زاده مقدم[۲]، پیمان بیژن‌زاد[۳]، وحید حاجی‌آبالو[۳]، طاهره کریمی[۴]، سامان فرامرزی[۵]، علی ضرغامی[۵]
۱.دانشکده کشاورزی مشگین شهر، دانشگاه محقق اردبیلی، اردبیل، ایران.
۲.دامپزشک شاغل در بخش خصوصی، اردبیل، ایران.
۳.دانشکدهدامپزشکی،واحدتبریز،دانشگاهآزاداسلامی،تبریز،ایران
۴.فارغ التحصیل از دانشکده دامپزشکی دانشگاه شهید چمران، اهواز ، ایران.
۵.دانشکدهعلومتخصصیدامپزشکی،گروهبیماری‌هایطیور،دانشگاهآزاداسلامی،واحدعلوموتحقیقات،تهران،ایران
نویسنده مسئول:Aidin_Azizpour@yahoo.com

مقدمه:ویروسبرونشیت عفونی (IB) یکی از ویروسهای بسیار عفونی و شایع طیور در تمام نقاط مختلف جهان می باشد کهیکی از خصوصیات بارز این ویروس ظهور سروتیپها و واریانت های جدید می‌باشد که کنترل این بیماری را در سطح مزارع ماکیان با مشکل مواجه کرده است.
هدف: این مطالعه گزارش موردی از عفونت با ژنوتیپ چینی (QX)ویروس برونشیت عفونی طیور در یک گله گوشتی با ظرفیت۳۰۰۰۰ قطعه در سن ۲۸روزگیبا علایمی نظیر کاهش وزن، تلفات ۲۵ درصدی و درگیری کلیوی در سال ۱۳۹۴ می باشد.
روش تحقیق:از پرندگان بیمار نمونه‌های سکال تونسیل وکلیه اخذ گردید و قطعه ای از ژن پروتئین S_1 با استفاده از آزمایش RT-PCR تکثیر و تعیین توالی شد.
یافته‌ها: تجزیه و تحلیل فیلوژنی توالی اسیدهای آمینه نشان داد کهاین جدایه در شاخه‌های درخت شجره‌شناسیبا سویهQX کشورهای اروپایی و چینی قرابت دارد.
بحث و نتیجه گیری:نتایج این مطالعه حاکی از شیوع ژنوتیپ QXویروس برونشیت عفونیبعنوان واریانت جدید در منطقه اردبیل می باشد. بنابراین انتخاب نوع واکسن مناسب و تدوین برنامه واکیسناسیون خاصبرای مزارع طیور توصیه می‌گردد.
واژه‌های کلیدی: ویروس برونشیت عفونی، ژنوتیپ QX، شجرنامه فیلوژنی، اردبیل

بررسی علل عمده ضبط لاشه‌های مزارع مادر گوشتی در کشتارگاه صنعتی نمین، استان اردبیل در طی سال ۱۳۹۳

آیدین عزیزپور[۱]، حسین نیک پیران[۲]،علیرضا غفاری[۳]، وحید حاجی‌آبالو[۲]، حجت گابل[۴]، محسن بنانی[۴]، میلاد پورآشور[۴]

۱.دانشکده کشاورزی مشگین شهر، دانشگاه محقق اردبیلی، اردبیل، ایران.

۲.دانشکده‌دامپزشکی،واحدتبریز،دانشگاه‌آزاداسلامی،تبریز،ایران

۳.دامپزشک شاغل در بخش خصوصی، اردبیل، ایران.

۴.دانشکده علوم تخصصی دامپزشکی،گروه بیماری‌های طیور، دانشگاه آزاد اسلامی، واحد علوم و تحقیقات، تهران، ایران

*نویسنده مسئول:Aidin_Azizpour@yahoo.com

مقدمه:با توجه به توسعه چشمگیر صنعت مرغداریها در طی دهه‌های اخیر، لزوم رعایت بهداشت و بازرسی گوشت در کشتارگاه‌های صنعتی اهمیت خاصی پیدا کرده است تا فرآورده های طیور در شرایط کاملا بهداشتی در اختیار مصرف کنندگان قرار گیرد.

هدف:این تحقیق جهت بررسی علل حذف لاشه‌های مزارع مادر گوشتی در کشتارگاه صنعتی نمین طی سال ۱۳۹۳انجام گرفت.

