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Dear Scientist,

The third International Congress on Advances in Veterinary Sciences & Technics (icavst) was organized in Belgrade, Serbia. We are very happy for organizing this congress in such a beautiful city and country that we have strong historical ties.

We wanted to make this conference little bit special by bringing scientist together from different disciplines of veterinary area and also to open new research and cooperation fields for them. In this sense, we desired to bring the distinguished scientist together to get know each other and to develop and implement new joint projects.

The scientist joined the congress was from different country and mostly from Turkey. Total over the two hundred scientist were registered in the congress. The total number of submission were 159 and after a careful evaluation 116 submissions were accepted by our scientific committee and 27 of them were accepted as poster presentation, 5 of them were accepted as video presentation and, 84 of them were accepted as oral presentation and all those presentation was taken place in the conference booklet.

We would like to send our special thanks to Mr. Musa Köse and Mr. İsmet Uzun, ZENITH Group workers for their special efforts. and finally the most importantly I would like to thank to all the participants individually who came from far away to join this conference.

Chairmans

Dr. İlker Camkerten

Dr. Kerem Ural

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INVITED SPEAKERS

RECOMBINANT PROTEIN TECHNOLOGY IN VETERINARY MEDICINE

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Abstract:

The recombinant protein is a type of engineered protein that is produced in different forms to obtain useful products by modifying gene sequences. In the past, it was out of reach that the expression of target genes could be controlled to improve the desired properties of living things. In 1973, A. C. Y. Chang, H. W. Boyer, R. B. Helling, and S.N. Cohen reported in their study that the genes can be isolated and cloned by enzymatic digestion of the DNA molecules into smaller fragments and join these to a self-replicating plasmid followed by an introduction of this manufactured DNA molecule into bacteria. Shortly after this significant study, Chang and Cohen reported that joined gene product from unrelated bacterial species can be formed and multiplied using their aforementioned approach and this newly formed hybrid DNA molecules can generate biologically active and functional protein. Up to the last decade, this technology was used predominantly in human medicine. Recombinant DNA technology is playing a vital role in improving, monitoring and controlling health conditions by developing therapeutics and diagnostics. The first and perhaps the most renown example for the use of recombinant protein technology is the treatment of diabetes by the insulin hormone produced in *E. coli*. Prior to the development of this technology, diabetes was treated with insulin, which was isolated from the pancreas of farm animals. This could lead to problems such as product scarcity and the increase in disease risk. Prevalent utilization of this technology in veterinary medicine is to generate sub-unit antigens as the main component of farm and pet animal's vaccines and also to produce diagnostic kits for laboratory animal species mainly rats and mice that have a significant role in biomedical research. Many biopharmaceuticals (around 300) including therapeutic proteins and antibodies are in the market for use in human medicine conversely this number is quite few in veterinary medicine when compared. In this presentation, the current status and potential use of this technology in veterinary medicine will be discussed.

Keywords: Recombinant Protein, Diagnostics, Therapeutics

PROBIOTICS: POSSIBILITIES AND LIMITATIONS OF THEIR APPLICATION IN FOOD
AND FEED

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Abstract:

For a long time, microorganism-host relationships were considered from a pathogenic point of view and no attention was paid to most gut bacteria. More researches pointing that, microbiota is an active element of a healthy physiology and changes in microbiota are cause or a consequence of the diseases. These close relationships between gut microbiota, health, and disease, have led to great interest in using probiotics, which are defined as when consumed in adequate amounts, confer a health effect on the host. With progress over the past decade on the genetics of lactic acid bacteria and release of complete genome sequences for major probiotic species, the field is now armed with detailed information and sophisticated microbiological and bioinformatics tools. This review focuses on probiotics, their mechanisms of action, safety, and major health benefits in human and animal.

Keywords: Probiotics, Microbiota, Gut, Beneficial Microorganisms

ORAL PRESENTATION

**INVESTIGATION OF THE PREVALENCE OF *BRUCELLA CANIS* IN DOGS,
VETERINARIANS AND VETERINARY FACULTY STUDENTS IN
DIFFERENT PART OF TURKEY**

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Abstract:

Canine Brucellosis, the caused by *Brucella canis* (*B. canis*), is seen all over the world and the disease is characterized by abortion and infertility. *Brucella canis* is a zoonotic agent and is transmitted to humans by contact with infected dogs or dog secretions. The aim of this study was to determine the presence of antibodies against *Brucella canis* in dog serum collected from different provinces of Turkey and the seroprevalence in veterinarians and veterinary faculty students in some of the provinces using Microagglutination Test (MAT). Blood samples collected from 1559 dogs and 225 veterinarians and veterinary faculty students were examined for *B. canis* antibody titers using MAT method. In the MA test, twofold dilutions of serum samples were made with PBS in U-base microplates and an equal volume (25 µl) of *B.canis* antigen solution (Kitasato Institute, Tokyo, Japan) stained with Safranin-O was added. As a result of the study, *B. canis* antibody was found to be positive in 12 (0.8%) of 1559 dog serum and in 13 (5.8%) of 225 human serum. Conclusion: 5.8% of the *B.canis* seropositivity we have identified in the risk groups can give an idea of the state of the infection between the Turkish veterinarians and veterinary faculty students.

Keywords: *Brucella Canis*, Antibody, Microagglutination Test, Seroprevalence, Seropositivity

DEVELOPMENT OF ANTIGEN ELISA TO DETECT OF *CRYPTOSPORIDIUM PARVUM* FROM FECAL SAMPLES

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Abstract:

Cryptosporidium species are an obligate intracellular enteric protozoan parasite which have with a large host distribution including humans, domestic and wild animals around the world. Diarrhea is one of the most important symptoms of cryptosporidiosis and causes high economic losses in farm animals. In the diagnosis of cryptosporidiosis, microscopic examination is fast and cheap, however, it is long time consuming and requires expertise, has low specificity and can lead to false positive results. Molecular approaches used for diagnosis of cryptosporidiosis have high sensitivity and specificity. However, these methods cannot be applied easily because of specialized equipment, high cost, and expertise. ELISA allows to examination of a large number of samples in a short time and the results are objectively evaluated according to obtained optical densities. In this study, it was aimed to develop antigen ELISA assay for detection of *C. parvum*. For this purpose purified and freeze-thawed oocysts were used as an antigen to produce polyclonal sera from rabbits. Immunization schedule was done 4 consecutive times by two weeks intervals. Polyclonal sera were collected before each immunization and subjected to indirect ELISA to determine antibody titers. The highest IgG titer was found 1/51200 subsequently, these antibodies were purified and used as capture. Purified oocysts were utilized to optimize the dilution amount of polyclonal antibodies. Mouse polyclonal sera were used as the detection antibody and HRP-labeled anti-mouse antibody was used as conjugate. Fecal samples which confirmed as positive or negative using by PCR analysis were used to detect the specificity and sensitivity of ELISA. Totally 80 fecal samples (40 positives&40 negatives with *Cryptosporidium* spp.) were analyzed with the developed antigen ELISA in the present study. The sensitivity of the test was evaluated as 70% and the specificity was determined as 72.5%. Further validation steps are necessary to optimize the reliability of the test and enhance the detection limit. In conclusion, this study is promising a fast and easy detection of *C. parvum* antigens from fecal samples.

Keywords: Antigen ELISA, *Cryptosporidium Parvum*, Diarrhea

THE PROTECTIVE ROLE OF BROMELAIN AGAINST NICKEL TOXICATION IN RATS

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Abstract:

The aim of this study was to investigate bromelain use in nickel sulfate toxication as a protective measure. In this study antioxidative effects in liver, kidneys and testes of orally administered bromelain on rats were evaluated against harmful effects of ten days nickel sulfate administration (20 mg/kg/day) over these organs. Rats were divided into experimental and control groups (Group 1, n = 6) randomly: Group 2 (Nickel sulfate 20 mg/kg/day, i.p., n = 6), Group 3 (Bromelain 20 mg/kg/day, oral, n = 6), Group 4 (Bromelain 20 mg /kg/day, orally and Nickel sulfate 20 mg/kg/day, i.p.n = 6). We found histopathologic degenerative and necrotic changes in liver, kidney and testis tissues obtained from Group 2 subjects (Nickel sulfate 20 mg/kg/day, i.p.). On the other hand, histopathological alterations were reduced significantly in Group 4 as compared to other groups. Increased apoptosis and caspase-3, -8, -9 and also TUNEL activity were detected in Group 2. However, caspase-3, -8, -9 and also TUNEL were reduced in Group 4.

Furthermore, there were alterations in the levels of antioxidant enzymes in Groups 5 and 6 in comparison to other groups. The results of the present study indicate that the protective effects of bromelain on histopathologic findings in rats exposed to nickel sulfate.

Keywords: Bromelain, Nickel Sulphate, Rat, Toxicity

FIRST SEROEPIDEMIOLOGICAL EVIDENCE OF *CCHFV* IN WILD BOARS IN ENDEMIC REGIONS OF TURKEY: A RETROSPECTIVE STUDY

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Abstract:

Crimean-Congo hemorrhagic fever orthonairovirus (CCHFV) is a tick-borne, negative-sense RNA virus belongs to the Orthonairovirus genus of the Nairoviridae family in Bunyavirales order. The clinical course of the *CCHFV* only occurs in humans with a high mortality rate (10-50%) contrarily there is no clinical phase on other animal species. Transmission mainly occurs tick-vertebrate host-tick cycle in natural conditions. Virus isolated from more than 30 tick species however *Hyalomma species* serve as main vector of the virus. Serological evidence of virus first determined in 1970 from humans in western regions of Turkey, but first clinical cases of diseases have been reported in 2002 and have increased since then. *Crimean-Congo hemorrhagic fever (CCHF)* has been described from different countries of Asia, Africa, and Europe There are wide range of seroepidemiologic studies in endemic regions from several animal species including cattle, horses, sheep, goats, domestic pigs, camels, dogs, chickens and ostriches. Seroepidemiologic studies on animal species have been found in cattle 13.0 %, goats 66.0 %, and sheep 31.8% in Turkey. However, there is no evidence showing that specific IgG antibodies against *CCHFV* have been detected in wild boars. Besides there are only three individual seroprevalence studies from Egypt, India and Russian in domestic pigs have been reported and no IgG antibodies were determined. In this study, we reported first seroepidemiologic evidence that shows presence of specific IgG antibodies in wild boars from Turkey. The study has been conducted on 252 sera samples collected from wild boars in different part of Turkey in 2011-2012. Sera samples were tested with commercial human *CCHFV* IgG ELISA kit(Vectorbest, Novosibirsk, Russia). ELISA kit has been modified by using goat anti-pig IgG HRP (Abcam, ab6915) conjugate. Seropositivity was determined in 8 of 252 (3.17%) cases examined. In conclusion this report is the first seroepidemiological evidence of *CCHFV* in wild boars in endemic regions of Turkey.

Keywords: *CCHFV*, Boars, Seroepidemiologic

QUANTITATIVE AND COST-EFFECTIVE ANALYSIS OF DIFFERENT STEM CELLS ISOLATION METHODS FROM FAT AND BONE MARROW

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Abstract:

The therapeutic potential of mesenchymal stromal cells (MSC) in veterinary medicine has been documented in many reports (regeneration of tissues, anti-inflammatory effect, neurodegenerative disease). There are different sources of MSC, the adipose tissue and bone marrow are two of them. We have tested the yield of MSC, and cost-effectivity of different isolation methods from adipose tissue and bone-marrow (on rats, rabbits, and horse).

Bone-marrow samples were spirated by needle (crest or femurs), fat was extracted from three sites: intrabdominal fat, kidney area, intra-scapulas area. The next step was washing of extracted tissue and digestion (temperature digestion, 2 variants - with or without collagenase). Extracted fresh mononuclear cells were seeded at 5×10^4 cells/cm² using DMEM medium, polystyrene flask, and CO₂ incubator. The cell culture was washed after 3 and 6 days, The final cell yield was computed at day 7.

The viability of MSC was similar for all methods and sources. The most effective methods for fat digestion was temperature digestion with the addition of collagenase. The rabbit bone marrow tissue from iliac crests gives 1.3×10^6 MSC, which was 140 ± 40 % of yield from the fat of intra-scapulas area and 180 ± 45 % of yield from the fat of intraabdominal area (% ratio to value from the most effective fat tissue digestion method). The rat display different ratio, the rat bone marrow tissue from femurs gives 0.3×10^6 MSC, which was 85 ± 22 % of yield from the fat of intra-scapulas area and 76 ± 14 % of yield from the fat of kidney area. All fat sample from a horse had a similar yield (0.7×10^6 MSC per 1ml). The cost-analysis (computed from the actual price of single-use components and solutions for the most effective isolation method on rabbit, rat, and horse) gives value 250, 210 and 290 Euro / million of MSC.

Keywords: Stem Cells, MSC, Adipose Tissue, Bone Marrow

Acknowledgements: The study was supported by the project MPO TRIO FV20422.

DETERMINATION OF CYCLOOXYGENASE-2 (COX-2), HIGH-MOBILITY GROUP BOX 1 PROTEIN (HMGB-1) AND CD68 EXPRESSION IN THE LUNG TISSUE IN SHEEP FIBRINOUS BRONCHOPNEUMONIA

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Abstract:

In this study, it was aimed to determine the expression of some cytokines such as Cyclooxygenase-2 (COX-2), High Mobility Group Box-1 (HMGB-1) and CD68 by immunohistochemical methods and histopathologic findings in lung tissue in fibrinous bronchopneumonia of sheep. For this purpose, 40 sheep lung tissues were used between November 2014 and December 2017 brought for necropsy to Aksaray University Faculty of Veterinary Medicine Department of Pathology. After the necropsy, the lung tissues grossly diagnosed as fibrinous bronchopneumonia were subjected to histological tissue processing, followed by histopathologic and immunohistochemical staining. In histopathologic examinations, congestion, red hepatization (consolidation) and grey hepatization stages were detected in the lung tissues of the sheep. In such cases, fibrin masses accumulation in some alveolar lumens in addition to inflammatory cell infiltrations at varying degrees in alveolar and bronchiolar lumens. In the interalveolar septum, thickening was observed due to fibrin mass, edema, and thrombotic vessels. Immunohistochemically, it was determined that COX-2 and HMGB-1 proteins showed positive reactions, especially bronchial, bronchiolar and alveolar epithelia, as well as goblet cells and macrophages. CD68 protein was found to be expressed in alveolar macrophages. Thus, cytokines such as COX-2 and HMGB-1, which have been implicated in the chronic inflammatory response and recently discovered in recent years, have also been shown to be expressed in fibrinous bronchopneumonia in sheep.

Keywords: Cox-2, Histopathology, Hmgb-1, Immunohistochemistry, Sheep

**HISTOPATHOLOGICAL, IMMUNOHISTOCHEMICAL AND
PARASITOLOGICAL PATHOGENESIS OF *COENURUS CEREBRALIS* IN
SHEEP**

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Abstract:

This study was aimed at the investigation of the presence and pathogenesis of *Coenurus cerebralis* infection in 15 sheep, which displayed compulsive circling and were submitted to the Pathology Department of Harran University, Faculty of Veterinary Medicine for necropsy between 2012-2016, by means of the histopathological and immunohistochemical examination of central nervous system lesions. Species identification was made on the basis of the PCR analysis and parasitological examination of the cysts. *Coenurus cerebralis* cysts were detected in only the cerebral tissue of 13 and both the cerebral and cerebellar tissues of 2 of the sheep. Out of the 33 parasite cysts, most (21.21%) were localised to the right and left frontal lobes of the cerebrum. While the largest cyst measured 6x5 cm, the smallest cyst was 2x2 cm in size. The highest and lowest numbers of scolices were 55 and 21, respectively, and the number of rostellar hooks ranged between 22 and 30. Histopathological examination demonstrated the presence of typical parasitic granulomatous inflammatory foci. Immunohistochemical staining showed that the most common cells in the periphery of the parasite cysts were, in order of number, GFAP, CD163, CD3 and CD79 α -positive cells, thus supporting the role of cellular defense in the pathogenesis of *Coenurus cerebralis* in sheep.

Keywords: *Coenurus Cerebralis*, Histopathology, PCR, Immunohistochemistry, Sheep

A NEGLETED VIRUS INFECTION IN “CALF YEAR, 2018”: BVDV

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Abstract:

Bovine Virus Diarrhoea Virus (BVDV) infection, due to the socio-economic importance in cattle industrie, is an important disease listed in World Organisation for Animal Health (WOAH), previously referred to as Office International des Epizooties (OIE). It is known that non-cytopathic BVDV strains can causes a lifelong persistent infection (PI) in bovine fetuses infected transplacentaly, which have immature immune system during early stage of gestation. Transplacental infection may result early embryonic deaths, resorption of fluids from the fetus that results in mummification, abortions, stillbirths, teratogenic clinical signs or congenital anomalia in neonatal calves. If all these mentioned aspects are taken into consideration, BVDV infection is an important influence responsible for calf losses.

In this pilot study, we have investigated the samples obtained from a dairy cattle herd, which had similar symptoms to BVDV (abortions, stillbirths, congetinal anomalia, blind calves and weak or premature calves). Totally, 1270 animals were tested in this study (950=female, 320=male). 20 of all tested animals have found persistently infected with BVDV. We have suggested removing PI animals from the herd. Additionally, we have monitored all newborn animals after sampling time. The eradication program is ongoing.

BVDV is an important agent both worldwide and in our country responsible for calf losses. Significant gains have been achieved in fighting infection by the measures taken in order to reduce the animal losses occurred in this herd.

Keywords: BVDV, Calf Losses, Turkey

THE IMPORTANCE OF MUTUAL USE OF WATER BOWLS AS A TRANSMISSION ROUTE FOR COMPANION ANIMALS

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Abstract:

Free-roaming companion animals share same habitat and may transmit individual infection to each other. In this regards, many viruses may have circulated interspecies, which has a problem for animal health. Especially, coronavirus, parvovirus and adenovirus are most prevalent contagious viruses among free-roaming companion animals.

Coronaviruses are normally a-pathogen agents, but it can be generalized and mutated, caused an immunosuppressive effect for infected organism. Parvoviruses are also highly contagious and immunosuppressive viral agents that affects domestic and/or wild dogs and cats. Adenoviruses are non-enveloped, resistant to environmental conditions and notable agents, which effects wide-range population from animals to human. All mentioned viruses are highly contagious that can be found all around the world.

We aimed in this study to investigate the presence of these mentioned viruses in mutual use of water bowls (n=3) for companion animals put on the street by the animal lovers. We have not any positivity in terms of feline and canine coronaviruses and parvoviruses. But, we have detected Adenovirus in mentioned water samples based on partial Hexon gene region, which constitutes the major virus capsid protein, by molecular techniques.

Our results showed that viral infectious agents can be transmitted due to the common use materials and may be a source that can infect different species.

Keywords: Companion Animals, Environmental Factors, Virus Transmission,

**EXPRESSION OF NICOTINAMIDE NUCLEOTIDE
ADENYLYLTRANSFERASE 3 (NMNAT3) AND INDUCIBLE NITRIC OXIDE
SYNTHASE (INOS) IN THE BOVINE LUNGS WITH CYSTIC
ECHINOCOCCOSIS**

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Abstract:

Cystic echinococcosis is a zoonotic disease with worldwide distribution caused by *Echinococcus granulosus*, represents a substantial global health problem. Hydatid disease (*Echinococcus*) has a remarkable negative effect on the health of people and the economic development of the country. The objective of this study was to investigate the nicotinamide nucleotide adenylyltransferase 3 (NMNAT3) and inducible nitric oxide synthase (iNOS) expression in bovine lungs infected with *Echinococcus granulosus* and to identify whether they have any correlation with pulmoner pathology. For this purpose, 30 bovine lung tissues were used between January 2016 and December 2016 collected in Kırıkkale slaughterhouse. In histopathologic examinations, proliferation of fibrous connective tissue and infiltration of mononuclear cells were detected in the lung tissues of the bovine. Most of the cysts were seen to be quite thick capsule. There was also a cellular line rich in abundant fibroblasts and mononuclear cells. The cyst wall was found to be an eosinophilic laminar structure. There was infiltration with lymphocytes and macrophages, especially eosinophils and giant cells. Immunohistochemically, it was determined that NMNAT3 and iNOS showed positive reactions, bronchial, bronchiolar and alveolar epithelia as well as macrophages. These results suggest that increased levels of NO might contribute to pulmonary pathology related with *Echinococcus granulosus*.

Keywords: NMNAT3, Inos, *Echinococcus Granulosus*, Pulmoner Pathology

SECRETORY EXPRESSION OF BOVINE LACTOFERRIN IN *PICHIA PASTORIS*

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Abstract:

Lactoferrin is an 80 kDa glycoprotein exerting immune function and has iron binding properties by bearing transferrin like domains is found in many biological fluids as mainly synthesized by mucosal epithelial cells.

Recombinant DNA technology involves excising and combing DNA molecules from different biological species and making new combinations by genetic engineering technology which are normally not found in nature. Recombinant DNA is the name given to the new DNA engineered molecule. By the help of this technology it is possible to synthesize the proteins that already not expressed by the host organisms such as bacteria and yeast. One of the first examples in this technology is to produce human insulin hormone in *E. coli* for the treatment of diabetes.