روش تحقیق: با مراجعه مکرر به کشتارگاه و نظارت بر زنجیره کشتار، کل میزان کشتار و وزن آنها، لاشه های غیر قابل مصرف و وزن آنها و همچنین علل تفکیکی حذف لاشه ها از روی علایم ظاهری و ارگانیکی آنها شناسایی و ثبت گردید.

یافته‌ها: بعد از بازدید و آمارگیری مشخص گردید کل میزان کشتار در طی این مدت ۱۸۵۷۲۲ قطعه می باشد که در مجموع ۷۲۴۶۲۰ کیلوگرم وزن زنده کشتاربوده است. از کل کشتار،تعداد ۳۸۲۹ لاشه با ۲/۰۶ درصد از کل کشتار در مجموع به وزن تقریبی ۴۶۸۰ کیلوگرم به علل مختلف ضبط گردیدند که ۱۴ لاشه (۰/۳۶٪) به علت آرتریت و سینوویت؛ ۱۵۱لاشه (۳/۹۴٪) به علت CRD؛ ۱۶۴لاشه (۴/۲۸٪) به علت سلولیت؛۱۶۸لاشه (۴/۸۳٪) به علت مسمومیت؛ ۲۲۱لاشه (۵/۷۷٪) به علت آسیت و پریتونیت؛ ۴۱۵ لاشه (۱۰/۸۳٪) به علت تلفات بین راهی؛ ۸۱۶ لاشه (۲۱/۳۱٪) به علت سپتی سمی و ۱۸۶۳ لاشه (۴۸/۶۵٪) به علت لاغری مفرط بوده است که بیشترین موارد حذفی مربوط به لاشه‌های لاغری مفرط و سپتی سمی می‌باشد که میزان ۶۹/۹۶ درصد و ۱/۴۳ درصد به ترتیب از کل لاشه‌های حذفی و کل کشتار را شامل می شوند.

بحث و نتیجه گیری:نتایج این مطالعه نشان داد که بیشترین موارد حذفی ناشی ازبیماریها می‌باشد. بنابراین، بهبود برنامه های پیشگیری وکنترلی بیماریها در سطح مزارع ضروری است.

واژه‌های کلیدی: کشتارگاه صنعتی، حذف لاشه، مرغ مادر گوشتی، نمین

شرکت‌های حاضر در نمایشگاه

نام: آزمایشگاه تشخیص دامپزشکی کوثر

تلفن: ۶۶۹۲۳۱۴۱

فکس:۶۶۴۳۵۲۱۱

پست الکترونیک:laboratory@koico.org

آدرس: تهران، میدان توحید، خیابان ستارخان، خیابان کوثر اول، پلاک ۲۴، طبقه اول

زمینه فعالیت:آزمایشگاه کوثر با هدف پاسخگویی به نیازهای صنعت دامپزشکی کشور احداث شده است.این آزمایشگاه با بهره مندی از دامپزشکان متخصص و متخصصین علوم آزمایشگاهی و با بهره گیری از تجهیزات پیشرفته در دام و طیور، در بخش های باکتری شناسی، ویروس شناسی، سرولوژی، هماتولوژی، تشخیص مولکولی بر پایه PCR فعالیت دارد

نام شرکت: دارویی و بهداشتی آسینه

تلفن: ۶۶۹۳۴۸۰۰

فکس:۶۶۹۳۴۳۹۲

وب سایت:www.asineh.com

پست الکترونیک:info@asineh.com

آدرس: تهران، خیابان توحید، حدفاصل فرصت و طوسی، پلاک ۷۵، واحد ۳

زمینه فعالیت (۲۵ کلمه):فروش و خدمات بعد از قروش انحصاری کیتهای الایزا شرکت بایوچک هلند در ایران، فروش انحصازی آنتی ژنهای شرکت Charles River آمریکا در ایران

نام شرکت: شرکت بازرگانی کارون

تلفن: ۰۲۱-۶۶۹۳۰۱۱۳

فکس: ۰۲۱-۶۶۹۳۴۹۱۶

وب سایت:www.karoonco.com

پست الکترونیک:Info@karoonco.com

آدرس: تهران ، میدان توحید ، خیابان پرچم، پلاک ۱۱

زمینه فعالیت:وارد کننده محصولات دارویی و بیولوژیکی در زمینه دامپزشکی

نام شرکت: دارویی به بان شیمی

تلفن: ۹۵-۶۶۵۸۱۲۹۴

فکس:۶۶۵۸۱۳۵۴

وب سایت:www.behbanshimi.ir

پست الکترونیک:behbanshimi.ir

آدرس: تهران، خیابان آزادی، روبروی دانشکده دامپزشکی دانشگاه تهران، ساختمان برجساز کاوه، بلوک B،طبقه ۱۰، واحد ۱۰۵

زمینه فعالیت:تولیده کننده ضد عفونی و مواد آنتی سپتیک

نام شرکت: دارویی پارس دوفارما

تلفن: ۶۶۱۲۲۲۱۳

تلفکس: ۵۵۱۲۲۲۴۹

وب سایت: www.parsdopharma.com

پست الکترونیک: info@parsdopharma.com

آدرس: تهران، میدان توحید، خ امیرلو، نبش خ شهید طوسی، پلاک ۱۱۵، واحد ۱

زمینه فعالیت:تولید کننده داروهای دامپزشکی

نام شرکت: پارس ژیوار صوفی®

تلفن: ۸-۸۸۰۶۴۴۲۶

فکس: ۸۸۰۶۴۴۲۵

وب سایت: www.ParsJivarSoufi.com

پست الکترونیک: pjs@parssoufi.com

آدرس: تهران، خیابان سیدجمال الدین اسدآبادی، خیابان هفتاد ودوم، پلاک ۲، واحد ۳، کدپستی: ۱۴۳۶۹۶۵۱۴۸، صندوق پستی: ۱۹۳۹۵-۴۱۱۷

زمینه فعالیت:شرکت پارس ژیوار صوفی® با شعار "هدف ما، سلامتی " با پشتوانه ی سال‌ها تجربه در زمینه‌های خوراک و خوراک دهی، بهداشت و پرورش، واردات، بازاریابی و فروش و با بهره‌مندی از دانش روز و آخرین دستاوردهای علمی صنعت دامپروری جهان، به جمع فعالان صنعت دامپروری کشور پیوست.

نام شرکت: پارسیان اکسیر آریا

تلفن: ۴۹۷۵۲۰۰۰

فکس: ۴۴۷۹۰۲۵۸

وب سایت: www.parsianexir.com

پست الکترونیک: info@parsianexir.com

آدرس: تهران، کیلومتر ۱۴ جاده مخصوص کرج ، شهرک چیتگر شمالی ، خیابان احد ، خیابان شهید رجایی غربی ، پلاک ۴۵

زمینه فعالیت:واردات دارو ، واکسن ، مواد بیولوژیک و افزودنی های خوراک دام و طیور

نماینده انحصاری شرکتهای IZO ایتالیا، Pintaluba اسپانیا و Bivit ایتالیا

نام شرکت: پارسیان پخش اکسیر

تلفن: ۶۶۹۳۵۲۵۴

فکس: ۶۶۵۹۲۰۶۴

وب سایت:www.parsianpakhsh.com

پست الکترونیک:info @ parsianpakhsh.com

آدرس: تهران،بزرگراه چمران، نرسیده به میدان توحید، باقرخان غربی، پلاک۱۰۱، واحد۶

زمینه فعالیت: پخش سراسری دارو و واکسن و مواد بیولوژیک،دام و طیور و آبزیان

نام شرکت: پاییزان دارو

تلفن: ۹-۸۸۵۷۳۴۴۶

فکس: ۸۸۵۷۳۴۵۰

وب سایت:www.paeezandarou.com

پست الکترونیک: info@ paeezandarou.com

آدرس: تهران ، شهرک غرب ،خیابان زرافشان، کوچه دهم، پلاک ۲۷

زمینه فعالیت: پخش سراسری محصولات دامپزشکی شرکت های داروسازی بهرود اترک،داروسازی بهسا و دایان الکا

نام شرکت: پرشیا دام دارو

تلفن: ۸۸۹۳۱۷۸۰

فکس:۸۸۹۳۱۷۱۵

وب سایت:www.persiavetco.com

پست الکترونیک:info@persiavetco.com

آدرس: تهران ، خیابان مطهری، خیابان لارستان، کوچه افتخاری نیا، پلاک ۱۲ ، واحد ۷

زمینه فعالیت:بازرگانی، ارایه خدمات فنی، مارکتینگ و مطالعه بازار محصولات مربوط به دام و طیور وآبزیان اعم از دارو، مواد بیولوژیک و غیره، ارایه خدمات مشاوره ای در زمینه های بازرگانی، تولید و دامپزشکی