In our study bovine lactoferrin protein encoding gene is transferred to the yeast *P.pastoris*, which is not normally expressed by any strain of the yeast species. Constructed plasmid PPIC9_bLTF bearing lactoferrin gene was transferred by electroporation and transformants were selected by Minimal Dextrose medium which is deficient in histidine. To date even there are several reports on expressing mammalian lactoferrin in different hosts such as bacteria and yeast this is the first study explaining secretory expression of bovine lactoferrin in a eukaryotic expression system. Lactoferrin is an important component of the immune system having wide range antimicrobial activities against bacteria, viruses, fungi and parasites; It plays a role in innate immunity, primarily in the mucous membranes. Due to these features, in recent years the possible treatment opportunities have begun to be evaluated and positive results have been reported in both humans and in animals. Besides these the molecule is demonstrating anti-inflammatory and anticancer activities.

The expressed lactoferrin has similar antigenic properties with native bovine lactoferrin that is demonstrated by western blotting and has high potential of presenting above mentioned properties that remains to be evaluated by further studies.

Keywords: Recombinant DNA, Protein Expression, Lactoferrin, *P.Pastoris*

MORPHOMETRIC ANALYSIS OF THE SKULL IN THE GAZELLE (*GAZELLA SUBGUTTUROSA*) BY USING THREE-DIMENSIONAL COMPUTED TOMOGRAPHY

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Abstract:

The objective of this study was to present the measurements of skull bones in gazelles (*Gazella subgutturosa*) raised in Sanliurfa province of Turkey. In the study skull samples of 5 female and 5 male gazelles which died on natural causes were used. Images of 0.625 mm thickness was obtained by using a three-dimensional computed tomography of 80 kV MA, 639 mGY. Osteometrical measurements were performed for 36 parameters and cephalometric indices by using MIMICS 12.1 (The Materialise Group, Leuven, Belgium) program. All investigated features were expressed as mean +SD. Significant differences between females and males were found for the measurements of neurocranium width (5.05 ± 0.24 and 5.91 ± 0.29 cm), vertical diameter of orbita (3.02 ± 0.07 and 3.34 ± 0.11 cm), and the distance between two jugular processes (3.14 ± 0.40 and 4.59 ± 0.26 cm). Skull index, cranial index, index of the foramen magnum and orbital index values were found to be 46.75 ± 1.06 , 74.34 ± 5.32 , 78.20 ± 3.13 and 103.82 ± 2.34 , respectively. No statistically significant difference was observed between females and males for index values. These results provide detailed knowledge of the anatomical characteristics of the skull in the gazelles. We suggest that the data obtained from the study will contribute to the detection of the differences with respect to typology between different gazelle species.

Keywords: Computed Tomography, Gazelle, Morphometry, Skull

Acknowledgements: This study was supported by Scientific Research Center of Harran University with K18223 project number.

USING OF 3D PRINTING EQUINE DIGIT SKELETON MODEL IN VETERINARY OSTEOLOGY

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Abstract:

With the development of medical imaging techniques and 3D printing technologies, using of 3D models have increased by degrees in anatomy education as well as pre-surgical operation planning. There is a growing trend for educators, operators and researchers to produce their own models for using their own purposes. Equine digit is the most common area of lameness. Thus, teaching of the bonny structures are essential for veterinary osteology and surgery. The aim of the preliminary study is to point out using 3D printing equine foot skeleton models with all the advantages and disadvantages such as anatomical accuracy, accessibility and expenditure . The four equine foot cadavers that have been using in anatomy lab were used for the study. The cadavers were scanned by multi detector CT. Segmentation, surface generation and post-processing of the DICOM images were virtually performed and converted into a STL files. The FDM printers and PLA filaments were used in layer-by-layer 3D printing. The phalanges and sesamoid bones of the equine digit were printed in high levels anatomical accuracy on evaluation for the appearance of surface detail. The rapid prototyping replicas were hard to break and easy to manipulate for making anatomical preparations. All of the key anatomical features were shown in 3D prototypes. The Bone processes were well distinguished, the openings, notches and attachment surfaces for the joints and soft tissues were present especially on distal phalanges. The 3D printing bone replicas are anatomically accurate and identical to organic bone specimens. The models can also be manufactured by reasonable price. We have shown that it is possible to create an educational and training models. In addition to bone models, more detailed anatomical models include soft tissues can be beneficial alternative for podiatry education.

Keywords: Anatomy, Equine Digit, 3D Printing

COMPARISON OF THE VOLUME FRACTION VALUES OF GREY MATTER ON CERVICAL ENLARGEMENT OF THE SPINAL CORD IN CHICKEN AND QUAIL

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Abstract:

Stereological methods have frequently been used in the estimation of morphometric measurements on complex biological structures. Unbiased, realistic and quantitative results can be obtained. The aim of this study was to estimate and compare volume fraction values of grey matter (substantia grisea) in the cervical enlargement (intumescentia cervicalis) using stereological methods for two different types of birds. Ten pairs of quails and chickens were included to this study as one of them is flying and the other one is flightless bird species. The tissues cut into serial sections of 5 µm thickness were selected according to systematic random sampling and stained with cresyl violet. Volume and volume fractions were calculated in accordance with the Cavalieri principle. Student's t test was used to evaluate volume fraction differences among the species. The volume fractions of grey matter in cervical enlargement of chicken and quail were 0.277 ± 0.005 and 0.346 ± 0.014 (Mean \pm Standart Deviation), respectively ($p < 0.001$). There was a significant difference between chicken and quail cervical enlargements in terms of volume fraction values of grey matter. We can state that the volume fraction of grey matter in a flying bird is significantly higher when compared with a flightless bird. On the other hand, Cavalieri principle was considered as an unbiased, accurate and effective method for volume and volume fraction estimations.

Keywords: Cavalieri Principle, Cervical Enlargement, Chicken, Quail, Volume Fraction

HISTOMORPHOLOGICAL STRUCTURE OF PECTEN OCULI IN PIGEONS (*COLUMBIDAE COLUMBIFORMES*)

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Abstract:

It is aimed to research the histomorphological structure of pecten oculi in pigeons and to suggest the differences between other types of avian. Tissue samples from healthy eyes obtained from two pigeons came to the animal hospital were used. Tissue samples were fixed in 10% neutral-buffered formalin solution for 24 hours. After fixation samples were treated routine procedure and blocked. Serial sections were taken from the blocked. Those sections were examined under the microscope after stained with by Crossman's triple stain. The pecten oculi projects from the optic nerve head into the vitreous chamber. Differently, it was seen that retina in pigeons was not completely separate from pecten base and ganglion cell layer were continued for a bit more. There were vessels with wide diameters on the basal part where pecten was located. This vessel was found to have originated from choroid. It was also seen that vessel diameters got smaller as it went to the apical from the basal. So, the vessels were classified as primary, secondary, and tertiary vessel. Diameters of 20 randomly chosen vessels from each sections were measured and an average diameter value was found. There was also a little amount of melanocyte in the basal part of the pecten. These melanocytes were based on the laminated vasculosa of the choroid. Pecten oculi were covered pecteneal membrane. Besides pecteneal hyalocytes were found in the pecteneal limiting membrane. According to the findings of the study, it was first proven to have originated from choroid that pigeon's veins and melanocytes at the pecten oculi.

Keywords: Vessel, Pigeon, Histomorphology, Melanocyte, Pecten Oculi.

HISTOMORPHOLOGICAL STRUCTURE OF THE PECTEN OCULI OF THE GEESE (*ANSER ANSER*)

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Abstract:

In this study, it was aimed to determine the histological and morphological characteristics of pecten oculi of the geese (*Anser anser*) and to reveal similarities and differences with other poultry species. In the study, pecten oculi specimens taken from 6 geese eyes were used as the material. In this species, the pecten is large relative to the size of the eye and is of the pleated type. It consists of 10-12 accordion folds that are joined apically by a bridge of tissue which holds the pecten in a fan-like shape widest at its base. Within each fold are many melanocytes, numerous capillaries as well as larger supply and drainage vessels. It was determined that three or four vessels crossed the nerve opticus and formed pecten veins. Along with the emergence of veins, melanocytes were also seen. When the folds extending towards the vitreous were examined, it was seen that large diameter vessels were surrounded by capillary vessels. It was found that melanocytes surrounded the veins in the curves. As the folds went to the periphery, the melanocyte density increased and the tip of the pecten folds almost completely covered the melanocytes. Macrophages as hyalocytes, were found in the pecten oculi folds. This study found that pecten oculi of geese had similar characteristics to birds such as ducks and swans, including those of the Anseriformes family. This finding suggests that pecten oculi shows structural differences according to the habitat, feeding and hunting patterns of the birds. All these findings indicate that pecten oculi fulfills many important metabolic functions in the eyes of the birds.

Keywords: Avian, Geese, Histology, Pecten

OSTEOGENIC DIFFERENTIATION OF CANINE MESENCHYMAL STEM CELLS ON β -TCP

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Abstract:

Mesenchymal stem cells (MSCs) are adult stem cells that have a capacity for self-renewal, proliferation and differentiation. Adipose tissue which is one of the sources of MSCs has many advantages compared to other MSCs sources. In the field of orthopedics, adipose tissue derived MSCs are used for the treatment of bone diseases in humans. Today, the number of studies regarding the use of MSCs in combination with biomaterials to treat bone fractures is increasing day by day. Because of their biocompatibility and bioactivity, β -TCP (β -tricalcium phosphate) has been widely used as bone substitutes for bone regeneration and it has been shown that this biomaterial promotes the differentiation and proliferation of MSCs. However, there are not enough studies on the use of MSCs with biomaterials in the research of orthopedic regenerative therapies in Veterinary Medicine.

The purpose of this study was to promote proliferation and osteogenic differentiation of MSCs that isolated from the adipose tissue of canines on β -TCP biomaterials. For this, MSCs obtained by explant culture method and they were stimulated towards adipogenic, osteogenic, chondrogenic lineages for characterization of MSCs. For seeding on β -TCP, MSCs were collected after the third passage. MTT (Cell viability assay) analysis was performed at 1., 7., 14. and 21 days to test the proliferation of β -TCP biomaterials. A stereomicroscope was used to demonstrate the porous structure of β -TCP which are used to mimic the extracellular matrix of three-dimensional bone tissue.

As a result, we confirmed that β -TCP support proliferation and osteogenic differentiation of canine MSCs. We observed that the porous structure of β -TCP is suitable for bone tissue engineering. In addition, we did not encounter any side effect or intoxication caused exclusively by β -TCP. Because of these advantages, β -TCP is thought to be a biomaterial that can be used to treat animal bone diseases.

Keywords: Mesenchymal Stem Cell, β -TCP, Biomaterial, Canine, Osteogenic Differentiation

HISTOCHEMICAL CHARACTERISTICS OF THE LACRIMAL GLANDS IN CATTLE

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Abstract:

The lacrimal gland (LG) is one of the accessory structures of the eye which located superiorly and laterally to each eyeball. The role of the LG is production and secretion of tears which clean cornea and conjunctiva help to maintain their health. The tear film consists of a superficial oily layer, a central aqueous layer and thin glycoprotein layer covering the cornea. The aqueous layer is the major component of the tear film which composed of water, electrolytes, functional proteins and some immunoglobulins. In many species including cattle, the aqueous layer of the tear film is produced by the LG.

The purpose of this study was to demonstrate the carbohydrate histochemistry of the lacrimal gland in cattle. For this, 5 adult healthy cattle were selected and their LG was removed. The samples were stained to demonstrate the general structure of LG and typical tubuloaciner structure was observed. Each section was stained with Periodic Acid Schiff (PAS), Alcian blue pH 2.5 (AB), Periodic Acid Schiff - Alcian Blue (PAS-AB), Aldehyde Fuchsin (AF) and Periodic Acid Schiff with Diastase (PAS-DIAS) for histochemical analysis of the LG. PAS staining showed numerous cells with the strong positive reaction in acini and digestion with diastase revealed no change in PAS staining intensity. Both acini and tubules were stained positive with AB. It was also observed the presence of weakly positive reactions the acinus cells which stained with the AF.

As a result, LG which has intense PAS-positive cells is a seromucous gland and its tubuloalveolar structure is composed of acini and ducts. The LG is important as it has a significant role in maintaining the stability of the microenvironment of the ocular surface that is constantly exposed to antigen in the farm animals.

Keywords: Lacrimal Gland, Histochemistry, Cattle, Tear Film

EVALUATION OF SHOULDER AND ELBOW JOINTS IN NEW ZEALAND RABBIT (*ORYCTOLAGUS CUNICULUS L.*) BY MICRO-COMPUTED TOMOGRAPHY TECHNIQUE

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Abstract:

Micro-computed tomography (μ CT) is a modern imaging technique to investigate bone morphology of lab animals. The morphology of bony tissue changes and joint defects in animals can be easily visualized by μ CT. Using μ CT imaging data, 3D images can be produced and used as a guide for the anatomy of the surgical region. In this study, it is aimed to visualize the shoulder and elbow joints and produce 3D models of these regions and also perform biometric measurements using 3D joint models considering the sex variations. This study is a part of the PhD thesis and was supported by The Coordination Office of Ankara University Scientific Research Projects. All husbandry and experimental procedures were approved by Ankara University Animal Experiments Local Ethics Committee (Decision no.: 2017-5-32). In this study, a total of 14 adult New Zealand rabbits (7 males, 7 females) were used. After the animals were euthanized, joints of forelimbs were imaged with the μ CT device (Super Argus PET/CT, Sedecal, Spain). 3D models of joints were reconstructed with 3D Slicer software (3D Slicer, GitHub, San Francisco). Some prominent anatomical structures of joints were measured over 3D reconstructions. The measured data were evaluated in terms of gender. Anatomical structures were clearly observed in transversal, frontal and sagittal planes. 3D models of joint regions were well reconstructed with the 3D software. The breadth of the glenoid cavity of the right scapula in male and female rabbits was $9,391\pm 0,442$ mm (mean \pm standard deviation) and $9,126\pm 0,410$ mm, respectively. The depth of the proximal ending of right humerus of male and female rabbits was $13,971\pm 0,406$ mm and $13,904\pm 0,265$ mm, respectively. 3D models can be conveniently used in veterinary surgery and radiology as well as in veterinary anatomy education. It is also thought that the healthy anatomical structures and biometric measurements of small animals can be obtained by μ CT to support experimental orthopedic studies on animals.

Keywords: Elbow Joint, Measurement, Micro-Computed Tomography, New Zealand Rabbit, Shoulder Joint, Three-Dimensional

THE EFFECT OF CAPSAICIN ON HEAT SHOCK PROTEIN 70 IN DIFFERENT DEVELOPMENTAL PERIODS RATS' OVARIES

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Abstract:

In this study we aimed to show in vivo analysis of the changes in HSP70 expression in the ovaries of the capsaicin-treated rats in puberty and adulthood periods.

As a material, 60 Sprague Dawley rats were used. Rat were divided into three treatment groups (control, treated, vehicle with two time points (42-day-old and 70-day-old). Rats were divided into two groups as puberty (42-day-old) and adulthood (70-day-old), and each group was divided into three sub-groups as the experiment, the vehicle and the control. Starting from 21 days upto 42 and 70 days, the experiment group was given a daily subcutaneous implementation of 1 mg/kg of capsaicin; the vehicle group was given a vehicle solution in the same amount injected the experiment group and the control group was not any implementations. In ovaries of all groups, HSP70 expression was shown in granulosa cells, interstitial cells, theca follicle cells and corpus luteum luteal cells.

As a result; The immune reaction was observed in pubertal and adult rat ovaries that HSP70 is not inactivated with age, but the reaction density is changed. In the experimental group, it was determined that the reaction intensity increased especially in the granulosa cells with age and there was no significant difference in the other regions.

Keywords: Capsaicin, HSP70, Immunohistochemistry, Ovaries, Rat

EFFECT OF SPECIES ON CHEMICAL COMPOSITION AND POTENTIAL NUTRITIVE VALUE OF LATHYRUS HAYS

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Abstract:

Lathyrus species is the one of the important legume species which have an important role in native pasture in Mediterranean environments in terms of providing protein, fibre and mineral for grazing ruminants. The aim of the current experiment was to determine the effect of species on the chemical composition and potential nutritive value of Lathyrus hays. Hays were obtained from six Lathyrus species at flowering stage. Chemical composition of hays was determined using the methods described by AOAC (1990). Neutral detergent fiber and acid detergent fiber content of hay were determined with the method described by Van Soest (1991). Gas productions of hay samples were determined using the methods of Menke et al (1979). Methane content of gas produced was determined using the infrared methane analyzer. The metabolisable energy (MJ/kg DM) and organic matter digestibility (OMD) of hays were calculated using equations of Menke and Steingass (1988) as follows: ME (MJ/kg DM) = 2.20 + 0.1357 GP + 0.057 CP + 0.002859EE², OMD (%) = 14.88 + 0.8893 GP + 0.448 CP + 0.651CA. The Truly digested substrate (TDS), partitioning factor (PF₂₄), microbial protein (MP) and efficiency of microbial protein (EMP) of hays were estimated using the equations suggested by Blümmel et al (1997) as follows. TDS = Substrate incubated (mg) – the residue (mg), PF₂₄ = TDS / GP₂₄, MP (mg/g DM) = TDS – (GP₂₄ X 2.2 mg/ml), EMP = (TDS – (GP₂₄ X 2.2 mg/ml))/TDS. Species had a significant effect on the dry matter(DM), crude ash (CA);, crude protein (CP), acid detergent fiber(ADF), ether extract(EE), gas production and methane production, TDS, PF, EMP, OMD and ME of hays. There are significant variation among species in terms of the chemical composition, gas production, methane production, TDS, PF, EMP, OMD and ME of Lathyrus hays obtained from different species.

Keywords: Lathyrus, Methane, Metabolisable Energy

EFFECT OF PYRACANTHA COCCINEA SEED EXTRACT ON GAS, METHANE EMISSION AND DIGESTIBILITY OF ALFALFA HAY

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Abstract:

Recently considerable attention has been given to manipulate the efficiency of ruminal fermentation using the leaf and seed of tree leaves. *Pyracantha coccinea* is one of the shrubs grown and produced considerable amount seed. However there is no information on the effect of *Pyracantha coccinea* seed extract on ruminal fermentation in vitro. The aim of the current experiment was to determine the effect of *Pyracantha coccinea* seed extract on gas, methane emission and digestibility of alfalfa hay. Fresh, frozen and dried seed of *Pyracantha coccinea* were chopped and extracted at 10 g seed / 80 ml of solvent mixture (10 methanol, 10 ml ethanol and 80 ml distilled water) for 72 h. Seed extract was tested at 1.2 ml/g DM of alfalfa hay (500 mg) in five replicates for each treatment using in vitro gas production technique for 24 h (Menke et al (1979)). The metabolisable energy (MJ/kg DM) and organic matter digestibility (OMD) of alfalfa hay were calculated using equations of Menke and Steingass (1988) as follows: ME (MJ/kg DM) = 2.20 + 0.1357 GP + 0.057 CP + 0.002859EE², OMD (%) = 14.88 + 0.8893 GP + 0.448 CP + 0.651CA. The Truly digested substrate (TDS), partitioning factor (PF₂₄), microbial protein (MP) and efficiency of microbial protein (EMP) of alfalfa hay were estimated using the equations suggested by Blümmel et al (1997) as follows. TDS = Substrate incubated (mg) – the residue (mg), PF₂₄= TDS / GP₂₄, MP (mg/g DM) = TDS – (GP₂₄ X 2.2 mg/ml), EMP = (TDS – (GP₂₄ X 2.2 mg/ml))/TDS. *Pyracantha coccinea* seed extract decreased gas production, OMD and ME of alfalfa hay whereas *Pyracantha coccinea* seed extract increased methane emission, TDS, PF, MY EMP of alfalfa hay. *Pyracantha coccinea* seed extract can be used to improve digestibility, PF, MY and EMP of alfalfa hay.

Keywords: *Pyracantha Coccinea* Seed Extract, Gas Production, Methane, Microbial Yield

THRESHOLD VALUE OF NON-ESTERIFIED FATTY ACID (NEFA) LEVELS FOR ESTIMATING LAMENESS IN LOCAL FARMS: AYDIN EXPERIENCE

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Abstract:

In this study the aim was to evaluate postpartum lameness associated with (Non-esterified fatty acid) NEFA levels of transition dairy cattle in Aydin/Turkey province. For this purpose, a total of 37 dairy cattle on pre-partum period were included in the study for determining NEFA levels, Blood samples were withdrawn from *V. coccygea* 6-8 hours after early feeding at pre-partum (-2nd and -1th week) and cows were monitorized 4 weeks after parturition. We designated cut off value of NEFA in pre-partum for postpartum risk of lameness. NEFA analyses were performed with a novel cow-side photometric device (Vet-photometer DP 700) immediately after blood collection. Total of 15 (%40,5) cows had developed lameness after parturition. According to the Receiving Operating Curve (ROC) analysis, pre-partum cows (-2nd and -1th week) without illness with mean 0,36 mEq/L NEFA levels predisposed to the lameness in postpartum period. In conclusion it can be promptly suggested that pre-partum NEFA levels with a cut-off point 0,36 mEq/L might be a useful predictive indicator for estimating the postpartum lameness in Aydin province. Otherwise it might allow for strategic intervention of economical loss considering animal welfare in Aegean region of Turkey.

Keywords: Cut Off Point, Dairy Cattle, Lameness, NEFA.

EFFECT OF ROBINIA PSEUDOACACIA LEAF EXTRACT ON GAS, METHANE EMISSION AND DIGESTIBILITY OF ALFALFA HAY

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Abstract:

Recently considerable attention has been diverted into the use of tree leaf extract to improve the efficiency of ruminal fermentation. Robinia pseudoacacia is one of the legume plants grown in many parts of world where its leaves have been used as livestock feed and contains substantial amount of tannin. However there is limited research on the effect of Robinia pseudoacacia leaf extract on ruminal fermentation. The aim of the current experiment was to determine the effect of Robinia pseudoacacia leaf extract on gas, methane emission and digestibility of alfalfa hay. Fresh leaf of Robinia pseudoacacia were extracted at 10 g leaves / 80 ml of solvent mixture for 72 h. Leaf extract was tested at four doses (0.0, 0.6, 1.2 and 1.8 ml/g DM) of alfalfa hay (500 mg) in five replicates using in vitro gas production technique for 24 h (Menke et al (1979)). Methane content of gas produced was determined using the infrared methane analyzer. The metabolisable energy (MJ/kg DM) and organic matter digestibility (OMD) of alfalfa hay were calculated using equations of Menke and Steingass (1988) as follows: $ME = 2.20 + 0.1357 GP + 0.057 CP + 0.002859EE^2$, $OMD (\%) = 14.88 + 0.8893 GP + 0.448 CP + 0.651CA$. Truly digested substrate (TDS), partitioning factor (PF₂₄), microbial protein (MP) and efficiency of microbial protein (EMP) of alfalfa hay were estimated using the equations suggested by Blümmel et al (1997) as follows. $TDS = \text{Substrate incubated (mg)} - \text{the residue (mg)}$, $PF_{24} = TDS / GP_{24}$, $MP (\text{mg/g DM}) = TDS - (GP_{24} \times 2.2 \text{ mg/ml})$, $EMP = (TDS - (GP_{24} \times 2.2 \text{ mg/ml})) / TDS$. Robinia pseudoacacia leaf extract has no significant ($p > 0.05$) effect on gas production, TDS, PF, MY, EMP, OMD and ME but significantly increased the methane production of alfalfa hay when incubated with rumen fluid.

Keywords: Robinia Pseudoacacia, Leaf Extract, Gas, Methane, Digestibility

THE DETERMINATION OF MORPHOLOGICAL AND GENETIC CHARACTERISTICS OF ZAGAR, ZERDAVA AND ÇATALBURUN DOGS

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Abstract:

The aim of this study was to determine the live weight, some morphological characteristics and genetic traits of Zağar, Zerdava, and Çatalburun dogs. The study was conducted with 104 Zağar, 100 Zerdava and 100 Çatalburun dogs which were reared different regions in Turkey (Çatalburun (Mersin and around), Zağar (Tekirdağ, Çorlu, Manisa, Burdur, and Afyonkarahisar) and Zerdava (Trabzon and around, Giresun)) from which local dog genotype of Turkey. The data were obtained from dogs at ages twelve months and older.

From these genotypes, Zağar was recognized and registered as a breed by TAGEM. The data of Zağar, Zerdava and Çatalburun dogs in the study means were 18,24±0,37; 16,02±0,35 and 20,20±0,41 kg for live weight, 50,50±0,39; 48,20±0,21 and 48,23±0,34 cm for wither height, 50,27±0,33; 47,08±0,24 and 49,07±0,33 cm for rump height, 56,41±0,38; 51,24±0,23 and 54,05±0,32 cm for body length, respectively. The results of genetic analysis from blood samples taken Zağar, Zerdava and Çatalburun dogs, FIS, FIT and FST values, heterozygosities (He) and Tajima D value were found to be 0,0338; 0,0807; 0,0485; 0,784; 0,732 ve 0,744 and 1.416, respectively. A018 (% 17,95) ve B001 (% 19,23) haplotypes in Zağar population, A018 (% 70,59) ve B001 (% 18,38) haplotypes in Zerdava population, A018 (% 14,52) ve B001 (% 59,68) haplotypes in Çatalburun population were found to be the highest.

Keywords: Local Dog, Microsatellite, Morphological Traits, Turkey

LIVE WEIGHT AND SOME MORPHOLOGICAL CHARACTERISTICS OF THE CINS PIGEONS

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Abstract:

The aim of this study was to determine body weight and some morphological characteristics (head width and length, bill length and depth, body length, chest circumference, width and depth, tail length, tarsus diameter) of Cins breed pigeons. The study was conducted on 104 pigeons (52 females, 52 males) of different age groups (12-23 months, 24-35 months, 36-47 months, 48 months and over) grown in five different locations in 2018. In this study, breeding of Cins pigeon was determined in Erdemli, Mezitli and Tarsus regions of Mersin. In the pigeons, color (42), red (27), white (16) and black (19) colors were seen as color, and clumsy (6), mushy (52), küpeli (18) and katrani (7) colors were observed as signatures. Hazel (55), green (14), yellow (12), blue (7) and brown (16) were seen in the birds ear color. According to the results of the study, the live weights of pigeons were 505.94 g, head length 58.70 mm, chest circumference 25.45 mm, trunk length 10.56 mm, shank diameter 5.77 mm. Head length, width, chest circumference, beak length ($P<0,001$) and chest circumference ($P<0,001$) were found to be significant according to sex. As a result of research, it is seen that these pigeons have larger structures than the reported pigeons.

Keywords: Cins, Live Weight, Morphological Traits, Pigeon

DIETARY HIGH CALORIES FROM DIFFERENT SOURCES ALTERS LIPOGENIC GENES EXPRESSION LEVELS IN LIVER AND SKELETAL MUSCLE IN RATS

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Abstract:

The objectives of this research were to investigate the underlying mechanism of PPAR α , LXR α , ChREBP, and SREBP-1c transcription factors at the level of gene and protein expression with high-energy diets from fat, sucrose and fructose in liver and muscle tissues.

The study groups were consisted of Wistar Albino rats that were approximately 3 months old. There were four study groups (n=8 for per group): Control group (Con), High Fat Group (Hfat), High Sucrose group (Hsuc), and High Fructose group (Hfru). Experimental groups were fed different diets for 3 months. Rats in Con group were fed with basic diet (2600 kcal/kg), rats in Hfat group were fed with fatty diet (3600 kcal/kg), and rats in study groups Hsuc and Hfru were fed basic diet and solution which contained sucrose and fructose containing 1 kcal/mL Metabolic Energy.

Gene expression quantities were given as fold changes. In liver, LXR α gene expression levels of Hsuc and Hfru groups were 1.87 ± 0.30 ($P<0.05$) and 2.01 ± 0.29 ($P<0.01$). In Hfat, Hsuc, and Hfru groups SREBP-1c levels have been detected that 4.52 ± 1.25 ($P<0.05$); 4.05 ± 1.11 ($P<0.05$) and 3.85 ± 1.04 ($P<0.05$), respectively. LXR α gene expression levels in the Hfru group were 1.77 ± 0.30 ($P<0.05$) and SREBP-1c were 2.71 ± 0.56 ($P<0.05$) in skeletal muscle tissues.

ELISA results indicated that, livers of rats in Hfru groups ChREBP (33.92 ± 8.84 ng/mg protein ($P<0.05$)) and SREBP-1c (135.16 ± 15.57 ng/mg protein ($P<0.001$)) protein levels were much higher than in other groups. In muscle tissues, the protein amounts of LXR were 6.67 ± 0.60 ng/mg protein ($P<0.05$), ChREBP were $7,11\pm 1,29$ ng/mg protein ($P<0.01$) and SREBP-1c were 43.17 ± 6.37 ng/mg protein ($P<0.05$), in Hfru group. This shows that differences between gene expression levels and protein amounts could occur due to noncoding RNAs such as miRNAs.

Keywords: Dietary High Calorie, Lipogenesis, Gene Expression, Liver, Skeletal Muscle

PINE EXTRACT REDUCE TO OXIDATIVE STRESS AND IMPROVE TO DNA INTEGRITY IN BULL SEMEN AFTER FREEZE THAWING

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Abstract:

While the semen cryopreservation has deleterious effects on mammalian spermatozoa, the manipulation of oxidative stress using antioxidant allows increasing the advance results through this process. The objective of the present study was to investigate the role of pine extract (P) supplementation to Tris extender in order to prevent from oxidative stress for the first time in bull spermatozoa after freezing. Ejaculates were collected by artificial vagina from Simmental bulls. Semen were split up five aliquots and diluted to a final concentration of 16×10^6 spermatozoa/straw with the Tris extender containing P (25, 50, 100 and 200 $\mu\text{g/ml}$) and supplement free (control; C). All samples were equilibrated at 4 °C during 4 h then were loaded into 0.25 ml straws and frozen using a controlled rate. Sperm motility and motility characteristics were performed using the computer assisted semen analyzer. Sperm chromatin integrity was investigated using the single cell gel electrophoresis. Total antioxidant capacities were determined colorimetrically. P supplementation used as an antioxidant did not produce better results in the proportion of sperm total and progressive motility. Although P200 had ameliorative effect on total spermatozoa abnormalities, it created an adverse effect on motility results. In conclusion, results showed that, even though P supplementation did not produce improvement results in the proportion of progressive and total sperm motility, however supplementation of 100 $\mu\text{g/ml}$ P before the beginning of the cryopreservation process has improved chromatin integrity and oxidative stress results in bull semen after freeze thawing

Keywords: Antioxidant; Bull Semen; Cryopreservation; Chromatin Integrity; Oxidative Stress; Pine Extract

BLOOD MDA AND GSH-PX PROFILES DURING THE TRANSITION PERIOD IN DAIRY COWS WITH DYSTOCIA AND NORMALLY CALVED

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Abstract:

The objective of the presented study was to monitor the blood MDA and GSH-Px profiles during the transition period in dairy cows with dystocia and normally calved. The study was performed with 167 Holstein cows, aged from 4 to 6 years. Blood samples were collected at 21 days before calving, at calving and 21 days after calving. After calving, the cows were classified into two groups according to calving difficulty, cows with dystocia (n=45), cows with normally calved (n=122). Blood MDA concentration was significantly affected by the time of sampling ($P<0.05$). The MDA concentration at calving was significantly higher compared to 21 days before calving and 21 days after calving ($P<0.05$). Similarly, the blood GSH-Px activity was also affected by the time of sampling ($P<0.05$). Blood GSH-Px activity at calving was lower than at 21 days before calving and 21 days after calving ($P<0.05$). During the transition period, the MDA concentration was significantly higher in cows with dystocia compared to cows with normally calved ($P<0.05$). The GSH-Px activity was lower in cows with dystocia than cows with normally calved at all time points ($P<0.05$). The results obtained from this study indicate that dystocia appears to be associated with oxidative stress during the transition period. In conclusion, blood MDA concentration and GSH-Px activity are affected by dystocia. These parameters would be useful in the evaluation of the dystocia in cows during the transition period.

Keywords: Cow, Dystocia, Glutathione Peroxidase, Malondialdehyde

CONCEPTION RATE FOLLOWING TWO TIMED ARTIFICIAL INSEMINATION PROTOCOLS IN SIMMENTAL HEIFERS

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Abstract:

Pregnancy rate (PR) of synchronized heifers to the timed artificial insemination (TAI) are lower than heifers that are detected in estrus. Many synchronization programs have been developed for estrus synchronization in cows and heifers. Although estrous synchronization protocols aggregate estrous behaviours in cattle, daily observations are still needed to inseminate. The aim of this study was to compare two different TAI protocols in order to improve the percentage of PR per AI in heifers. Simmental heifers aged between 14 and 20 months (mean 17.1 months), were used in present study. The heifers are free from any genital or venereal diseases and were bred at THS livestock (Gölbaşı, Ankara, Turkey). Heifers (n=88) were randomly divided into two groups; in the D11 group (n: 32) received double dose PGF2 α protocol (PGF2 α -11d- PGF2 α -81h TAI and GnRH), D5 group (n: 56) received the 5 days' protocol (GnRH-5d-PGF2 α -1d-PGF2 α -48h TAI and GnRH). IDEXX rapid visual pregnancy test was performed 28 d post TAI to determine the pregnancy. Response to treatment of D5 (48.2%, 27/56) did not differ the D11 (40.6%, 13/32; P>0.05) when considered PR. In conclusion, results demonstrated that, owing to numerically greater response to D5 protocol and its shorter runtime compared with the D11, the D5 protocol can be used to improve PR/TAI in Simmental heifers.

Keywords: GnRH, PGF2 α , Synchronisation, Pregnancy, Tai

DETERMINATION OF THE EFFICACY OF A COMMERCIAL DECONTAMINANT ON SHELF LIFE OF FISH

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Abstract:

Fish is a highly perishable product and has a very short shelf life due to its biological composition. The most common methods used for the preservation of fish are cold storage and freezing. Increasing energy costs associated with freezing and frozen storage have led food industry to find alternative methods for shelf-life preservation and marketability of fish.

The aim of the study was to determine the effect of concentration and application type of a commercial decontaminant on the shelf life of fresh fish. For this purpose decontaminants prepared by the company at two different concentrations were applied to fresh fish by both immersion and spray technique. After applications, the fishes were kept in refrigerator at 2 °C, for 15 days. Aerobic mesophilic, psychrophilic, Enterobacteriaceae and yeast/mold counts were investigated by cultivation technique at day 0 and during the storage period at the days 3, 5, 7 and 15. Fish that not decontaminated were evaluated as a control group, and the same storage and sampling methods were applied to them.

According to the results, compared with the control groups, soaking of fish samples in the decontaminant reduced the levels of aerobic counts by 3 log CFU/g, psychrophilic and yeast/mold counts by 2 log CFU/g at days 0, 3, 5 and 7. Spraying provided only 1 log CFU/g reduction for the same bacteria. Enterobacteriaceae growth detected after as 10³ CFU/g at the 5th day, and 10⁴ CFU/g at the 7th and 15th days only in the control group. On the day 15 all bacteria results were found the same with the control group, except Enterobacteriaceae.

As a conclusion, decontamination applications were found to be efficient to the microbial load of the fish samples. But more researches should be done on the effect of this decontaminant to organoleptic properties or human health.

Keywords: Decontamination, Fish, Shelf-Life

**OCCURRENCE AND ANTIBIOTIC SUSCEPTIBILITY OF *VIBRIO SPP.*,
AEROMONAS SPP. AND *LISTERIA SPP.* IN SEAFOODS CONSUMED IN
KONYA**

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Abstract:

The present study aimed to determine the incidence of *Vibrio spp.*, *Aeromonas spp.* and *Listeria spp.* in finfish and shrimps and the antibiotic resistance profile of the isolates to selected antibiotics. Finfishes (n=170) from 10 and shrimps from 4 different species (n=130) were obtained from fish markets. Following isolation and identification with classical cultural method, PCR was performed to confirm the isolates at species level and to identify pathogenic strains. Resistance profiles of the isolates against 20 antibiotics were determined by Disk Diffusion method. Finfish and shrimp samples were contaminated with *Vibrio spp.*, *Aeromonas spp.* and *Listeria spp.* with the rate of 19.4 % (33/170), 14.7 % (25/170), 4.1 % (7/170) and 13.84 % (18/130), 13.07 % (17/130), 6.15 % (8/130), respectively. Twenty-nine and 9 of the *Vibrio spp.* isolates were identified as *V. parahaemolyticus* and *V. cholerae*, respectively. *V. vulnificus* was not detected in any of the samples. Thirty of the *Aeromonas spp.* isolates were detected as *A. hydrophila*. *L. monocytogenes* was not detected in the fifteen isolates confirmed as *Listeria spp.* The highest resistance rates in finfish isolates were against streptomycin and teicoplanin (71.42%) for *V. parahaemolyticus*; streptomycin (80%) for *V. cholerae*; erythromycin (93.75%) and vancomycin (81.25%) for *A. hydrophila* and cephalothin, erythromycin, penicillin G and tetracycline (42.85%) for *Listeria spp.* The resistance profile of shrimp isolates were found as; ampicillin (87.50%) and teicoplanin (75%) for *V. parahaemolyticus*; sulfamethoxazole/trimethoprim (100%), ampicillin, cefixime, penicillin G and tetracycline (75 %) for *V. cholerae*; cephalothin, oxacillin and penicillin G (92.85%) ampicillin (85.71%), amoxicillin/clavulanic acid and erythromycin (%78.57) for *A. hydrophila*; cephalothin, clindamycin, erythromycin and penicillin G (37.50%) for *Listeria spp.* Detection of *V. cholerae*, *V. parahaemolyticus* and *A. hydrophila* in seafood and determination of multiple resistance to certain antibiotics suggest that analyzed seafood may pose a risk for food-borne infections.

Keywords: *A. Hydrophila*, Antibiotic Resistance, Finfish, Shrimp, *Listeria Spp*, *V. Parahaemolyticus*, *V. Cholerae*

**IN THE MARKET ON THE SALE OF ICE CREAMS DETECTION OF
CRONOBACTER SAKAZAKII, *LISTERIA MONOCYTOGENES*, *SALMONELLA*
SPP. WITH THE ISO 22964:2017, ISO 11290-1:2017, ISO 6579-1:2017
METHODS AND ENUMERATION OF ENTEROBACTERIACEAE WITH THE
ISO 21528-2:2017 METHODS**

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Abstract:

Introduction: According to the Turkish Food Codex Regulation on Microbiological Criteria, *Cronobacter sakazakii* is regarded as risky only in infant formula and not evaluated in terms of this microorganism in other dairy products. In this study, enumeration of *Enterobacteriaceae*, detection of *C. sakazakii*, *Salmonella spp.* and *Listeria monocytogenes* were found of vanilla (n = 30), chocolate (n = 30), mixed fruit (n = 30) in 90 ice cream samples. Material and Methods: Samples analyzed by cold chain, enumeration of *Enterobacteriaceae* with ISO 21528-2: 2017, detection of *C. sakazakii* with ISO 22964: 2017, detection of *Salmonella spp.* with ISO 6579-1: 2017 and detection of *Listeria monocytogenes* with ISO 11290-1: 2017 methods were determined. Biochemical confirmation and oxidase tests were performed with API 20E for *C. sakazakii* and *Salmonella spp.* *Microgen Listeria* and Hemolysis tests were used to biochemical confirmation of *Listeria monocytogenes*. Confirmation for enumeration of *Enterobacteriaceae* was bacteria performed on Glucose Of Medium. Statistical tests was performed by one way ANOVA (p<0.05). Results: Enumeration of Enterobacteriaceae when classified as vanilla, cocoa and fruity ice-creams were not statistically significant. While there was a difference between open and closed serving freezing (p <0.05). In total 90 samples were identified as *C. sakazakii* in 10, and *L. monocytogenes* was detected in 4, *Salmonella spp.* could not be detected. *C. sakazakii* was found one of the 27 ice creams produced as fabrication. Discussion: In this study, *C. sakazakii* has tried to put forward at least as risky as *Salmonella spp.* and *L. monocytogenes* delivery consumption of ice cream by appealing to all age groups, especially in the summer of months. According to Turkish Food Codex Regulation on Microbiological Criteria, risky pathogenic microorganisms for ice creams are mentioned as *Salmonella spp.*, *L. monocytogenes* and *Enterobacteriaceae*. However, presents for consumption of ice creams from the risks by *C. sakazakii* and *Enterobacter cloacae* must be removed in order to protect public health.

Keywords: Ice-Cream, *Cronobacter Sakazakii*, *Enterobacteriaceae*, Turkish Food Codex.

DETECTION OF *VIBRIO SPP.* IN FROZEN SEAFOODS USING LOOP MEDIATED ISOTHERMAL AMPLIFICATION (LAMP)

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Abstract:

This study aimed to determine the high risk group of *Vibrio spp.* including *Vibrio parahaemolyticus*, *V. vulnificus* and *V. cholerae* that the most common agents of seafood-borne infections and intoxications using Loop Mediated Isothermal Amplification (LAMP), a new method with high specificity, efficiency and rapidity.

Frozen seafood (anchovy fillet, hulled anchovy, frozen fish finger, octopus, shrimp, squid, calamari, akivades, mussel meat, shellfish mussels, mackerel fillet, sardines, surimi stick, vongole, breaded calamari slices, rock bass, n=212) served for sale in supermarkets and fish markets were collected. ISO / TS 21872-1: 2007 and ISO 21872-2: 2007 procedures were used for isolation of samples with the classical cultural method. The suspected colonies were tested using oxidase, catalase, Gram staining, mobility tests. DNA extraction was carried out from suspected isolates. Then the *Vibrio spp.* was confirmed using the species specific PCR reaction by amplification of gyrB1 gene region. A turbidity-based Real-Time LAMP was carried out in the positive samples. For this purpose, LAMP primer sets used which were designed for toxR, vvHA and ompW target gene regions for detection of *V. parahaemolyticus*, *V. vulnificus* and *V. cholerae*, respectively.

As a result, 36 of 212 (21,2 %) samples were detected to be contaminated with *Vibrio spp.* which were analyzed using classical cultural method and confirmed by PCR. According to the Real-Time LAMP reaction results, the rate of *V. parahaemolyticus* and *V. vulnificus* was 13/36 (36.1 %) and 2/36 (5.5 %) in *Vibrio spp.* positive isolates, respectively. *V. cholerae* was not detected in any of the samples analyzed. In this context, the presence of pathogenic strains such as *V. parahaemolyticus* and *V. vulnificus* in frozen seafood was considered as risky for public health.