نام شرکت: تامین احتیاجات دام

تلفن: ۸۸۶۰۵۰۲۶

فکس:۸۸۰۳۱۸۰۹

وب سایت: www.TED.co.ir

پست الکترونیک:info@TED.co.ir

آدرس:تهران، خیابان شیخ بهایی، خیابان ایرانشناسی، روبروی بنیاد ایران شناسی، نبش کوچه صبا، پلاک ۶ ، واحد ۳

زمینه فعالیت: واردات واکسن و داروی طیور

نام شرکت: گروه دانش بنیان توسعه داروهای گیاهی

تلفن: ۳-۶۶۳۰۳۰۶۱

فکس: ۶۶۹۰۹۲۷۷

وب سایت:www.parsimendaru.com

پست الکترونیک:Info@ parsimendaru.com

آدرس: تهران، جمالزاده شمالی ، قبل بلوار کشاورز ، خیابان قدر،پلاک ۶۰، واحد ۱و۲

زمینه فعالیت:کاشت و تولید و فرآوری گیاهان دارویی و مکملهای غذایی انسانی دام، طیور و آبزیان با منشاء گیاهی

نام: گروه شرکت های خسرو مدیسا طب-شرکت خسرو مدیسا سلامت

تلفن: ۸۲۴۳۰

فکس: ۸۸۰۳۴۰۰۷

وب سایت:www.kmtmed.com

پست الکترونیک:info@kmtmed.com

آدرس:تهران،خیابان سئول، خیابان آرارات، خیابان آفتاب، نبش بن بست۸، پلاک۳۴

زمینه فعالیت: تولید مواد ضدعفونی کننده ارگانیک و وسیع الطیف در زمینه های آب ، هوا ، سطوح و ....

نام شرکت: داروخانه داران دامپزشکی هماهنگ

تلفن: ۶۶۹۱۳۰۴۳

فکس: ۶۶۹۴۷۱۳۴

وب سایت:www.hamahangvp.com

پست الکترونیک:info@hamahangvp.com

آدرس: تهران،خیابان آزادی،خیابان اسکندری شمالی،تقاطع فرصت شیرازی، پلاک ۵۵، واحد ۶

زمینه فعالیت:واردات و توزیع داروها و افزودنی های دام و طیور و آبزیان

نام شرکت: دام ایلکا

تلفن: ۸۸۶۳۰۵۶۹-۸۸۰۲۹۴۲۲

فکس: ۸۸۲۲۹۰۴۷

وب سایت:www.damilka.com

پست الکترونیک:info@damilka.com

آدرس: تهران، خیابان شیخ بهایی جنوبی ، بلوار آزادگان، انتهای بن بست ۲۱ شرقی، پلاک یک، واحد یک، طبقه یک

زمینه فعالیت: انواع دارو، واکسن، مواد بیولوژیک و افزودنی های خوراک مربوط به دام، طیور و آبزیان

نام شرکت: داروسازی رویان دارو

تلفن: ۸۸۹۳۷۴۳۳

فکس: ۸۸۸۹۶۵۹۵

وب سایت:www.rooyandarou.com

پست الکترونیک:info@rooyandarou.com

آدرس: تهران، خیابان انقلاب، خیابان استاد نجات الهی، کوچه سلمان پاک، پلاک ۱۵، طبقه سوم

زمینه فعالیت: تولید و توزیع داروهای دام و طیور

نام شرکت: سواپارس (سهامی خاص)

تلفن: ۷-۸۸۳۴۵۰۴۶

فکس: ۸۸۳۲۵۸۶۹

وب سایت:www. SAVAPARS.com

پست الکترونیک:SAVA@SAVAPARS.COM

آدرس: تهران، خیابان کریم‌خان، ایرانشهر شمالی، خیابان آذرشهر، پلاک ۵، واحد ۳

زمینه فعالیت: واردات واکسن، دارو و مواد بیولوژیک

نام شرکت: عرشیا دارو

تلفن: ۰۴۱۳۳۲۹۵۲۰۰

فکس: ۰۴۱۳۳۲۹۵۴۰۰

وب سایت:www.arshiadarou.com

پست الکترونیک: arshia_darou@yahoo.com

آدرس: تبریز، ولیعصر، فلکه شریعتی، ساختمان آناهیتا، طبقه ۵، واحد ۱۵

زمینه فعالیت: واردات دارو و مواد بیولوژیک

نام شرکت: شرکت تحقیقاتی و داروسازی عرفان دارو

تلفن: ۹-۸۸۵۹۰۹۵۰

فکس:۸۸۳۷۲۰۶۱

وب سایت:www.erfandarou.com

پست الکترونیک:erfan@erfandarou.com

آدرس: تهران، شهرک غرب ، بلوار ایوانک، فلامک شمالی ، کوچه ۱۵، پلاک ۱۷، طبقه اول

زمینه فعالیت:تولید کننده انواع داروهای دام و طیور، محلولهای خوراکی، تزریقی،پنی سیلین ها، پودرهای مخلوط در دان،پودرهای مخلوط در آب

نام شرکت: کاربرد فن اوشن

تلفن: ۸۸۹۱۶۷۰۶

فکس: ۸۸۸۹۷۲۷۳

وب سایت:www.ocean-alf.com

پست الکترونیک:info@ocean-alf.com

آدرس: تهران، خیابان استاد نجات الهی (ویلا)، خیابان لباف، پلاک ۲۱، طبقه اول

زمینه فعالیت : ارائه تجهیزات آزمایشگاهی، نماینده انحصاری Retsch و Eltra آلمان و کوره های Carbolite انگلستان در ایران

نام شرکت: گلبید - ام اس دی

تلفن: ۱۲-۸۸۶۱۲۹۱۰

نمابر: ۸۸۶۱۲۹۱۳

پست الکترونیک : info@golbid.com

وب سایت: www.golbid.com

نشانی: تهران، خیابان سید جمال الدین اسد آبادی، خیابان ۶۴، پلاک ۱۳

زمینه فعالیت: وارد کننده داروها، واکسنها، مکمل های غذایی، وسایل و مواد تشخیص آزمایشگاهی،افزودنیهای خوراک دام و طیور

نام:گروه مهدامین

تلفن: ۶۴۰۷۹-۶۶۵۶۱۵۳۲-۶۶۵۶۱۵۱۷

فکس: ۶۶۵۶۱۵۲۲

وب سایت: www.mahdamingroup.com

پست الکتونیک:info@mahdamingroup.com

آدرس: تهران، خیابان توحید، خیابان شهید طوسی، پلاک ۱۲۱ ، طبقه ۶

زمینه فعالیت: واردات ، توزیع و فروش نهاده ها و افزودنی های خوراک دام و طیور و آبزیان

نام شرکت: شرکت نوترکس

تلفن: ۶-۸۸۷۲۷۶۴۴

فکس: ۸۸۷۲۸۱۵۰

وب سایت:www.nutrex.co.ir

پست الکترونیک:sorur.f@neda.net

آدرس: تهران، خیابان ولی عصر،پایین تر از پارک ساعی، برج سرو ساعی،طبقه چهاردهم، واحد ۱۴۰۵

زمینه فعالیت: تولیده کننده افزودنی های خوراک دام و طیور

نام شرکت: نیکان پخش بهپرور

تلفن: ۲-۶۶۵۹۷۷۴۱

فکس: ۶۶۹۴۲۴۹۵

وب سایت:www.npb.co.ir، www.vdn.ir

پست الکترونیک:info@npb.co.ir، info@vdn.ir

آدرس: تهران، میدان توحید، خیابان امیرلو، کوچه محمدی، پلاک ۲۳، طبقه اول

زمینه فعالیت: توزیع سراسری دارو، واکسن و مواد بیولوژیک دامپزشکی

نام شرکت: وتار طب

تلفن: ۴۲۹۷۷

فکس: ۸۸۶۷۵۵۶۹

وب سایت:www.vetarteb.com

پست الکترونیک: info@ vetarteb.com

آدرس: تهران ، خیابان آفریقا ، بعد از چهارراه جهان کودک ، جنب پارک خشایار ، برج افرا ، طبقه ۳ ، واحد ۳۱۸

زمینه فعالیت: واردات دارو و نهاده های دامپزشکی

نام شرکت: ویوا پارس

تلفن: ۶۶۱۲۱۱۳۱

فکس: ۶۶۴۲۳۹۹۷

وب سایت:www.vivapars.com

پست الکترونیک:info@ vivapars.com

زمینه فعالیت: واردات محصولات دامپزشکی از جمله دارو ، خوراک ، افزودنی و غیره

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