Keywords: Frozen Seafood, Real-Time LAMP, *Vibrio Spp*

THE OPPORTUNITIES OF USING IMAGE PROCESSING FOR DETERMINATION MORPHOLOGICAL TRAITS OF ANIMALS

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Abstract:

Morphological traits of livestock such as body measurements is most important for determination of improvement livestock animals and already this measurements use for determine improvement level or status of animal breeding. Body measurements of animal determine by traditional tool such measure stick. But the measuring of body measurements by traditional tools is difficult, getting long time and the results are suspiciously some of times. By development of computer technology; different computer technologies started to use for determination of different morphological characteristics and behaviors of livestock animals. Image processing is the one of computer technology which is using for determination of body or carcass measurements of livestock animals such as cattle, sheep, goat etc. In this study, A Fixed Object Photo Method applied to estimate for body measurements of 20 individuals of 1 year old Native Breed Turkish Grey cattle heifer. In the same time all animals measured by traditional tools. Furthermore the results of two methods compared. The value of differences between two methods was in the range of 0,47% and 4,51%. The value of differences were 1,14%, 2.02%, 0,54% and the correlation coefficient between two methods were 0,87 ($p<0.01$), 0,91 ($p<0.01$) and 0,92 ($p<0.01$) for whither height, back height and rump height respectively. The results of this study showed that A Fixed Object Photo Method which is one of image processing method can be use for determination of livestock animal as an alternative measuring system instead of traditional methods.

Keywords: Body measurements, image processing, cattle, morphological traits, animal breeding

AN APPLICATION OF ROBUST REGRESSION IN VETERINARY MEDICINE

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Abstract:

Linear least squares regression is by far the most widely used modeling method. It is a mathematically convenient, extremely useful and easily interpretable statistical method. However, ordinal least squares regression is optimum only when all of its assumptions are valid. Robust regression provides an alternative to ordinal squares regression by providing better estimates especially when outliers are present in the data. The aim of this study was to describe the application of robust regression and its advantages over the least square regression method in veterinary medicine. A data containing information of transportation time, slaughter age, number of transported animals, waiting time in the slaughterhouse, live weight and live weight losses concerning 720 transportation of broiler chickens were used. Least square regression and robust regression was applied to the dataset using live weight losses as the dependent variable and the rest of the variables as independent variables. To perform statistical analysis, regress, rregress and rregfit commands of Stata 14.1 MP4 programme were implemented. Results showed that MSE values were smaller in robust regression providing better estimates in comparison to ordinal least square regression. In conclusion, assumptions should be carefully evaluated before performing ordinal least squares regression since non-normally distributed residuals tend to distort the least squares coefficients by having more influence.

Keywords: least squares regression, robust regression, outlier, modelling

INVESTIGATION OF THE EFFECT OF VITAMIN AND TRACE ELEMENT
SUPPLEMENTATION ON SOMATIC CELL COUNTS OF DAIRY COWS' MILK WITH
META-ANALYSIS

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Abstract:

Meta-analysis is defined as the process of the use of some statistical methods by combining the results of independent studies and increasing the sample size to achieve more reliable and accurate results. In recent years, meta-analysis has become a popular statistical method to analyze the inconsistencies among the results of scientific research carried out in order to resolve the same hypothesis with different sample size in different regions by different work teams. The aim of the study was to evaluate the effect of vitamin and trace element supplementation on somatic cell counts of dairy cows' milk by using meta-analysis.

The studies published between 2000-2018 were searched with the keywords specified by the aim of the study (somatic cell count, vitamin, trace elements, dairy cows) in Science Direct, PubMed, Springer, Scopus, Wiley and Cab Direct databases and reached 94 individual studies. 9 studies were decided to include to the meta-analysis by examining in terms of the inclusion and exclusion criteria. Cohen's d index was used to calculate effect sizes of each study. It was calculated pooled effect size with the fixed effects model by combining the effect sizes of each study. The heterogeneity between the studies was determined based on the Q statistics and the I2 index. The publication bias was determined based on the Funnel Plot. Meta-analysis revealed that vitamin and trace element supplementation had no effect on somatic cell counts of dairy cows' milk (Z: 1,79; p=0,073). According to the fixed effects model the pooled effect size was 0,081 (-0,008-0,170) (Q: 37,55 ; p=0,133, I2: 22,8%).

In conclusion, it was determined that the use of vitamin and trace element supplementation on dairy cows is not effective in decreasing the somatic cell count which is one of the important indicator of milk quality.

Keywords: Dairy Cow, Meta-Analysis, Somatic Cell Count, Trace Element, Vitamin

INVESTIGATION OF THE EFFECT OF BIRTH TYPE ON MILK YIELD IN HOLSTEIN
COWS WITH MULTILEVEL MODELS

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Abstract:

Milk yield in livestock has a quite importance for both feeding of offsprings and dairy products. However, it is known that non-genetic factors such as maintenance and feeding conditions, climate, age, number of lactations, body weight and diseases affect milk yield. The aim of this study is to investigate the effect of the birth type (Eutocia/Dystocia) that is one of the non-genetic factors on the milk yield by using multilevel models instead of classical statistical approaches. In accordance with the aim of this study, average daily milk yield of 63 Holstein dairy cows and birth type information were collected from three different farms. Effect of birth type on milk yield was investigated. The mixed procedure of SPSS 22.0 statistical software package was used for all analyses. Results showed that, when the two-level data structure was ignored, the effect of birth type on milk yield was found to be non-significant ($p>0.05$). However, after taking into account the hierarchical data structure, the effect of birth type on milk yield in the farm-level was significant ($p<0.05$). The comparison of the two models in terms of goodness of fitness showed that the multilevel model was significantly different in a positive manner compared to the one-level model ($X^2(1) = 3,947, p<0.05$). Multilevel models determine the direct effect of the explanatory variables at the individual and group level. At this point, to determine the hierarchical data structure, it is important to prevent very different results which actually need to be reached.

Keywords: Birth Type, Hierarchical Data Structure, Milk Yield, Multilevel Models

COMPARISON AND EFFICIENCY EVALUATION OF THE VETERINARY
UNDERGRADUATE PROGRAMS IN ENGLISH AND TURKISH LANGUAGES IN ANKARA
UNIVERSITY

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Abstract:

Due to the rapid advancement in veterinary science, education of veterinary profession in English language has also come to the forefront with the need of extra communication among the colleagues around the world. Considering these developments, our English undergraduate program has been started 3 years ago. Thereafter, it was realized that the success and efficiency of our English program should be determined comparatively to Turkish program. In this context, we've made detailed academic achievement analyses and satisfaction surveys among our students in English or Turkish programs.

Academic achievement of attendant students (2656 for Turkish and 238 for English) who received the same curriculum between 2015 and 2018 were statistically analyzed in terms of final grade scores. The average passing scores for each program and for each lecture were indicated and overall success evaluation was performed. Besides, a satisfaction survey was conducted for English language students to evaluate the general satisfaction from this program. The quantitative data of the survey was collected using the two section and totally 29-item questionnaire. The data for program competencies obtained with Likert scale in the first section and open-ended questions in the second section. For the first part's data, descriptive statistics including frequency, percentage, one-way variance analyses (ANOVA) were used, which were suitable for the objective of the study. For the second part, descriptive analysis technique was used.

When the quantitative data were evaluated for these programs, the percentage of 3 years' overall academic success of English veterinary undergraduate program students (73.96%) was found statistically significant and higher than the Turkish program (55.30%). A remarkable number of the students in English class were satisfied to enrol this program. Undergraduate program in English language was considered as efficient and students seem to be more successful when compared to Turkish programs.

Keywords: Education, English, Undergraduate, Veterinar

HEAVY METAL CONTAMINATION LEVELS OF *AQUILA CHRYSAETOS*, *ACCIPITER
NISUS* AND *CICONIA CICONIA* FROM TURKEY

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Abstract:

The aim of the study was to investigate concentrations of environmentally relevant eight heavy metals (Cd, Cr, Cu, Fe, Hg, Mn, Pb, Zn) in feather, muscle, heart, kidney, and liver of golden eagles (*Aquila chrysaetos*), sparrowhawks (*Accipiter nisus*) and white stork (*Ciconia ciconia*) collected from Hatay province, southern Turkey where is an ecological important region on the West Palearctic migration way. Tissue metal contamination levels were determined by inductively coupled plasma optical emission spectrometry (ICP-OES) analysis. In generally, the heavy metal concentrations in all tissues were followed the order: Fe> Cr> Zn> Cu> Mn> Pb> Cd> Hg. Concentrations of Cr in feather, Cu in kidney, Pb and Zn in muscle were significantly higher in golden eagles than in white stork and sparrowhawks. Concentrations of Cu in feather was significantly higher in sparrowhawks than in golden eagles and white stork. There was no statistical difference between bird species in terms of Cd and Mn concentrations in all tissues. When the obtained results are assessed, metal bioaccumulation tends or target organ/tissues were varied among species. Compare to the other studies, this results for some metals may be an early warning for impairment of environmental quality and may reflect a biological stress on wildlife.

Keywords: *Accipiter Nisus*, *Aquila Chrysaetos*, *Ciconia Ciconia*, Heavy Metals, Turkey

CORRELATION OF THE ANTI-MULLERIAN HORMONE WITH AGE, FOLLICLE
DEVELOPMENT, OVULATION AND CONCEPTION RATE IN PUREBRED ARABIAN
MARES

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Abstract:

This study was aimed at demonstrating the correlation of serum anti-Müllerian hormone (AMH) levels with age and certain reproductive parameters in purebred Arabian mares and investigating the potential use of AMH levels as a fertility parameter for the selection of breeder animals.

Thirty-six non-lactating purebred Arabian mares with no infertility problem constituted the material of the study. The animals were assigned to the following groups according to their age: Group I (young animals aged 4-8 years), Group II (middle-aged animals aged 9-18 years) and Group III (senile animals aged 19-25 years).

The mean serum AMH levels were determined as 0.431 ± 0.055 ng/ml in Group I, 0.810 ± 0.091 ng/ml in Group II, and 0.305 ± 0.064 ng/ml in Group III. Group II was determined to significantly differ from Groups I and III for the mean serum AMH levels measured ($P < 0.05$). Furthermore, the lowest number of insemination per conception during the breeding season and the highest conception rate were determined in the group with the highest AMH level, which was Group II, composed of middle-aged mares. The results of this study showed that, in mares, serum AMH levels were positively correlated with the daily increase in follicle diameter ($r=0.533$), follicle diameter at the time of ovulation ($r=0.383$) and conception, and were negatively correlated with anovulation ($r=0.407$) and the number of insemination per conception ($r=0.528$).

Thereby, the correlation of serum AMH levels with age was demonstrated in purebred Arabian mares, and it was concluded that serum AMH levels could be used as both an indicator of reproductive performance and a fertility marker to complement reproductive examination in these animals.

Keywords: Mare, Anti-Müllerian Hormone, Age, Reproductive Performance

THE ACUTE PHASE STUDY OF GLUFOSINATE TOXICITY ON RAT BRAIN NEURONS:
EXPERIMENTAL STUDY

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Abstract:

Amino acid phosphinotricin (D,L-homoalanin-4-[methyl] phosphinate) is the active component of a broad-spectrum herbicide under the name of Glufosinate ammonium (GLA). GLA is one of common herbicide that widely used for control a broad range of weeds in agriculture. GLA potentially have neurotoxic effect and developed neurological symptoms like seizures, convulsions, and memory lost. However, only few specific studies have been conducted to shown GLA effects on the central nervous system (CNS) of animals submitted to acute, low and high-dose exposure. Glutamin synthetize (GlnS) is very important enzyme that important role in glutamate release and reuptake in glutamatergic CNS neurons. GLA by inhibition GlnS activity cause disturbance in metabolic regulation of glutamate (the major excitatory brain neurotransmitter). Under glutamate induced toxicity, astrocytic released Interleukin 1 (IL1) and Transforming growth factor beta (TGF- β) beside Brain-derived neurotrophic factor (BDNF) for cure neuron from GLA neurotoxicity. For this purpose, rats were given an intraperitoneal injection of %40, %80 and %120 glufosinate (4mg/kg per rat). 15 animals are included per group and groups are designated as control, low dose, moderate dose and high dose. After sacrificing, brain is isolated carefully and put into 10% formaldehyde solution then stained as an immunohistochemical antibody. The main outcome measures were IL1 β , TGF- β , BDNF and lethality. Treatments with the glufosinate achieved significant increase of IL1 β , TGF- β and BDNF concentrations in high dose group in 24th, 48th and 72nd hour however BDNF was not increased in moderate dose in 24th hour. In general, treatments with the glufosinate demonstrated the damaging effect on the brain especially astrocytes. We concluded further research is needed to characterize the potential effects of glufosinate toxicity is needed for another biological marker analysis.

Keywords: BDNF, glufosinate, IL1 β , TGF- β

EFFECT OF CDS INDUCED TOXICITY ON CEREBELLUM: IN VITRO STUDIES

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Abstract:

Cadmium (Cd) is heavy metal and one of important industrial and environmental pollutant. Cds (cadmium sulfur) is type of quantum dots. Quantum dots are unique light emitting semiconductor nanocrystals. Q dot use in many industrial products from smoke to battery. Neuron one of important cell type in mammalian body. Neurons have not mitotic ability and neuron lose can induced limitation to human ability to talk, movement and complex behavior. This increase in consumption rate of Cds need to wide range investigation of toxicity parameter. This increase in consumption rate of Cds need to wide range investigation of toxicity parameter. Particle The cells in cryofalcone dissolved and after centrifuge step were seeded into 48-well culture plate at density of 1×10^5 cells. Than the cells were treated with different concentrations of Cds (0,1, 0,01, 0,001, 0,0001, 0,00001 mg/ml) and incubated for 24 h (5% CO₂; 37°C). The biosynthesis process is preferred to obtain high biocompatible material that can be used for living organisms. The biosynthesized CdS nanoparticles were characterized by XRD, SEM. In vitro study was done by MTT, antioxidant capacity and oxidant status. According to our result by increasing Cds dose cell viability decreased. The highest viability was seen in 0,00001 mg/ml.

Keywords: Cds, Cerebellum neuron, SEM, TAC, TOS, XRD

MEDICINAL PLANTS USED IN VETERINARY MEDICINE- BLACK CUMIN (NIGELLA
SATIVA L.) CULTIVATION AND COMPONENTS, AS AN EXAMPLE

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Abstract:

"Medicus curat, natura sanat" - The doctor treats, nature heals (Hippocrates). This was known to many, not just by Hippocrates, and this knowledge is essentially formed the basis of modern medicine. Even today, many active substances used in modern Medicines, were originally extracted from plants. Nature provides us with a lot of herbal medicinal plants with tremendous potential to treat various diseases. Medicinal plants provide manufacturers with the richest raw material pool to be used in medicines, food supplements, and nutraceutical, pharmaceutical and chemical industries. Direct applications of these medicinal plants as a source of drugs in treating human and animal diseases has been a traditional practice for centuries. Use of medicinal plants in veterinary medicine against numerous indications have been described, like *Salvia officinalis* internal application against non-specific acute diarrheal diseases; *Chamomilla recutita* against gastrointestinal spasms, gastritis, meteorism; *Achillea millefolium* against dyspepsia, alimentary gastroenteritis in calves; *Taraxacum officinale* against disorders of bile flow, meteorism in horses; *Camellia sinensis* against diarrhea, colitis and dyspepsia; *Malva sylvestris* against gastroenteritis; and *Nigella sativa* against asthma in horses. In this study, effect of *Nigella sativa* application, yield and quality characteristics of *Nigella sativa* was discussed in more details. To estimate the yield potential of *Nigella sativa* L., a two years field trial with different seed densities was conducted. The non-volatile oil content of black cumin was determined by Soxhlet-extraction method and its fatty acid pattern was determined by gas chromatography. Content and composition of essential oil obtained through microdistillation were also determined by using gas chromatography. Main components of the essential oil were p - cymene and thymoquinone, to which anticancerogenic effects are attributed, the latter accounting for 26.61-37.37 %. Other components were alfa-thujene, alfa-pinene, beta-pinene, d-limonene, beta-phellandrene, (+) - longifolene, and alfa - terpinene.

Keywords: Medicinal Plants, *Nigella Sativa*, Fatty Acid, Thymoquinone

TROUT AND CONSECUTIVELY TILAPIA FARMING IN FLOATING CAGE IN SEYHAN
DAM LAKE ADANA

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Abstract:

In this study, the possibility of rearing rainbow trout (*Oncorhynchus mykiss*) and tilapia (*Oreochromis aureus*) as alternate crops during the winter and summer periods in floating net cages in Seyhan Dam lake were investigated, respectively. At the initial stage (winter period) of the study, trout juveniles with an average weight of 56.45 ± 6.10 g were stocked at 50 fish/m³. At the end of this period, trout of 277.54 ± 18.50 g were harvested after 75 days. The daily weight gain and feed conversion ratio were 2.9 g/d and 1.15, respectively. Average condition factor was 1.3. Mean stocking density of trout at harvest was 13.0 kg /m³. At the second stage (summer period) of the study, tilapia fry with an average weight of 0.95 ± 0.27 g were stocked at 50 fish/m³ and were reached to an average weight of 131.58 ± 7.12 g in 3 months. At the end of the study, mean yield for tilapia was 6.5 kg/m³. The daily weight gain and feed conversion ratio were 1.5 g/d and 1.21, respectively. Average condition factor was 2.4. In conclusion, thanks to the cultivation of the two species, trout and tilapia, in the same year in the Seyhan Dam Lake conditions, and the trial of the cultivation of a second crop, the production unit utilized a period, in which it would otherwise not function, with production, while at the same time enabling the more rational utilization of the unit by obtaining additional profit from a second crop. In this respect, this model provides an example to fish producers and is recommendable in water reserves having similar climatic conditions.

Keywords: *Oncorhynchus Mykiss*, Cage Culture, *Oreochromis Aureus*, Alternate Culture

MOLECULAR IDENTIFICATION AND PHYLOGENETIC CHARACTERIZATION OF
ZONOTIC TREMATODES IN FRESHWATER FISHES CAUGHT FROM THE CENTRAL
ANATOLIA REGION OF TURKEY

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Abstract:

Trematodes belonging to the family of *Opisthorchidae*, *Echinostomatidae*, *Heterophyidae*, and *Clinostomidae* have zoonotic potential in humans who consume raw or undercooked freshwater fish that infected with these trematode metacercariae. To date, there have not yet been molecular studies on the occurrence, prevalence, and characterization of these trematodes in freshwater fish in Turkey. Therefore, in the present study, it was aimed to determine the occurrence, molecular prevalence and phylogenetic characterization of fish-borne zoonotic metacercarial infections in freshwater fishes caught from the Central Anatolia Region of Turkey. For this purpose, a total of 510 freshwater fish specimens belonging to different genera were examined individually in terms of zoonotic metacercarial infections by visually and using pepsin digestion technique. All the metacercariae found in the study were morphologically identified and confirmed by using advanced molecular techniques. Partial fragments of mitochondrial cytochrome oxidase I (mt-COI) and internal transcribed spacer 2 (ITS-2) gene regions of metacercariae were amplified for sequence and phylogenetic analyses. All the metacercariae were morphologically and molecularly identified as *Clinostomum complanatum*. No other zoonotic trematode metacercariae was found in this study. Only three specimens belonging to *Squalius cephalus* were found to be infected with metacercariae. Prevalence for this host and overall prevalence were determined 2.4; 0.7%, respectively. The sequence analyses of ITS-2 and mt-COI revealed three and nine polymorphic sites leading to the detection of four and five haplotypes within the related gene regions, respectively. Consequently, this study funded by the Erciyes University Scientific and Technological Research Center, Kayseri, Turkey (project number, TCD-2016-6795) has provided first combined morphologic and molecular data on *C. complanatum* infecting Turkish freshwater fishes.

Keywords: Central Anatolia Region, Freshwater Fish, Trematode, Zoonosis, Phylogenetic Characterization

MOLECULAR CHARACTERIZATION OF ANTIBIOTIC RESISTANCE IN *YERSINIA*
RUCKERI ISOLATES

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Abstract:

The intensive and unconscious use of antimicrobial agents in aquaculture has resulted in the emergence of antibiotic resistant bacteria in aquaculture facilities, the increase of antibiotic resistance in fish pathogens and in the transfer of these resistance determinants to bacteria of terrestrial animals and to human pathogens. This objective of the present study was to determine antibiotic resistance profiles in *Y. ruckeri* strains isolated from Turkish aquaculture industry. We used 25 *Y. ruckeri* strains isolated from different regions of Turkey and *Y. ruckeri* ATCC 29473 as a positive control. All isolates was confirmed *Y. ruckeri* specific PCR with ruck1-ruck2 primers (expected size, 409bp). Antimicrobial activity of the strains was tested by disk diffusion assay against the 14 different antibiotics. The presence of various antibiotic resistance genes (ARGs) including erythromycin (ermB, ermF), florfenicol (floR), sulphonamide (sull, sullI ve sullII), tetracycline (tetA, tetB, tetC, tetD, tetE ve tetG) and trimetophrim (dhfr1) was determined by PCR.

Yersinia ruckeri isolates were found to have different levels of antimicrobial activity against 14 different antibiotics used in the study. 28% of all isolates were resistant to 5 different antibiotics. There was a high incidence of resistance to oxolonic acid (84%), and a low incidence of resistance to enrofloxacin (4%). It was determined that 7 of the isolates (28%) has Sull resistance gene, 4 (16%) of isolates have the sullI resistance gene, 1 isolate (4%) has tetB resistance gene and 9 of the isolates (36%) has tetC resistance gene, and 5 (%20) of the isolates have tetD resistance gene. In conclusion, present study was considered to may provide a basis for further studies on molecular determination of some ARGs in *Y. ruckeri* isolates from fishes.

Keywords: Antibiotic, Antibiotic Resistance Gene, *Y. Ruckeri*

Acknowledgements: This research was supported by the Research Fund of Ondokuz Mayıs University (Project Number: PYO.VET.1901.17.017).

THE EFFECTS OF LARGER FISH AND SIZE GRADING ON GROWTH PERFORMANCE
OF ASIAN CAT FISH (*PANGASIANODON HYPOPHthalmus*) AT FLOATING CAGES IN
SEYHAN DAM LAKE IN ADANA

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Abstract:

Young Asian cat fish (*Pangasianodon hypophthalmus*) have been cultured for 60 days feeding period in floating cages in Seyhan Dam Lake Adana. Fish were graded as a triplicated group. Research trails were established as 100% small group (B), 50% small + 50% large fish (group K1), 75%small + 25%large fish (group K2). At the end of the study best growth rate was obtained from group B (171.26g,) , and the other groups (K1 and K2) were 159.92 g and 151,17 g. respectively. In terms of specific growth rate the individuals in the size graded group are ahead of the other groups (2.41% day⁻¹) with a performance of 2.70% day⁻¹. All groups have small individuals and homogeneous group (B) individuals have reached a higher specific growth rate than small groups of other groups. From the perspective of large individuals, the K1 group, which is half-mixed, showed a performance of 2.24% with day⁻¹ and with the majority of K2 group (2.13% -1 day). Looking at the results in terms of food conversion rate large individuals has reduced FCR (0.70) in equality (in group K1). In the other groups, a very good FCR figure was achieved, with a value of 0.74 in the homogenous group and 0.80 in the K2 group. As a conclusion, growth of young Asian cat fish (30 g) were positively affected from size grading application in cage culture conditions.

Keywords: Panga, Asian Cat Fish, Size Grading, Cage Culture

COMPARISON OF TWO DIFFERENT MESH SIZE IN CAGE CULTURE OF TILAPIA FRY

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Abstract:

Temperate or sub-tropical regions, (as in coast of Mediterranean in Turkey) production of tropical animals such as tilapia is limited to a single seasonal crop. The primary problem for the culture of tilapia in sub-tropics is the limited growing season during which animals cannot be grown to marketable size. Because of the culture period in cage is limited, the fry is stocked the early stage of their life. For this reason generally “hapa or bitinan” technics are used for tilapia fry culture in Southeast Asia. In this research the effects of two different mesh size on growth of Nile tilapia fry. At the start of investigation the fish have been stocked same mesh size (1 mm). After the first period (3rd week) Group A has been transferred to the other net mesh size (12mm). The other group (Group B) stayed the same net for this period. At the third weighing (end of the 6th week) the fish which transferred (7.13 g) grow faster (%12.81) than the other group (6.32 g). The group B has been transferred to the large mesh size (12mm) at the 8th week. After the transfer the fish which in Group B have been grow faster than their first stage although at the end of the study the difference between the groups has increased (%14.36) ($P < 0.05$).

Keywords: Aquaculture, Tilapia, Cage, Mesh Size.

IDENTIFICATION BY PCR AND SEQUENCE ANALYSIS OF ISOLATION *VIBRIO*
ANGUILLARUM STRAINS IN RAINBOW TROUT (*ONCORHYNCHUS MYKISS*,
WALBAUM 1792) CAGE FARMS IN KAHRAMANMARAŞ CITY, TURKEY

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Abstract:

This study includes the isolation and examining phenotypic and genotypic characteristics of *Vibrio anguillarum* strains in rainbow trout cultured in cage farms in the province of Kahramanmaraş, Turkey. For this purpose, samples of liver, spleen, kidney and intestinal from different rainbow trouts that were weighing around 250-300 g, were taken from different rainbow trout cage farms in June 2014. In order to examining phenotypic characteristics of *Vibrio anguillarum*, biochemical identification test; Biolog System were applied to the pure strains obtained from samples that were taken from rainbow trouts. Polymerase Chain Reaction (PCR) technique with specific primer was used to verify 20 *Vibrio anguillarum* strains, that were determined according to phenotypic and biochemical characteristics of bacteria. Subsequently, it was confirmed that all of these are *Vibrio anguillarum*. Genotypic characteristics of *Vibrio anguillarum* strains that were verified with PCR were examined. Sequence analysis of the resulting *Vibrio anguillarum* from the obtained samples were performed and then these data were interpreted. As a result of this study, the bacteria *Vibrio anguillarum* were identified in two different rainbow trout cage farms. While the identification period of *Vibrio anguillarum* took three weeks with culture method, it was performed in a short time with PCR technique.

Keywords: *Oncorhynchus Mykiss*, Phenotypic, Genotypic, *Vibrio Anguillarum*, PCR, Sequence

LENGTH-WEIGHT RELATIONSHIPS OF *LUCIOBARBUS PECTORALIS* FROM THE
MENZELET DAM LAKE OF KAHRAMANMARAS

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Abstract:

Length-weight relationships are of great value in fisheries research, as they are essential to convert length-frequency data into accurate populations estimates and are so often used in stock assessment methods. In this study, the length-weight relationships by sex of the *Luciobarbus pectoralis* population living in Menzelet Dam Lake (Kahramanmaras) were examined. Fish were caught with gillnets. A total of 150 samples were collected and analyzed. The length-weight relationship was estimated using the linear regression model $W=aL^b$ and condition factor, (k) determined using the equation $K= 100.W/L^3$. Total length of samples ranged between 16.50-20.60 cm (male), 15.50-21.00 cm (female) and weight 30.81-61.64 g (male), 23.87-75.65 g (female) for *L. pectoralis*. The length-weight relationship of fishes were found as $W=0.067L^{1.778}$ for all specimens, $W=0.039L^{2.418}$ for male and $W=1.063L^{1.228}$ for females. Negative allometric growth was recorded for both sexes. The condition factor were varied as 0.731 (all individuals), 0.729 (male) and 0.732 (female) in *L. pectoralis*. The difference of length-weight relationship between *L. pectoralis* was not statistically significant ($p>0.05$). This study, in future, has provided baseline information on the LWR and k of *L. pectoralis* that would be useful for fish biologists and managers to adapt the adequate regulations for sustainable fishery management in the natural water.

Keywords: Menzelet Dam Lake, Fish, *Luciobarbus Pectoralis*

MONOSEX CULTURE OF TILAPIA IN CAGE CONDITION IN SEYHAN DAM LAKE
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Abstract:

An evaluation comparative growth performance of male, female and mixed-sex of overwintered Nile tilapia (*Oreochromis niloticus*) was carried out in triplicate in floating cages over a period of 70 days. The experiment was carried out from June to September. The experiment was carried out in Seyhan Dam Lake floating net cages established for a private enterprise. 1x1x1.5 m in size, 1.2 cm mesh, floated on polyethylene tins cages that are equipped with nets are used. 20-25 g over winterized 1 elderly tilapia (*Oreochromis niloticus*) are found in Ç.Ü.S.U. Obtained from faculty research station. Some growth performances of three groups were examined. Floating pellets were fed at 5% (b.wt. day-1, 45% crude protein) during the culture period. Water quality and fish growth were monitored weekly. Significant differences in mean body weights between the groups were observed at the final harvest ($P<0.05$). Daily weight gains of males, females and mixed-sex groups were $1,872\pm 0,208$ g.d-1, $0,602\pm 0,147$ g.d-1, and 1.141 ± 0.046 g.d-1 respectively ($P<0.05$). At the end of the study, male groups have a higher total yield than the other groups ($P<0.05$). The lowest FCR (1.49 ± 0.07) and the highest yield (5.767 ± 0.65 kg/m³) were obtained from males. According to this scores male monosex culture of Nile tilapia more applicable than mixed-culture in cage condition in Seyhan Dam Lake Adana Turkey.

Keywords: Male Tilapia, Monosex , Cage Culture

AN ALTERNATIVE HOMEMADE DOG FOOD: DOG SAUSAGE

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Abstract:

In this study, homemade foods prepared for adult dogs were filled into the intestine and tested for acceptability by adult dogs. Three different foods were prepared. In the first food, rice and barley flour were used. Potatoes and carrots were added to the second food instead of grains. Both of the two formulas were cooked for 20-30 minutes with water added at 60% and cooled. The third formula was based on meat and prepared as raw. Meat products and vegetables used in all three formulas were passed through electric chopping machine. All foods were filled into the intestines in the form of sausages. Round sausages were made by connecting with rope and sausages were dried with natural airflow for 7-12 days.

Nutrient analysis of sausages was done. Dry matter of grain containing sausage, grain free sausage, and raw food were found to be 80, 79, 64% respectively. The crude protein levels in 100 grams of dry matter were 37, 55, and 58%, respectively.

Sixteen Golden adult dogs were used in the feeding experiments. The sausages were cut into 3-4 cm pieces and each dog was given three foods at the same time. All the dogs consumed the sausages in a short time. After 10-15 minutes, the same sausages were again consumed quickly by all dogs in a similarly.

No color or odor changes were observed in the controls made after kept at room temperature for 3 months in sausages which were vacuumed 7-12 days after being produced.

Keywords: Dog, Homemade Food, Grain, Grain-Free, Raw

EFFECTS OF NOBILETIN IN EXPERIMENTAL HEPATORENAL TOXICITY MODEL
INDUCED BY ACETAMINOPHEN IN RATS

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Abstract:

The purpose of this study was to determine the nobiletin (Nob) administration on the damages in the hepatorenal oxidant-antioxidant system and some serum biochemical parameters resulted from acetaminophen (APAP) exposure.

The animals were composed of 24 animals in four groups of 6 animals in each group. Groups; control (C), nobiletin (Nob), acetaminophen (APAP) and treatment group (Nobiletin + APAP). Only DMSO was given to the control group. Nob group received nobiletin (10 mg / kg) for ten days. On the tenth day of the APAP-treated group study, a single dose of APAP 1000 mg/kg was administered orally. (Nob + APAP) the group, nobiletin (10 mg/kg) was administered for ten days, followed by a single dose of APAP (1000 mg/kg) and after 48 hours the experiment was terminated.

Biochemical parameters (MDA, GSH, GSH.Px, Catalase) and serum AST, ALT, urea, and creatinine analyzes and histopathological analyzes were performed in liver and kidney tissues.

As a result, liver and kidney MDA levels decreased in group 4 (Nobiletin + APAP) compared to group 3 (APAP) ($p < 0.01$). Liver tissue GSH level and GSH.Px activities were increased in group 4 (Nobiletin + APAP) compared to group 3 (APAP) group ($p < 0.01$). Serum, AST and ALT levels decreased in group 4 (Nobiletin + APAP) compared to group 3 (APAP) ($p < 0.05$).

In conclusion, nobiletin administration decreased acetaminophen-induced oxidative damage, increased antioxidant levels, improved serum biochemical parameters and histopathological findings.

Keywords: Nobiletin, Acetaminophen, Oxidative Stress

EFFECTS OF NOBILETINE ON RENAL ISCHEMIA REPERFUSION INJURY IN RATS

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Abstract:

In this study, it was aimed to investigate the effects of nobiletin on the renal ischemia-reperfusion injury. The animals were composed of 24 animals in four groups of 6 animals in each group. Groups; control (C), nobiletin (Nob), ischemia-reperfusion (IR) and treatment group (Nob + IR). Only DMSO was given to the control group. Nob group received nobiletine (10 mg/kg) for seven days. In IR group, kidney ischemia-reperfusion injury was formed. (Nob + IR) the group, nobiletine (10 mg/kg) was given for seven days, followed by renal ischemia-reperfusion injury. At the end of the study biochemical parameters (MDA, GSH, GSH.Px, Catalase) in kidney, serum urea and creatinine levels were investigated. As a result, kidney tissue MDA levels were increased in group 3 (I.R). However, the increment decreased in the 4th group (Nob + IR) compared to the 3rd group (IR) ($p < 0,001$). GSH level, GSH.Px and CAT activities increased in group 4 (Nob + IR) compared to group 3 (IR) ($p < 0.05$). Serum urea and creatinine levels decreased in group 4 (Nobiletin + IR) compared to group 3 (IR) ($p < 0.05$). In conclusion, it was determined that nobiletin administration reduced oxidative damage induced by renal ischemia-reperfusion injury, increased antioxidant levels and improved serum biochemical parameters.

Keywords: Nobiletin, Ischemia-Reperfusion, Oxidative Stress

DETERMINATION OF THE EFFECTIVENESS OF MONO CELL CULTURES OF
ENTODINIUM CAUDATUM IN THE ACIDOTIC ENVIRONMENT BY IN VITRO GAS
TEST

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Abstract:

This study was conducted to determine the efficacy of *Entodinium caudatum* in the acidic environment in terms of prevention of subacute acidosis (SARA). An acidic in vitro environment was created using different ratios of wheat and maize. Other protozoans were removed from the rumen fluid used in vitro to determine the activity of *E. caudatum*.

According to this study, no statistically significant effect of *E. caudatum* monoculture on pH and the formation of ammonia (NH₃-N, mmol/L), while the significant effect of grain diet types was observed (P<0.0001). It was determined that *E. caudatum* inoculation reduced the lactic acid concentration in the medium throughout the incubation (P<0.001). Lactic acid level increased with incubation time (P<0.0001), and *E. caudatum* inoculation decreased lactic acid level depend on incubation time (P<0.038). *Entodinium caudatum* culture shortened the fermentation start time (Lag time) (P <0.01). Specific fermentation rate (P<0.0001), which was increased by the increase of wheat ratio from grains, decreased with the addition of *E. caudatum* cultivar (P<0.003). Total gas production (TGP) was differentiated with the substrate (P<0.01). The addition of *E. caudatum* monoculture increased total gas production (P<0.0001). In this study, it was determined that *E. caudatum* monoculture inoculation increased methane production (P<0.0001) while decreasing propionic acid ratio (P<0.0001).

As a result, *Entodinium caudatum* monoculture used in the research led to an earlier start of fermentation. However, it has been determined that lactic acid production is reduced by reducing the specific fermentation rate. It is thought that starch granules are rapidly taken into the cells of *E. caudatum*, by inhibiting rapid fermentation, thus limiting production of lactic acid. The efficacy of *E. caudatum* on the prevention of SARA formation can be tested better with in vivo studies. And commercial preparations can be prepared and used.

Keywords: *Entodinium Caudatum*, Subacute Rumen Acidosis, In Vitro Acidotic Environment

PREVALENCE OF CATTLE FOOT DISEASES IN AGRİ PROVINCE

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Abstract:

This study was conducted to determine the prevalence of foot diseases in cattle in Ağrı province. The study was carried out on a total of 1486 cattle of different breeds, ages and genders. Separation according to breeds of animals in the study were 34.66% (515 cases) Brown Swiss, 30.96% (460 cases) Simmental, 24.02% (357 cases) Indigenous breed and 10.36% (154 cases) crossbreed. The separation of the cases according to genders were 84.45% (1255 cases) female and 15.55% (231 cases) male. Foot diseases were found in 280 of 1486 cattle. The determined diseases were found interdigital dermatitis in 29.45% (48 cases), digital dermatitis in 23.31% (38 cases), interdigital hyperplasia in 16.57% (27 cases), bruised sole in 15.95% (26 cases), fissured ungulae in 6.75% (11 cases), interdigital phlegmon in 3.68% (6 cases), sole ulcer in 2.45% (4 cases) and white line diseases in 1.84% (3 cases). It were observed both lesions and hoof deformities in 54.29% (152 cases), lesions only in 3.93% (11 cases), hoof deformities only in 41.79% (117 cases) of the cases foot disease determined. Lameness were observed 2.14% in the right front foot, 4.29% in the left front foot, 47.86% in the right hind foot and 45.71% in the left hind foot. The lesions were found to be located more in the lateral in the hind foot (55.73%) and more in the medial nail in the front foot (61.11%).

According to the results of this research, the annual prevalence of foot diseases in cattle in Ağrı province was determined as 18.84% between 2016-2017.

Keywords: Foot, Cattle Disease, Prevalence, Ağrı

POSITIVE EFFECTS OF CONSORTIUM PROBIOTICS ON BROILER CHICKENS

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Abstract:

In poultry production, feed accounts for nearly 70% of total costs, which has encouraged the design of numerous strategies to reduce these costs. Antibiotic growth promoters (AGP) have been very popular for enhanced growth performance. However, excessive use of AGP in animal diets has encouraged the development of antibiotic-resistant bacterial strains, which transfer through the food chain and impose negative effects on both animal and human health. Probiotics, on the other hand, improve intestinal microbial balances, enhance animal immune responses, and protect them against pathogens. This study's objectives were to determine the efficacy of SCD Bio Livestock[®], a patented commercial consortia probiotics formula, on the feed conversion ratio (FCR) and mortality rates of broiler chickens, and to compare the product's effects on these parameters with antibiotic and negative control groups. This study was performed in Pune, India by the Institute of Poultry Management and Technology (IPMT). The study involved 1,320 broiler chickens, divided into three groups of 440 each. All bird groups were kept under same conditions. The tested parameters were body weight, FCR, average daily feed intake, and mortality. Parameters were recorded weekly, over six weeks (42 days). At the end of the sixth week of trial, no significant differences ($P>0.05$) were observed in FCR and the mortality among three groups. However it was observed that the probiotic group gave the best FCR value (1.76) while the antibiotic and control groups had 1.78 and 1.83, respectively. And the mortality rates were at 3.10%, 3.57%, and 5.24% for the probiotic, antibiotic, and control groups, respectively. It was concluded that the consortia probiotics product can replace antibiotics for better weight gain and FCR ratios, along with better mortality rates.

Keywords: Consortium Probiotics, Antibiotic, Broiler, FCR, Mortality

THE EFFECT OF DIFFERENT BROILER LITTER MATERIALS ON TIBIAL
DYSCHONDROPLASIA

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Abstract:

Tibial dyschondroplasia (TD) in broilers was first described by Leach and Nesheim (1965). The bone lesion is consisted of the proximal end of the tibia. There is occurred abnormal cartilage by unvascularized and unmineralized.

In this experiment, two hundred eighty eight day-old Ross broiler chicks were used. The trial design with 2 litter (wood shavings and rice hull) and 3 sepiolite (0, 25 and 50%) groups each containing 6 replicate pens of 8 chicks. Each litter groups were divided into 3 sepiolite groups; control (only 4.32kg litter per pen), 75% litter with 25% sepiolite mixture (3.24kg litter and 1.08kg sepiolite per pen) and 50% litter with 50% sepiolite mixture (2.16kg litter and 2.16kg sepiolite per pen). Chicks were weighed on arrival and randomly assigned to groups. At 42 days of age, 6 broilers in each group were selected according to the group body weight and were slaughtered. Then, tibia was examined for tibial dyschondroplasia. The head of the tibiotarsal bone was cut with a sharp knife on proximal tibiotarsus and scoring the amount of cartilage tissue on the cut (1 = no cartilage, 2 = some to one third, 3= more than one thirds). Significance testing of differences in percentages of TD score were done by Chi-square test. A value of $P < 0.05$ was considered statistically significant. TD incidences in the broilers reared on the wood shavings and rice hull were 27.8 and 33.3%, respectively ($X^2=0.131$, $P=0.717$). And, 33.4, 25.0 and 33.3% of the broilers had TD lesions in groups reared with 0, 25 and 50% additions of sepiolite, respectively ($X^2=0.262$, $P=0.877$). In our study, there were no significant differences in the litter and sepiolite treatments for the TD incidence in broilers.

Keywords: Broiler, Litter, Tibial Dyschondroplasia

COMPARING THE EFFECTS OF POLYHEXANIDE, POLOXAMER AND COMFREY
(*SYMPHYTUM OFFICINALE L.*) ON THE TREATMENT OF THIRD-DEGREE BURN OF
RATS

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Abstract:

In this study, it was aimed to determine the effects of applying Polyhexanide+Poloxamer and Polyhexanide+Poloxamer+Comfrey (*Symphytum officinale L.*) on third-degree burn wound healing in rats. The research was carried out on 42 adult albino rats. Third-degree burns were created with hot iron 15 mm in diameter applied on the back of all rats for 10 seconds. Rats were randomly separated into 3 main groups, each group consisting of 14 animals, and treatment began after 24 hours of the burn injury. Sham group (burned but no topical agent applied), in the Polyhexanide+Poloxamer groups, 1 ml of their mixtures was administered via syringe to the burn wound, in the Polyhexanide+Poloxamer+Comfrey (*Symphytum officinale L.*), (10 g) group, total 1 mL of their mixture was administered via syringe to the wound. The wounds were checked daily. Seven rats from each group were sacrificed on the 7th and 14th days after the treatment. Burned skin tissue samples were collected from the rats for histopathological examinations. Histopathological evaluations on the 7th and 14th days showed that the wound healed faster in the treatment groups than the sham group. According to the results of this study, Polihexanide and Comfrey (*Symphytum officinale L.*) are effective in healing experimentally created third-degree burn in rats.

Keywords: Polihexanide, Poloxamer, Comfrey (*Symphytum Officinale L.*), Third Degree Burn Wound Healing, Rat

THE EVALUATION OF COAGULATION PROFILE IN CALVES WITH ATRESIA COLI

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Abstract:

The aim of this study is to evaluate the changes in hemostatic system parameters in calves with atresia coli and the importance of these parameters for prognosis of atresia coli. Colonic atresia is a congenital defect in human and domestic animals. In calves, intestinal atresia is identified in different segments of the intestine, including the rectum/or anus, colon, and ileum.

The material of this study consisted of 40 calves with atresia (Experimental group) and 10 healthy (Control group) calves aged 2-5 days. Diagnose of atresia coli in calves was performed by the clinic, laboratory, ultrasound and laparotomy examinations. The coagulation profiles (PT, aPPT, D-Dimer, and fibrinogen) were measured in all calves. The levels of prothrombin time (PT) ($p < 0.05$), activated partial thromboplastin time (aPTT) ($p \leq 0.001$) and D-dimer ($p \leq 0.001$) levels were found significantly higher and fibrinogen ($p < 0.05$) level was found significantly lower in calves with atresia coli.

In conclusion, PT, APTT, D-dimer, and fibrinogen levels were found to be important predictors of changes of coagulation status in calves with atresia. The hemostatic abnormalities that were observed in the calves with atresia coli may be due to the development of disseminated intravascular coagulation (DIC). This situation may indicate that the sepsis process has begun in calves with atresia coli which that develop abdominal distention.

Keywords: Atresia Coli, Calf, Coagulation Profile

D-DIMER, TOTAL ANTIOXIDANT, OXIDANT STATUS AND NITRIC OXIDE LEVELS IN
DOGS WITH CANINE PARVOVIRAL ENTERITIS

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Abstract:

On the study that is presented, the aim is to reveal the level of the serum oxidant and antioxidant of parvoviral enteritis dogs and the possible risk of disseminated intravascular coagulation. In the study, 30 dogs of different breeds and ages brought to the Afyon Kocatepe University-Animal Hospital to be evaluated. The dogs were divided into two groups. The first group consisted of 20 dogs carrying parvoviral enteritis findings in the hospital and make the parvovirus diagnosis with the rapid test kit. Whereas, the 2nd group consisted of 0-12 old healthy dogs. Diarrhea and vomiting complaints were taken to our clinic and 0-12-month-old dogs were examined with the fast test kit and then positive patients were included in the study. Blood samples were taken from the patients before the treatment, into jelled biochemistry tubes. The serum obtained from the samples were kept at -20C. Total Antioxidant Status (TAS), Total Oxidant Status (TOS), Nitric Oxide (NO) and D-dimer concentration were measured from the serum samples. The statistical analysis of the obtained data, when compared with the control group is showing statistically considerably decrease in TAS level ($p < 0,05$) whereas, a meaningful level increase in TOS, NO and D-dimer levels ($p < 0,05$) has been detected. As a result, it was determined that antioxidant capacity which oxidative stress increases in parvoviral enteritis dogs is decreased and that there is a risk of developing DIC in parvoviral dogs. Considering these results in treatment, the prognosis may be better.

Keywords: CPV, Diarrhea, Coagulation, Oxidative Stress

A RARE CASE OF DEXTROCARDIA IN A CAT WITH SITUS SOLITUS (KARTEGENER'S
SYNDROME?)

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Abstract:

Dextrocardia defines that heart is positioned in right hemithorax with the apex turning toward the right. It is also possible to be with situs inversus in which all organs in body has formed as a mirror image of normal. Respiratory signs associated with ciliary abnormalities often accompanies the dextrocardia (Kartegener's syndrome). A 5-month-old intact female cat with a history of sneezing for 2 months referred to Department of Internal Medicine, Animal Hospital of Veterinary Faculty, Ankara University. Physical examination revealed bilateral crackles of caudal lung fields and, normal fever (38 C0), performance, cyclic activity and mucosal pallor. Routin blood works including complete blood count and serum profiles were also determined (increased serum creatinin kinase activity). Cardiac systolic murmur was also auscultated. Thoracic radiography revealed dextrocardia and pulmonary edema. Normal organ placements were also identified in abdominal ultrasonography. Echocardiography also revealed moderate mitral regurgitation without any other structural abnormalities. Terbutaline (0.5 ml/cat BID) and oxygenation was initiated in the cat. No deterioration was occured 3 month follow-up. 4 month later cat referred the hospital again with the same symptoms including seneezing, coughing and exercise intolerance. Echocardiography revealed any other abnormalities. Smilar therapies were applied. Case is still being followed for the recurrence.

Keywords: Cat, Dextrocardia, Kartegener, Situs Solitus

THE PREVALENCE OF *ESCHERICHIA COLI*, *CRYPTOSPORIDIUM* AND *GIARDIA* IN
DIARRHEIC CALVES

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Abstract:

One of the biggest problems with dairy cattle breeding is calf (neonatal) diarrhea. Every year there are many deaths and economic losses due to neonatal calf diarrhea. Especially *E. coli* diarrhea causes serious economic loss. Besides, *Cryptosporidium* and *Giardia* even the late diagnosis in the cases are increasing their costs of treatment leads to the death of the neonatal calf. 101 neonatal calves who complained of diarrhea were included in the study material. *E. coli*, *Cryptosporidium* and *Giardia* were investigated by immunochromatographic rapid test kits and acid-fast staining method in stool samples. There were no enteropathogens investigated in 17 calves. Of the remaining 84 calves, 65 were single enteropathogens and 19 were multiple enteropathogens. 65 calves with single enteropathogen; 12 of *E. coli* K99, 20 of *Cryptosporidium*, 2 of *Giardia* and 31 of other (*rotavirus*, *coronavirus*) enteropathogens were detected. Of the 19 calves with two enteropathogens; 9 in *Cryptosporidium* + *rotavirus*, 2 in *Cryptosporidium* + *coronavirus*, 1 in *giardia* + *Coronavirus* and 7 in *rotavirus* + *coronavirus*. With the studies done, the frequency of these enteropathogens and other factors should be determined. Thus, the economic damage may be reduced to the lowest level and informing the necessary information and creating control programs.

Keywords: Calf Diarrhea, Cryptosporidiosis, *E. Coli*, Giardiosis, Prevalence, *Rotavirus*

ASSOCIATION OF THE SITE OF MUSCULOSKELETAL INJURY WITH THE TYPE OF
LAMENESS DIAGNOSED BY COMMERCIAL INERTIAL SENSOR SYSTEM IN HORSES.

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Abstract:

The subjective evaluation of the type of lameness is challenging, especially in cases of mild lameness. With a commercial inertial sensor system the pushoff and impact component of a lameness can be characterized objectively. Until now, the association between cause and type of lameness has not been investigated using objective lameness evaluation. The aim of this study was to analyze the association of the lameness type lameness (impact, push off and mixed) with the site of musculoskeletal injury causing the lameness.

Clinical cases presented to the Equine Clinic, Freie University of Berlin from April 2011 to December 2015 were retrospectively analyzed. In 519 horses lameness examination was performed using inertial sensor system. Lameness was categorized in impact, push off or mixed and localized to an anatomic site using diagnostic analgesia. The type of lameness and anatomic site were analyzed for correlation. The most common type of lameness was impact in forelimb (253 horses, 93.7%) and mixed in hindlimb (266 horses, 53.4%). Lameness was one site injury in 80.6% of fore- and 67.7% of hindlimb lameness cases, respectively. The site of lameness could be localized to the distal limb in 87.7% forelimb and 52.6% hindlimb, respectively.

Tendon and ligament injuries were the most common diagnoses in both, forelimb (32.8%) and hindlimb (53.8%). In forelimbs, palmar heel pain was the most frequent localisation whereas in hindlimbs lameness could most frequently be localized to the lower hock.

There was no significant correlation between the cause of lameness and the lameness type in fore- or hindlimbs.

Lameness in the forelimb can be most frequently characterized as impact and lameness in the hindlimb as mixed. Most causes for lameness could be localized to the distal limb. There was no significant association between the characteristics of the horse lameness with the localisation of musculoskeletal injury.

Keywords: Horse, Impact Lameness, Pushoff Lameness

TREATMENT OF IVERMECTIN TOXICITY IN A CALF, CASE REPORT

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Abstract:

A 17 days old, 40kg weight calf was admitted to Afyon Kocatepe University Animal Hospital, with the history of salivation, dyspnea, dysstasia, and loss of appetite. History revealed the administration of ivermectin (160mg). Clinical examination revealed salivation, 37.3°C body temperature, tachycardia, tachypnea, depression, incoordination, and tremors. Based on clinical signs and history of administration of overdose ivermectin, the case was diagnosed as ivermectin toxicity. The calf was treated with supportive therapy of fluids, amoxicillin trihydrate plus clavulanic acid, dexamethasone, vitamin B complex and teofilin daily for three days. Blood samples were taken from the patient to investigate changes in blood values both before and after treatment. The patient was fed orally with the gastric tube for two days due to the inability to stand on feet and lack of swallowing reflex. At the end of the second-day oral feeding began following observation of the swallowing reflex. Clinical improvement started on the second day while complete clinical recovery was observed at the end of the third day of treatment. When blood samples were examined, it was found that there were significant differences in some values before and after treatment. As antidote is not available, such cases of accidental administration of overdose ivermectin could be managed successfully with supportive treatment and patient monitoring.

Keywords: Antihelmentic, Calf, Ivermectin, Toxicity

COMPARISON OF THE CLINICAL EFFECTS OF PREDNISOLONE, AZATHIOPRINE AND
OLIGODEOXYNUCLEOTIDE (ODN) APPLICATIONS IN EXPERIMENTALLY INDUCED
ENDOTOXIN UVEITIS IN RATS

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Abstract:

Purpose: To investigate the clinical effects of Prednisolone, Azathioprine (AZA) and Oligodeoxynucleotide (ODN) applications in experimentally induced endotoxin uveitis in rats. **Methods:** A total of 28-female, adult Wistar albino rats were used. To form uveitis, 176 µg/rat LPS from E. coli was injected subcutaneously. **Results:** There was a numerical weight loss in all groups in the course of the infection. Intraocular pressure (IOP-R) changes within groups demonstrated that values differed significantly with an increasing trend in Prednol and ODN groups; with a decreasing trend in AZA group after the second period while the control group did not show a significant difference. IOP-L values increased in AZA and ODN groups, but Prednol group showed a decreasing trend after the second period. **Conclusion:** Immunosuppressive effect of Prednol seems higher in terms of IOP values compared to others. The results of the Schirmer test representing the average values of both eyes showed that Prednol group had the lowest level of the tear in the post-treatment period. Considering the results of this study, it was thought that the injection route of LPS molecule might affect the severity of uveitis and Prednol was found to be more advantageous medication in terms of treatment cost account and immunosuppressive effect compared to others.

Keywords: Azathioprine, Odn, Prednol, Rat, Uveitis

EFFECT OF MEDETOMIDINE-MIDAZOLAM-KETAMINE AND SEVOFLURANE
ANAESTHETIC AGENT COMBINATION IN CHICKEN

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Abstract:

Cardiorespiratoric effects of medetomidine (MED) and midazolam (MID), ketamine (KET) and sevoflurane (SEVO) 2% inhalation agents were investigated in chickens. Following simultaneous intrapleural injection (IP) of MED (50 µg/kg) and MID (0.5 mg/kg), KET (25 mg/kg) was administered IP 10 min later and anaesthesia maintained by 2% SEVO using Ayres T piece device for 30 minutes. Heart-respiratory rate, cloacal temperature, clinical effects and electrocardiogram (ECG) parameters were recorded before anaesthesia (BA) (Baseline value 0. hours), at anaesthesia intervals and recovery time. Compared to the baseline value, a statistically significant decrease in cloacal temperature, heart and respiratory rates were determined for each anaesthesia intervals ($p < 0.05$). Heart rate dramatically decreased following the administration of MED + MID injection and partly increased after the KET application and then reached a near baseline value. There were significant differences for clinical reflexes evaluation between the baseline value and anaesthesia intervals ($p < 0.05$). During ECG assessment, a statistically significant increase in the mean amplitude of the P wave was observed for MED + MID and KET anaesthesia. Mean ST interval showed a significant upward trend in contrast to QRS interval ($p < 0.05$). This increase was significant between BA and MED + MID anaesthesia ($p < 0.05$). In conclusion, MED+MID+KET and SEVO anaesthesia combination caused alterations in physiological parameters but no life-threatening effects occurred. A smooth and satisfactory anaesthesia may be provided by MED+MID+KET and SEVO anaesthesia in chickens

Keywords: Chicken, Anesthesia, Sevoflurane, Medetomidin, Ketamin

EVALUATION OF TONOMETRY FOR MEASURING INTRAOCULAR PRESSURE IN DOGS

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Abstract:

The early detection of increased intraocular pressure (IOP) and its measurement are important factors in case of acute and chronic disorders like acute angle closure or for monitoring a chronic disease like advanced glaucoma. Changes in IOP can accompany heart and kidneys diseases. To evaluate the accuracy of the impression, applanation and rebound method in the ophthalmoscopically of healthy dogs. In conscious animals, the tonometry was preceded by the topical anesthesia using 1-2 drops of 0,5% Alcaine (Alcon, USA). In 62 eyes in 31 clinically healthy dogs of different races, gender, and ages, readings of IOP were taken with Schiottz tonometer and with Tono-Pen Vet tonometer. Results: The mean IOP values in dogs, taken with Schiottz tonometer and with Tono-Pen Vet tonometer reached the results within the range of 12 to 24 mmHg, with the mean of 16.3 ± 2.1 mmHg and within the range of 11 to 25 mmHg, with the mean of 18.1 ± 3.8 mmHg. The mean results of values taken using the two tonometers significantly differed in the statistics, the difference being 1.79 mmHg and the higher values were being read from the Tono-Pen Vet tonometer. Conclusions: In small animal practice, the most popular tonometers for IOP measurements are the Tono-Pen Vet tonometer and TonoVet. However, the high process of these devices constitute an obstacle for the popularization of this exam in Veterinary Medicine. The results and clinical observations show that Schiottz tonometer and Tono-Pen Vet are diagnostically useful pieces of equipment for measuring IOP in dogs. Both tonometers provide reliable and reproducible results and can be used for quick and efficient intraocular pressure measurements with the higher values being read from the Tono-Pen Vet. The Schiottz tonometer is the less financially burdensome alternative of the two, but, because it is ease to use, Tono-Pen Vet seems to be the more interesting option for everyday clinical practice.

Keywords: Intraocular Pressure, Impression Tonometer, Applanation Tonometer, Dogs

BABESIOSIS CAUSES REPRODUCTIVE DYSFUNCTION IN MICE: A PROOF OF
CONCEPT IN VITRO STUDY

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Abstract:

Babesias as second common blood parasites in mammals after trypanosomes have aroused wide concern particularly due to having zoonotic potential. This study was conducted to probe epididymal sperms characteristics and in vitro fertilizing potential as well as subsequent early embryo development following experimental babesiosis induction by *Babesia bigemina* in mice. In this experimental study, 24 adult male mice were randomly assigned into four equal groups including untreated control, sham, splenectomy and experimental babesiosis. Experimental babesiosis was induced in splenectomized mice through 2.0 ml intraperitoneal injection of infected heparinized blood sample belonging to a cow with confirmed *Babesia bigemina* infection. All animals were euthanized after 5 days and epididymal sperms characteristics and in vitro fertilizing abilities along with early embryo development were analyzed following infection confirmation. Experimental babesiosis resulted in epididymal sperms quantity, quality and in vitro fertilizing capacity reduction along with early embryonic development retardation compared to control, sham and splenectomy groups. These findings exhibited that *Babesia bigemina* infection can cause male subfertility and/or infertility in mice leading to early embryo development arrest.

Keywords: *Babesia Bigemina*, Early Embryonic Development, Mouse, Sperm, Zoonosis

ULTRASONOGRAPHIC EVALUATION OF ABDOMINAL CAVITY IN CATTLE WITH
GASTROINTESTINAL DISORDERS BROUGHT FROM KAYSERI PROVINCE

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Abstract:

Abdominal ultrasound is also used to determine the intestinal, omasal constipation, and dilatation of the intestines, as well as providing useful information about abdominal disorders in adult cattle and calves. In this study; the prevalence of USG findings and determined gastrointestinal diseases in cattle in over 6 months, brought to our clinics, between 01.09.2015 and 31.05.2018 has been demonstrated. The total number of cattle brought to the clinic within the specified period is 327. Of these, 134 include digestive system diseases. These diseases are 77 RPT, 17 AD, 17 ileus, 11 diarrhea, 9 omasum constipation and 3 Abomasum ulcers. Ultrasonography was performed in the cases of RPT (n= 42), right AD (n= 4), left AD (n= 2), omasum constipation (n= 3) and abdominal distension and ileus (n= 12). Abdominal USG was obtained from the left side of the sternal region with a 5.0 MHz convex transducer from the right or left abdominal wall suitable for RPT and other diseases without sedation. According to USG findings; In RPT cases, fibrin filaments and abscesses with reticular motility loss, peritoneal effusion were identified. The identification of AD was confirmed by displaying abomasal structures containing gas and contents in various sizes in the 11th and 12th intercostal space. Ileus was detected to through the backward from midline of the 12th intercostal space on the right abdominal wall. In long and short axes viewing, aggregated, enlarged small and large intestine segments with echogenic content and free fluid accumulation were determined. In this article, ultrasonographic techniques used for abdominal examination and examinations of reticular, rumen, omasum, abomasum, small intestine, and large intestine were evaluated in concordance with the cases. The findings are intended to be used by the field veterinarians and to provide a source for researchers to shed light on their future work.

Keywords: Abdomen, Cattle, Ultrasonography

EVALUATION OF THE EFFECT OF ARTIFICIAL COLLAPSE ON THE VIABILITY OF
VITRIFIED BOVINE BLASTOCYSTS

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Abstract:

In this study, the effect of artificial collapse prior to vitrification on post-thaw viability was investigated in cattle embryos produced in vitro conditions.

Maturation, fertilization and embryo culture were performed in vitro conditions of 606 oocytes obtained from 77 ovaries collected from the slaughterhouse. Embryonic development has been evaluated and recorded using traditional methods. The blastocyst rate obtained after IVP was 47.55% (289/606). 80.42% (193/289) of the obtained blastocysts were classified as quality code I. Artificial collapse was performed 60 of quality code 1 blastocysts (Group 1) and 60 were grouped as control (Group 2) without any application. Blastocoele fluids of blastocysts formed in 7-8 days of embryonic culture was aspirated through the trophoblast cells using microinjection pipettes with a micromanipulator in Group 1. Later, blastocysts in both groups were vitrified and thawed with traditional method (ethylene glycol and glycerol) and the development was monitored for 24 hours. Statistical control of variance between variables was performed by Pearson's chi-square test. All statistical analyzes were examined with a minimum error margin of 5%. The rates of re-expanding blastocyst after thawing were 96.6% (58/60) and 91.7% (55/60) in Group 1 and Group 2, respectively ($p > 0.05$). After 24 hours, viability rates were 91.6% (55/60) and 78.3% (47/60) ($p > 0.05$) and hatching rates were 65% (39/60) and 11.6% (7/60), respectively ($p < 0.05$).

As a result, in vitro blastocysts can be vitrified after the artificial collapse and that maintain high post-thaw embryo quality and viability.

Keywords: Artificial Collapse, Blastocyst, Bovine, Embryo Viability, Vitrification

INDUCIBILITY OF ESTROUS AND OVULATIONS WITH DIFFERENT METHODS IN
EARLY IN KANGAL-AKKARAMAN BREED SHEEP

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Abstract:

The aim of this study was to create a new technique which can establish more pregnancy following high estrous and ovulation rate in the anestrous period in Akkaraman-Kangal sheep.

Kangal-Akkaraman breed 375 sheep and 36 rams constituted material of the study. Sheep were randomly divided into 5 equal groups. Sponge including 20 mg Flugeston Acetate was placed into the sheep in control group (5th group) for 9 days and the day sponge removed 600IU eCG (Chronogest TR/MSD)+131,5 µg PGF2α (Estrumate TR/MSD) were administrated intramuscularly (IM). At the same day, teaser ram was released into the group and estrus behaviors were observed throughout 7 days. Additionally, to the first group (G) 4,2 µg GnRH (Receptal TR/MSD) was intramuscularly administrated simultaneously sponge placing, as for the second group (GG) GnRH was administrated IM 4 days before and after sponge placing, as for the third group (GH), 4,2 µg GnRH on day -4 and on the day sponge placed (0) 600 IU hCG (Chorulon 5x1500 IU+Diluent/MSD) were administrated IM, as for the fourth group (H) 600 IU hCG were intramuscularly administrated at the same time sponge placed. Teaser rams were removed from each group at the end of the 7th day and on the 30th day following mating early pregnancy diagnosis was performed with a B-mode ultrasound (Mindray DP50/Vet/US) included the rectal probe.

As a result of the applications, 71.19% of all sheared sheep showed oestrus. On the 30th day after mating, pregnancy rates were 31.03% in the control group and 28.57%, 19.3%, 33.33% and 33.33% respectively in the other groups. It was determined that there is no statistical difference among the groups. As a result of examination on the 60th day of pregnancy, embryonic mortality rates were found to be 42.11% in the second group and 10.53% in the third group.

Keywords: Anoestrous, GnRH, HCG, Kangal-Akkaraman

EVALUATION OF BACTERIAL PATHOGENS AND RISK FACTORS FOR HEIFER
MASTITIS IN TURKISH DAIRY FARMS

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Abstract:

The aim of this study was to determine the bacterial pathogens and risk factors for heifer mastitis in dairy farms in Turkey. The study was conducted between December 2012 and February 2013, and 439 dairy heifers from 12 randomly selected herds (average of 36 heifers per herd, ranging between 15 and 90) located in different regions of Turkey (Aegean Sea, Black Sea, Central Anatolia, Marmara, and Mediterranean Sea regions) were included. An eight-question survey was conducted. Lacteal secretion samples were taken from 439 pregnant (6–9 months) heifers and bacteriological analyses were performed. In this study, 37.47% of the samples were determined to be infected. In lacteal secretion samples, the isolation rate of coagulase-negative staphylococci and *Staphylococcus aureus* was 44.83% and 35.71%, respectively. The incidence of mastitis was calculated as $42.87 \pm 4.12\%$. The findings of this study showed that factors such as the number of animals in the herd (<50) and heifers' contact with older cows increased the incidence of subclinical mastitis; feeding with a well-balanced ration and dry cows being housed in different groups decreased the incidence of subclinical mastitis ($p < 0.01$). Practices such as separate calf pens, fly control, and using organic bedding material on farms were not statistically significant in this predictive modeling. This study revealed the higher incidence of heifer mastitis and dominant bacterial pathogens for heifers in Turkish farms. With the knowledge of risk factors for pregnant heifers, changes in management would be beneficial to prevent mastitis.

Keywords: Bacteria, Heifer, Mastitis, Risk Factors

EVALUATION OF RELATIONSHIP BETWEEN TWO ANTIOXIDANTS AND SOME
INDIVIDUAL PARAMETERS IN SUBCLINICAL MASTITIS IN DAMASCUS GOATS

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Abstract:

The aim of this study was to determine the relationship between two milk antioxidants - glutathione peroxidase (GPx) and superoxide dismutase (SOD) and individual properties (age, parity, number of offspring) in Damascus goats with subclinical mastitis in Northern Cyprus. Experimental animals included study were dichotomized as healthy (n=76; SCC <1000x10³ cell/ml) and infected (n=118; SCC ≥1000x10³ cell/ml) group according to the somatic cell counts (SCCs). Descriptive statistics for each variable were calculated and presented as “mean ± standard error of the mean”. General linear model (GLM) procedure was used to evaluate the effect of age, parity, the number of offspring and SCC to GPx and SOD. Tukey test was used as the post hoc testing procedure. A probability value of less than 0.05 was considered significant. All statistical analysis were performed by using SPSS 14.01 statistical software. GPx levels were 271.76 ± 3.16 (u/L) and 300.47 ± 9.04 (u/L) and SOD levels were 2.59 ± 0.09 (U/mL) and 2.23 ± 0.07 (U/mL) in healthy and infected groups, respectively. GLM analysis showed that GPX (p=0.02) and SOD (p=0.048) levels were different according to the SCCs. However, individual differences like age, parity, and the number of offspring were not affected by the milk GPx and SOD levels (p>0.05). In summary, goats with subclinical mastitis experienced increased levels of GPx and decreased levels of SOD, but age, parity, number of offspring were not associated with these changes pattern.

Keywords: Glutathione Peroxidase, Goat, Milk, Somatic Cell Count, Superoxide Dismutase

EFFECT OF GnRH ADMINISTRATION ON CONCEPTION RATE AFTER EMBRYO
TRANSFER IN BEEF HEIFERS

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Abstract:

The aim of this study was to investigate the effect of GnRH administration on conception rate on different days following embryo transfer in beef heifers.

The embryos obtained from Simmental cows were transferred freshly to 117 beef heifers. Ovsynch synchronization protocol was applied to recipient animals before embryo transfer. Recipient animals were divided into 3 groups following transfer (Day 4, 5 and 6). Each group was subdivided into two subgroups as GnRH (G4, n=11; G5, n=26; G6, n=24) and control (C4, n=11; C5, n=22; C6, n=23). Animals in the experimental group received 10 mcg of GnRH intramuscularly. In first group animals, received GnRH on fourth days after embryo transfer; second group animals received GnRH on fifth days after embryo transfer; third group animals received GnRH on sixth days after embryo transfer. No injections were made to the animals in the control groups. Pregnancy examinations were performed by real-time ultrasonography on day 23 following the transfer. The conception rates obtained in the GnRH groups were 45.5%, 50.0, 29.2%, respectively. In the control groups, these rates were 36.4%, 31.8%, and 34.8%, respectively.

As a result, there was no statistical difference in the conception rates among the groups.

However, obtained conception rate in G5 group was numerically higher.

Keywords: Heifer, Embryo Transfer, Conception Rate, GnRH.

INVESTIGATION OF THE EFFECT OF EMBRYO QUALITY AND DEVELOPMENTAL
STAGES ON CONCEPTION RATE DURING EMBRYO TRANSFER IN BEEF CATTLE

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Abstract:

In the present study, the effect of embryo quality and developmental period on conception rate at in vivo embryo transfer was evaluated in cattle.

The material of the study consisted of 618 excellent and good quality embryos obtained from Simental cows. For this purpose, progesterone based estrus synchronization and classical superovulation protocol were applied to the animals selected as donors. At the end of the protocol, the uterus was flushed. Obtained embryos were classified according to quality (excellent, good, weak and degenerative) and developmental stages (compact morula, early blastocyst, blastocyst and expanded blastocyst) based on IETS criteria. Classified embryos were transferred fresh to different breeds of beef heifers. Pregnancy examinations were performed on the 23rd day after transfer with real-time ultrasonography. Conception rate was 43.67% (152/351) in excellent quality embryos and 32.58% (87/267) in good quality embryos ($p < 0.05$). The conception rates obtained from compact morula, early blastocyst, blastocyst and expanded blastocyst excellent quality embryos were 44.64%, 45.56%, 45.71%, 32.14%, respectively. The conception rates obtained from good quality compact morula, early blastocysts and blastocysts were 31.60%, 32.14% and 50.0%, respectively.

As a result, embryo quality has a positive effect on conception rates at in vivo embryo transfer in cattle. However, it was concluded that the developmental stages of embryos had no positive / negative effect on the conception rates.

Keywords: Cattle, Embryo Transfer, Embryo Quality, Developmental Stage, Conception Rate.

IMMUNOHISTOPATHOLOGICAL EVALUATION OF FELINE AND CANINE EAR CANALS
TUMORS AND THE ACCOMPANYING MYOEPITHELIAL CELL POPULATION

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Abstract:

Ear canal tumors of cats and dogs are formed in any part of the ear, including the muscles, bones, connective tissues, epithelial and ceruminous glands, and layers of skin. The aim of the present study is to determine histopathologic and immunohistochemical findings in tumors of the ear canal in dogs (n:5) and cats (n:3) of various breeds and ages. Types and localizations of myoepithelial cells in these tumors were also detected in this study. Samples taken by ear canal ablation were fixed in formalin 10%, processed routinely, embedded in paraffin. The masses were sectioned at 5 μ and were stained with HE and PAS. Immunohistochemically, CK8, SMA, Vimentin, P63, β -catenin, S100, CD10, PCNA antibodies were stained by Avidin - Biotin Complex Peroxidase method (ABC-P). The malignant tumors in ear canal were diagnosed as ceruminous gland adenocarcinoma (n:1), squamous cell carcinoma (n:3), and papillary adenocarcinoma (n:4). Immunohistochemical results were as the following; negative with CD10 and positive with S100, actin, Vimentin, P63 in myoepithelial cells. CK8 and β -catenin were positive in epithelial cells. However, Positivity with PCNA was detected in cells showing mitotic activity. As a conclusion, myoepithelial cells play an active role in the tumor formation in the ear canal, although all of the tumors are malignant epithelial tumors.

Keywords: Cat, Dog, Ear Canal Tumors, Immunohistochemical, Myoepithelial Cell.

CANINE EOSINOPHILIC GASTROENTERITIS: RETROSPECTIVE ANALYSIS OF
DIAGNOSIS IN 14 DOGS AND COMPARISON OF TWO DIFFERENT DIAGNOSTIC
METHODS IN ENDOSCOPIC BIOPSIES

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Abstract:

Clinical manifestations and laboratory findings of eosinophilic gastroenteritis (EGE) in dogs are nonspecific. Identification of eosinophils in the GI tract of dogs with EGE, by histological evaluation is challenging. The currently used hematoxylin and eosin (H&E) staining method detects intact eosinophils but does not detect degranulated eosinophils, thus potentially underrepresenting the number of infiltrating eosinophils. The aim of this study was to evaluate the clinic and laboratory findings of EGE and develop a more reliable method for quantifying eosinophils to diagnose canine EGE more accurately. Medical records and biopsies from 14 dogs with EGE were retrospectively reviewed. Sections were immunolabeled with monoclonal antibodies (mAbs) against the eosinophil granule protein eosinophil peroxidase (Epx) and stained by H&E. The number of eosinophils were manually quantified. The most gastrointestinal symptoms were vomiting (71.4%), diarrhea (64.2 %) and weight lost (57.1%). The most common laboratory findings were hypoalbuminemia (57.1%) and hypereosinophilia (42.8%). The number of eosinophils detected in Epx mAb-labeled stomach and duodenal sections was significantly higher compared with that in H&E-stained sections ($p \leq 0.05$). Epx mAb allowed the unique assessment of eosinophil degranulation. The result of this study suggests that clinical and laboratory findings may not be enough for the diagnosis of eosinophilic gastroenteritis in dogs. The diagnosis of canine EGE requires histopathological evaluation of GI biopsy. Immunohistochemical detection of Epx provides a more precise method to detect GI tract eosinophils compared to H&E staining and could be used as an alternative and reliable diagnostic tool for EGE.

Keywords: Dog, Eosinophil Peroxidase, Eosinophilic Gastroenteritis, Hypoalbuminemia, Eosinophilia

USE OF FASCIA LATA AUTOGRAFT FOR REPAIRING OF URINARY BLADDER DEFECT
IN RABBITS

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Abstract:

The aim of this study was to reveal the compatibility of fascia latae autograft for urinary bladder tissue defect, to evaluate the biomechanical, radiographical, macroscopical, biochemical, and histopathological test findings, and early and late complications of the surgical processes in rabbits. Thirty two adult healthy New Zealand rabbits were randomly allocated into 4 different groups of 8 animals. A 2x2 centimeter urinary bladder defect was repaired by the same size of fascia latae. Rabbits in Group I, II and III were euthanised postoperatively at the end of 4th, 8th and 12th weeks respectively. Urinary bladders of the rabbits in Control Group were exposed for biomechanical tests and the values compared with those of the Group I, II and III. Histopathological examination of the grafted area was performed. In the findings, the grafted area was harmony with that of the tissue of urinary bladder, there was no postoperative early or late complications. No significant difference was available between the urinary bladder and grafted area. No differences in biomechanical tests were recorded between grafted and ungrafted urinary bladders. Furthermore, fascia latae turned into a normal urinary bladder tissue histopathologically. In conclusion, fascia latae autograft can be successfully used in the urinary bladder defects. The Fascia lata graft can be used successfully the pathological conditions that occur in the urinary bladder requiring a new tissue.

Keywords: Bladder, Defect, Fascia Lata, Repairing, Autograft

APPLICATION OF INDIRECT FLUORESCENT ANTIBODY (IFA) TEST USING FROZEN
SECTION OF EMBRYONATED EGGS OF *TOXOCARA CATI* FOR DIAGNOSIS OF
EXPERIMENTAL TOXOCARIASIS IN MICE MODEL

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Abstract:

Toxocariasis is a zoonotic parasitic disease caused by *Toxocara canis* and *T. cati*. The disease is important in both medical and veterinary aspects. Different tests including ELISA and IFA have been used for serodiagnosis of the disease. However, using cryocut sections of embryonated eggs of *Toxocara* by IFA has not been used, so far. The present study was conducted using *T. cati* frozen sections of the embryonated eggs in an experimental model using an IFA test. In this regard, *T. cati* adult female worms were cultured in formalin 2.5% for one month followed by cryocut section preparations in 5 micrometers with four different patterns: 1. Application of rabbit muscles as a template for holding embryonated eggs for frozen sections. 2. Using adult female worms with embryonated eggs in their uterus while supported by rabbit muscle as template 3. Using separated uterus, full of embryonated eggs in freeze rabbit muscle as a template; and finally 4. Embryonated eggs using chicken's muscles as a template for preparation of frozen sections. Control positive sera were prepared from two groups of mice by feeding them the embryonated eggs of *T. cati* and bleeding them on 46 and 68 days post-infection (dpi). The IFA test was used with 1:20 diluted sera followed by observing the slides with Fluorescent microscopy. Green shine was observed at the surface of larva exposed to positive sera which was distinguishable from negative and other disease controls. There was a non-specific brightness on adult female worm sub-cuticle. The best specificity was observed using of cryo-cut *T. cati* uterus full of embryonated eggs. In conclusion, using this modified IFA test with no need for removing and culturing the larva from eggs is a promising method for serodiagnosis of toxocariasis and could be used as an alternative route for diagnosis of toxocariasis.

Keywords: *Toxocara Canis*, *Toxocara Cati*, Diagnosis, Mouse Model

THE ANTIDIABETIC EFFECT OF SAHARAN ALGERIAN HONEY "IN VIVO STUDY IN THE
RAT"

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Abstract:

Toxocariasis Traditional medicine offers alternative remedies such as medicinal plants and natural products whose honey is most important. They possess hypoglycaemic properties to control or treat diabetes and its complications. Moreover, they are rich in antioxidants which ensure the prevention or the delay of different pathologies. The objective of this study is to evaluate the antidiabetic activity of two natural products, honey and pollen in the diabetes model. After 21 days of prolative treatment with euphorbia honey (10%), multifloral pollen extract (1%), and mixed-honey and pollen in male oral rats (VO). Streptozotocin at 60 mg / kg body weight was induced intraperitoneally (PI) and at a single dose. The toxicity test at the selected doses showed no effect on all the test batches. The results obtained from the glycemia, before the induction of diabetes by the STP, show a stability in this analysis in all the rats to be tested. On the other hand, after diabetes induction, a highly significant increase in blood glucose is remarkable in diabetic rats (D) compared to control (T) rats. However, treatment of diabetic rats with honey (DM) and mixed honey and pollen (DMP) revealed a remarkable hypoglycaemic effect; Significant decrease compared to diabetic rats (D). The histological study showed lesions in the pancreatic tissue of diabetic rats (D) compared to the control rats. On the other hand, the histological aspect of the pancreas of the diabetic rats treated with honey (DM) and mixed (DMP) closely resembles that of the control rats. The histological study of hepatic parenchyma in diabetic rats (D) and in rats treated with pollen (DP) revealed moderate hepatitis translated into more marked lymphocytic infiltration in diabetics (D). The results of the histology reflect the results of the biochemical parameters studied, namely cholesterol, transaminases and triglycerides, which asserts the antidiabetic activity of the honey studied. This study shows that Euphorb honey has a better antidiabetic effect under the conditions of the present experiment.

Keywords: Diabetes, Euphorbia Honey, Pollen, Glucose, Rats

THE EFFECTS OF HORMONAL TREATMENT ON CELL VIABILITY IN F98 CELL LINE

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Abstract:

Glioblastoma is the most common and fatal brain tumor in adults. The incidence rate of glioblastoma is higher in man compared with woman, with the lowest rates in woman during reproductive period, suggesting that ovarian steroid hormones might exert a protective effect. Steroid hormones play a key role in brain development and differentiation. Furthermore, ovarian steroid hormones are neuroprotective in a variety of neurologic disorders. These neuroprotective effects include improved myelination, decreased edema, inhibition of apoptosis and decreased inflammation. Steroid hormones may also play a role in the development of brain tumors, because steroid hormone receptors are members of a superfamily of ligand-activated transcription factors that are potentially oncogenic. In this study the effect of 17 Beta estradiol, Diethylstilbestrol (DES) and progesteron on glioblastoma cells were investigated.

F98 glioblastoma cells were treated with three different steroid hormones; 17 Beta estradiol (0.01-10uM), Diethylstilbestrol (2.5-100 uM) and progesteron (10-100uM) and cell viability were examined. Cell viability was determined by MTT assay. F98 glioblastoma cells were treated with for 24h, 48h and 72h incubation.

Progesteron inhibit glioblastoma cell growth in a dose and time dependet manner. Antiproliferative effect of 17 Beta estradiol were observed at low doses. Biphasic distribution was observed in decreasing cell viability in DES applications.

These results suggest that ovarian steroid hormones can inhibit the proliferation of glioblastoma cells. However, further study is necessary to identify the pathways involved.

Keywords: Diethylstilbestrol, Estrogen, Glioblastoma, Progesteron

MOLECULAR CHARACTERIZATION OF LISTERIA MONOCYTOGENES FROM BEEF
SAMPLES AND CATTLE SLAUGHTERHOUSES LOCATED IN THE FEDERAL DISTRICT,
BRAZIL

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Abstract:

Despite the fact that poultry production has been steadily increasing, there is a growing public concern over transmission of food borne pathogens and antibiotic resistance genes from livestock into the food supply. *Salmonella enterica* has more than 2,500 different serovars that have been described as most important causes of human food borne pathogens, and *S. enterica* serovar Enteritidis (SE) is the most prevalent of these serovars. In this study, we examined the anti-*Salmonella* effects of a commercial prebiotic included in the finisher diet fed to broilers. *Salmonella*-free 1-day-old broiler chicks were obtained from a local commercial hatchery and divided into two separated groups: 1) infected with SE + with prebiotic and 2) infected with SE + without prebiotic. Birds in both groups were inoculated with *Salmonella Enteritidis* (3×10^8 CFU/Bird) on day 28, orally. Fecal samples were obtained at 7 and 14 days post-infection (dpi) and subjected to selective culture for enumerating of the *Salmonella*. Also, body weights (BW) were obtained weekly. Results showed that *Salmonella* fecal shedding were significantly decreased in birds fed prebiotic. Birds fed prebiotic exhibited heavier body weight (BW) and greater BW gains than group that did not receive it. It is concluded that prebiotic inhibits the shedding of *Salmonella* in broilers.

Keywords: Broiler Chickens, *Salmonella*, Prebiotic

THE EFFICIENCY OF PREGNANCY-ASSOCIATED GLYCOPROTEINS IN PREGNANCY DIAGNOSIS

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Abstract:

Accurate and confidential identify of pregnancy in cattle is an essential component of reproductive management nowadays. Pregnancy-associated glycoproteins (PAGs) provides safe accurate detection of pregnancy as early as 28 days post-breeding, which can give an important tool for the early detection of pregnant cattle. The objective of this study was to demonstrate the efficacy of glycoproteins used in early pregnancy diagnosis. 135 head cattles were used in this study. The cattles were breed at THS livestock (Gölbaşı, Ankara, Turkey). The blood sample was taken from vena coccygea and the serum was withdrawn. PAGs (IDEXX Europe, Hoofddorp, The Netherlands) were performed to determine the pregnancy. After positive and negative controls were prepared 100 µL serum samples were put into appropriate wells and then 3 drops of detector solution (reagent 1) was placed into each well, in accordance with the test procedure these operations were repeated for the conjugate solution (reagent 2) and TMB Substrate (reagent 3) respectively. Finally, the process was stopped by stop solution (dispense reagent 4). The pregnancy status of each animal was determined by comparing the color development of the sample well to the negative and positive control. When blue color was visible in the sample well and was greater than that of the negative control well, then PAGs were present and the animal was considered pregnant. All tests made were checked with ultrasonography at 35 and 62 days post-breeding. In the present study, ultrasonography at 35 and 62 days was revealed 78 (58%) cattle pregnant and 57 (42%) not pregnant. In conclusion, results demonstrated that PAGs can be used in a practical and effective way to determine the pregnancy in cattle.

Keywords: Cattle, Pags, Pregnancy

LEVELS OF CIRCULATING D-DIMER AS A PROCOAGULATION BIOMARKER IN CANINE GRANULOCYtic ANAPLASMOSIS

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Abstract:

Anaplasma phagocytophilum, the responsible agent of granulocytic anaplasmosis in dogs, is a gram-negative, obligate intracellular bacteria parasitizing neutrophils in dogs. The majority of dogs with Canine Granulocytic Anaplasmosis (CGA) have non-specific signs of illness. The most consistent clinical laboratory abnormality is thrombocytopenia followed by leucocytosis, lymphopenia, anemia, increased ALKP-activity and hypoalbuminemia. There is a scarcity of data regarding primary/secondary homeostasis in CGA. D-dimer, as a non-invasive testing, is a breakdown/degradation product of cross-linked fibrin, increasing with clot formation and fibrinolysis. D-dimer values occur in various disorders in which the coagulation of a system is excessively activated. In the present article, the purpose was to measure D-dimer concentrations in dogs with CGA. A D-dimer analysis was performed in two groups of dogs; (i) 11 dogs with CGA, then were compared to those of healthy dogs (n=7) as (ii) control group. The D-dimer range in clinically healthy dogs was <0.1 mg/L. In dogs with CGA to those of enrolled involved in infected, the D-dimer concentrations were elevated (2.9 ± 1.7 mg/L) than those of healthy dogs ($P < 0.01$), respectively. D-dimer levels increased with clinical evidence of procoagulant activity. Although there may be an association between circulating D-dimer values and CGA, further studies are needed to determine the extent to which this is causal.

Keywords: Canine, Granulocytic, Anaplasmosis, D-Dimer

A PRELIMINARY ASSESSMENT: A NEW YING YANG ON OXIDATIVE BALANCE: THE
RELATION OF SERUM THIOL LEVELS AND THIOL/DISULPHIDE HOMEOSTASIS WITH
CANINE MONOCYTTIC EHRlichIOSIS

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Abstract:

Canine monocytic ehrlichiosis (CME), denoting a significant vector borne disease with a worldwide diversity, causes a multisystemic disorder. Oxidative balance is described as the equilibrium among free radical eradication and production. Thiol is a novel and substantial antioxidant used to eliminate reactive oxygen via non-enzymatic and enzymatic pathways. Thiols have an antioxidant role in oxidation reactions by composing disulphide bonds. Dynamic thiol/disulphide homeostasis is crucial for detoxification, apoptosis, and the processes of controlling enzymatic reactions and signaling pathways.

To our knowledge, dynamic thiol/disulphide homeostasis has not been studied previously in dogs with CME. Therefore, present study was proposed to determine the alterations of thiol/disulphide homeostasis in dogs with clinical canine monocytic ehrlichiosis.

Samples were obtained from twenty dogs admitted to the Adnan Menderes University Faculty of Veterinary Hospital, Aydin, Turkey. Dogs were allocated into two groups including clinical ehrlichiosis (n=10) and healthy control dogs (n=10). Total thiol (-S-S- + -SH) composed of native and reduced thiol. Relatively new automatic and spectrophotometric device as previously described by Erel and Neselioglu.

The thiol-disulphide homeostasis possess significance among regulation of enzymatic activity, detoxification, signal transduction, apoptosis and finally/foremostly antioxidant protection. In this study, the disulphide levels in dogs with CME were significantly ($p < 0,05$) higher when compared with control.

Keywords: Canine Monocytic Ehrlichiosis, Thiol/Disulphide Homeostasis, Dog

ASSOCIATION BETWEEN PERILIPIN GENE POLYMORPHISMS AND BODY WEIGHT
TRAITS IN JINMAO HUA CHICKENS

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Abstract:

Clinical manifestations and laboratory findings of eosinophilic gastroenteritis (EGE) in dogs are nonspecific. Identification of eosinophils in the GI tract of dogs with EGE, by histological evaluation is challenging. The currently used hematoxylin and eosin (H&E) staining method detects intact eosinophils but does not detect degranulated eosinophils, thus potentially underrepresenting the number of infiltrating eosinophils. The aim of this study was to evaluate the clinic and laboratory findings of EGE and develop a more reliable method for quantifying eosinophils to diagnose canine EGE more accurately. Medical records and biopsies from 14 dogs with EGE were retrospectively reviewed. Sections were immunolabeled with monoclonal antibodies (mAbs) against the eosinophil granule protein eosinophil peroxidase (Epx) and stained by H&E. The number of eosinophils were manually quantified. The most gastrointestinal symptoms were vomiting (71.4%), diarrhea (64.2 %) and weight lost (57.1%). The most common laboratory findings were hypoalbuminemia (57.1%) and hypereosinophilia (42.8%). The number of eosinophils detected in Epx mAb-labeled stomach and duodenal sections was significantly higher compared with that in H&E-stained sections ($p \leq 0.05$). Epx mAb allowed the unique assessment of eosinophil degranulation. The result of this study suggests that clinical and laboratory findings may not be enough for the diagnosis of eosinophilic gastroenteritis in dogs. The diagnosis of canine EGE requires histopathological evaluation of GI biopsy. Immunohistochemical detection of Epx provides a more precise method to detect GI tract eosinophils compared to H&E staining and could be used as an alternative and reliable diagnostic tool for EGE.

Keywords: Dog, Eosinophil Peroxidase, Eosinophilic Gastroenteritis, Hypoalbuminemia. Eosinophilia

THE MOLECULAR PREVALENCE OF *GIARDIA DUODENALIS* IN KIDS IN THE AEGEAN
REGION

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Abstract:

Giardia duodenalis is one of the most prevalent intestinal parasites of domestic animals, humans and wildlife. Giardiasis, which is caused by *G. duodenalis*, is an significant zoonotic disease for both community health and veterinary health. *G. duodenalis* transmission happens through cyst ingestion, particularly from contaminated water and food. The aim of the present study was to investigate the molecular prevalence of *G. duodenalis* in kids in Eagean Region of Turkey (İzmir, Aydın, Manisa, Mugla, Usak). In this study, 250 fecal samples from kids were collected from İzmir, Aydın, Manisa, Mugla, Usak province, Turkey. Samples were kept on ice until laboratory examination. The faecal samples were examined in the laboratory using a light microscope. DNA extraction was performed using the QIAamp Stool Mini Kit (Qiagen), according to the kit protocol. Afterwards Nested PCR amplification of β -giardin gene was made. All obtained products were electrophoresed on 1,5 % agarose gels and stained with Red Safe. In conclusion the overall prevalence of giardiasis in kids was determined as 32.8 % (82) in Eagean Region of Turkey.

Keywords: *Giardia duodenalis*, Kids, Aegean Region

ANTIGEN ANTIBODY INTERACTION DURING DIFFERENT STAGES OF CANINE
MONOCYTIC EHRLICHIOSIS: EVIDENCE TO PROOF BY MOLECULAR TYPING,
ANTIBODY DETECTION AND CLINICAL SIGNS

ORAL COMMUNICATIONS

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Abstract:

Canine monocytic ehrlichiosis (CME) caused by *Ehrlichia canis* is a tick-borne disease of dogs. *E. canis* is transmitted by the brown dog tick *Rhipicephalus sanguineus*. The etiological agent is the gram-negative obligate intracellular rickettsia *E. canis*. CME is divided into chronic, subclinical, acute phases. The present study, originally, would be the first research study thus evaluating molecular typing along with antigen/antibody interaction. Diagnosis of CME was established through dogs presenting one or some of the clinical signs in association with the disease condition, subjected to rapid ELISA test kits and Polymerase Chain reaction (PCR). Dogs diagnosed with CME, based on serological (ELISA) and molecular (PCR). A total of 100 dogs were classified as acute (n:21), active (n:16) infected or disease expoured (n:13) and to those of healthy control group. Blood samples brought to the laboratory were DNA extracted using the Qiagen DNeasy Blood & Tissue Kit. Afterwards Nested PCR was made. Amplified PCR products were separated on agarose gel electrophoresis. After this, images were obtained on the gel imaging device. In conclusion antigen-antibody interaction as a preliminary study here in reported would have helped clinicians.

Keywords: Canine Monocytic Ehrlichiosis, Molecular Typing, Antibody

POSTER PRESENTATIONS

Draft

PHOTOPERIOD, NEST AVAILABILITY AND ANTI-ESTROGENS AFFECT REPRODUCTION IN PARAKEETS

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Abstract:

Breeding in most animals occurs with favorable temperatures and food availability. In addition, nests can initiate reproductive activities in many parrot species. We investigated the role of photoperiod and nest availability in reproductive activities of parakeets. Experiment one: 2 treatment groups (n=25, n=22) were maintained in separate light and temperature-controlled rooms. Nests were removed, and day length was decreased in both rooms to a non-photostimulatory schedule (NPS) of 6 hours light:18 hours dark (6L:18D). After six weeks, nests were reintroduced. In one room birds were photostimulated by 14L:10D light cycle (PS), which significantly increased egg production, fertility hatchability, and plasma levels of testosterone in males and estrogen in females. Experiment two: 2 groups (n=25, n=27) had nests removed and were held on PS conditions for 3 weeks; then one group was exposed to NPS light regime for 6 weeks. Nests were reintroduced to all cages and NPS group was returned to PS light regime. In contrast to most Aves, early exposure to NPS decreased egg production and fertility during the following period of nest and light stimulation. Experiment three: The effect of non-steroidal antiestrogen (tamoxifen) on reproduction was examined in birds that did not respond to both light and nest stimuli. In 8 of 14 pairs, egg production with relatively high fertility was induced by administration of tamoxifen (0.5mg/kgBW), the others did not respond. We concluded that nest availability and photoperiod play roles in regulating gonadal activity in parakeets and can be used to control their reproduction. Whereas in most Aves, a period of short day length improves reproduction following PS, in parakeets it reduced reproductive performance. Thus, a period of nest removal but not NPS is an appropriate tool to control breeding in parakeets. Antiestrogen and gonadotropins provide pharmacological means to increase reproduction in parakeets.

Keywords: Anti-Estrogens, Photoperiod

EFFECT OF PREBIOTIC ON BROILERS CHALLENGED WITH *SALMONELLA* *ENTERITIDIS*

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Abstract:

Despite the fact that poultry production has been steadily increasing, there is a growing public concern over transmission of food borne pathogens and antibiotic resistance genes from livestock into the food supply. *Salmonella enterica* has more than 2,500 different serovars that have been described as most important causes of human food borne pathogens, and *S. enterica* serovar Enteritidis (SE) is the most prevalent of these serovars. In this study, we examined the anti-Salmonella effects of a commercial prebiotic included in the finisher diet fed to broilers. Salmonella-free 1-day-old broiler chicks were obtained from a local commercial hatchery and divided into two separated groups: 1) infected with SE + with prebiotic and 2) infected with SE + without prebiotic. Birds in both groups were inoculated with Salmonella Enteritidis (3×10^8 CFU/Bird) on day 28, orally. Fecal samples were obtained at 7 and 14 days post-infection (dpi) and subjected to selective culture for enumerating of the Salmonella. Also, body weights (BW) were obtained weekly. Results showed that Salmonella fecal shedding were significantly decreased in birds fed prebiotic. Birds fed prebiotic exhibited heavier body weight (BW) and greater BW gains than group that did not receive it. It is conducted that prebiotic inhibits the shedding of Salmonella in broilers.

Keywords: Broiler Chickens, Salmonella, Prebiotic

S-100 PROTEIN LOCALIZATION ANALYSIS IN JAPANESE QUAIL (*COTURNIX
COTURNIX JAPONICA*) TESTIS

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Abstract:

The main goal of present study was to examine the S-100 protein localization in Japanese quail (*Coturnix coturnix japonica*) testicles. Eight male Japanese quails weighing 196.16 ± 4.72 g with same feeding and breeding conditions were selected. In order to determine S-100 protein localization, the testicles were harvested and studied immunohistochemically following tissue preparation. The results of current study revealed that S-100 protein was not observed in the seminiferous tubules, germ, Leydig and Sertoli cells and interstitial tissue as well as straight tubules and rete testis of Japanese quail testicular tissue. Our findings suggest that lack of S-100 immunostaining in the testis of Japanese quail may be associated with species-specific differences reflecting different morphological and ultra-structural characteristics of Japanese quail testicular tissue.

Keywords: Immunohistochemistry, Quail, S-100 protein, Testis

Acknowledgements: *This study is supported by Scientific Activities Support Program of Faculty of Veterinary Medicine, Urmia University, Urmia, Iran.*

A SURVEY ON GASTROINTESTINAL HELMINTHS OF *CYNOGLOSSUS BILINEATUS* IN THE SOUTH OF IRAN

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Abstract:

Cynoglossus bilineatus (Lacépède 1802) or four line tongue sole is a small flatfish with an elongate-oval body tapering to a point, that belongs to *Cynoglossidae* family. Up to now, three species of the tongue sole fish have been reported from the Persian Gulf and Oman Sea: *Cynoglossus arel*; *Cynoglossus bilineatus*; *Cynoglossus puncticeps*. So far, no parasitic and morphometric studies have been conducted on the *Cynoglossus bilineatus* in the region. In the present study helminthic infection of 50 digestive tracts of *Cynoglossus bilineatus*, were examined in Bandar Abbas (South of Iran). After procuring the fishes, they were transferred to the laboratory and different parts of their bodies were measured for morphometric study. Then whole digestive tract of the fishes was removed, opened with a small scissor into a dish and the content digestive tract and body cavity searched for the presence of helminth. The parasites were identified with the aid of reliable sources. The helminthic parasites that were recovered from the digestive tract of the fishes were identified as follows: The trematodes *Lepocreadioides zebrani* and acanthocephalan *Hemiradinorhynchus leuciscus* were recovered from *Cynoglossus bilineatus* with 10% and 2% infection rate respectively. In addition, cestodes *Scolex pleuronectis* with 2% and *Trypanorhynca* larvae with 2% as well as nematode *Anisakis* sp with 2% infection rate were isolated from *Cynoglossus bilineatus*.

Keywords: *Cynoglossus bilineatus*, helminth parasites, morphometric character, Iran

THE INVESTIGATION OF IL-6, TNF-A, DHEA AND CORTISOL LEVELS IN CANINE VISCERAL LEISHMANIASIS

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Abstract:

Dogs are considered as the main reservoirs of visceral leishmaniasis and it was known that humans could be infected with the parasite accidentally. It was commonly stated that the most promising approach in the battle against the canL (canine leishmaniasis) was immunoprophylaxis because of the low response to treatment among dogs. Therefore, the studies in the field of immunology have gained much importance, recently. Totally 40 serum specimens from dogs with suspected Leishmania infection, ages varied between 2 and four, 20 were IFA seropositive and 20 were IFA seronegative, were included in the present study at Faculty of Medicine, Department of Parasitology. The demographic and clinical properties of dogs were analyzed with a survey. In the study group, antibodies specific to parasite were determined with an immunochromatographic test (rapid test). Additionally, the serum levels of IL-6, TNF- α , DHEA and cortisol were determined with commercially available kits. The most common symptoms among the dogs were: weakness (75%), alopecia (70%) and weight loss (70%), respectively. It was found that the frequency of weakness and fever were statistically different between groups ($p=0.015$, $p=0.021$, respectively). The mean serum TNF- α level for seropositive dogs was 17,32 pg/ml and 16,59 pg/ml for seronegative dogs ($p=0.722$), the mean serum IL-6 level for seropositive dogs was 33,72 pg/ml and 13,43 pg/ml for seronegative dogs ($p=0.091$). Additionally, the mean serum cortisol level of seropositive and seronegative dogs were 2,21 $\mu\text{g/dL}$ and 1,94 $\mu\text{g/dL}$, respectively ($p=0.546$), it was found that while the mean serum DHEA-S level of seropositive dogs were 3,95 $\mu\text{g/dL}$ the mean value was 3,23 $\mu\text{g/dL}$ for seronegative dogs ($p=0.088$). It was thought that the improvement of knowledge about the immune mechanisms and affecting factors would be helpful to forthcoming researches on immunotherapy of canL and the quality of available vaccines against Leishmania.

Keywords: canine, cortisol, DHEA, IL-6, TNF- α , visceral Leishmaniasis

Acknowledgements: This study was supported as project No. VTF-10014

THE IMPORTANCE OF OVARIAN REMNANT SYNDROME IN ANIMALS

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Abstract:

In the present study, we aimed to summarize the importance of Ovarian Remnant Syndrome (ORS) which is a serious problem in animals. Ovarian remnant syndrome is the presence of functional ovarian tissue in a previously ovariohysterectomized (OHE) or ovariectomized animals. The causes of ORS are the presence of ectopic ovary, errors in the surgical technique, and revascularization of ovarian tissue that was inadvertently dropped into the abdominal cavity during OHE. Remnant ovarian tissue can produce hormones and even ovulate; causes the signs of proestrus and estrus, vulvar swelling, and behavioral changes. The diagnosis of ORS may be established by anamnesis, clinical findings, vaginal cytology findings, hormone stimulation test, Anti-Müllerian hormone level, ultrasonography findings, and exploratory laparotomy. The treatment choices for ORS are medical or surgical management. However, surgical removal of remnant tissue is generally recommending. The ORS may induce stump pyometra and this situation may be fatal. The presence of malignancy in the ovarian remnant tissue has been described in women. Therefore, prevention is the best way to avoid the occurrence of ORS. OHE should perform with a sufficient abdominal wall incision to visualize the surgical area, proper ligation of the reproductive organs, and both ovaries should be removed without leaving any ovarian tissue.

Keywords: Ovarian remnant syndrome, animal

INVESTIGATION ON PRESENCE OF SOME FOODBORNE PATHOGENS IN FISH MARKETED AS FRESH IN KONYA

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Abstract:

This research was performed to investigate the presence of some foodborne pathogens in fish marketed as fresh at the fish market, market and neighborhood bazaar in Konya. The study was carried out in 100 samples taken from four different fish species named sea bream, anchovy, horse mackerel and mullet fish. The presence of Salmonella spp., Listeria monocytogenes, Escherichia coli O157 and Vibrio parahaemolyticus and count of coagulase-positive staphylococci analyzes were performed by getting the reference of ISO methods in this study. In our research, Salmonella spp. and E. coli O157 were not detected in all fish samples but L. monocytogenes was detected in one sample obtained from fish market (%1), V. parahaemolyticus was detected in 12 of them (%12), five fishes obtained from fish market, four from neighborhood bazaar and three from the market and coagulase-positive staphylococci were detected in five of them (%5), two fishes obtained from fish market and three from neighborhood bazaar. When it was evaluated fish species and the sales areas, it was observed that there was no difference isolation ratios of pathogens ($p>0,05$). At the same time, there was no difference between the periods of study and isolation ratios of Salmonella spp., L. monocytogenes, E. coli O157 and coagulase-positive staphylococci ($p>0,05$), but it was determined that V. parahaemolyticus was affected by study period ($p<0,05$). The results of this research show that sea bream, anchovy, horse mackerel and mullet fish species marketed as fresh in Konya are contaminated at varying rates in terms of L. monocytogenes, V. parahaemolyticus, and coagulase-positive staphylococci. The level of pathogenic microorganisms detected in the research, reveals the importance of studies on the contamination of fresh fish with pathogenic microorganisms.

Keywords: Contamination; Fish; Food-Borne Pathogen

Acknowledgements: This study was financially supported by Selcuk University (PhD Thesis Project Number: BAP16202016).

HIGH FAT, SUCROSE, AND FRUCTOSE IN DIETS CHANGE SOME BIOCHEMICAL PARAMETERS AND EFFECT LIVER IN RATS

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Abstract:

Wistar albino rats were used in this study. Rats were divided four groups and fed for 3 months (Con: Control group, Hfat: High fat group, Hsuc: High sucrose group and Hfru: High fructose group). All groups have 8 animals in the study. Approximately 3 months old male rats fed with high calorie diets from different sources (fat, sucrose and fructose). Basic diet (2600 kcal/kg) was given to Con, Hsuc and Hfru groups. In addition to the basic diet, Hsuc and Hfru groups were consumed sucrose and fructose solution that have 1 kcal/mL metabolic energy in both groups, ad libitum. Hfat diet was made with basic diet and added sunflower oil (3600 kcal/kg). After feeding period, all rats were euthanised. Glucose, insulin, total cholesterol, HDL, LDL, triglyceride, ALT, AST and GGT parameters were measured from plasma. In addition, some parameters and changes in liver (inflammation, fatty degeneration, passive hyperemia, degenerative and necrotic changes) were histopathologically assessed. In Hfru groups, glucose, triglyceride and AST/ALT rates in plasma were higher than all groups ($P < 0.05$). Hsuc and Hfru groups had lower plasma insulin levels than other groups. There was no significant differences between groups for HDL, LDL and GGT parameters. Hfru groups had also higher levels for total cholesterol but it was not statistically important. Histopathological results have shown that in liver tissue, erythrocytes stagnated in central vens and sinusoidal regions in Hfat, Hsuc and Hfru groups. It is understood that consumption of sucrose and fructose for 90 days cause destructive effects as well as inflammation in hepatocytes. Fatty degeneration was more in the Hfru group than other groups, and the most severe form of degeneration, balloon degeneration, was detected in Hfru groups. In conclusion, plasma glucose, triglyceride, AST/ALT ratios and hepatic histopathology has shown that fructose consumption is more detrimental compared to sucrose and sunflower oil.

Keywords: Liver, Lipogenesis, Liver Histopathology, Fructose, Rat

Acknowledgements: This study was supported by Scientific Research Council of Hatay Mustafa Kemal University with 16380 project number

VENTRICULAR WALL MOTION DISORDER IN A CALF WITH SEPTIC SHOCK

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Abstract:

Myocardial dysfunction frequently accompanies the severe sepsis. Clinical significance of myocardial function in animals with heart disease is also conventional. Pathogenesis of myocardial depression has genetic, molecular, metabolic, idiopathic and structural alterations. Myocardial depression-ventricular wall motion disorders still remain a challenge in veterinary medicine. The case presented here reflects a case of ventricular wall motion disorder in a 1-day-old calf with septic shock. A 1-day-old Holstein calf was referred to Department of Internal Medicine, Animal Hospital of Veterinary Faculty, Ankara University with a history of uncoordinated walking, respiratory distress, tremors, and anorexia. Cardiac auscultation revealed bilaterally audible systolic murmur. Complete blood count also revealed leukocytosis and platelet alterations. Diagnosis of septic shock was based on the presence of severe sepsis in blood work (leukocytosis), severe dehydration (>7%), fever (40 C0) and hypotension despite the aggressive fluid therapy with 0.9 % saline and ringer solution. Echocardiography confirmed hypokinetic left ventricular wall (unilateral), paradoxical septal motion, decreased stroke volume and ejection fraction in right parasternal long axis and transversal view. Although supportive care including oxygenation, fluid therapy, vitamins, diuretics (Frusemide), NSAID drugs (ketoprofen) and antibiotics (Gentamicin), the calf, unfortunately, died in the same day following the treatment. The owner declined postmortem examination and necropsy.

Keywords: Calf, Depression, Myocard, Sepsis, Ventricul, Wall Motion Disorder

APPROACH TO CENSORED OR TRUNCATED DATA: TOBIT MODEL

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Abstract:

Regression analysis in the field of application is one of the most widely used statistical models and different regression models have been developed depending on the number of dependent-independent variables and the obtained data included in the model. The use of linear models in datasets where the dependent variable does not go below a certain value and / or does not rise above it, or which can not be measured by the dependent variable, increases the bias due to clusters seen at the limits. Transformations based on the Limit Of Detection principle, which are used to overcome these clusters, do not fully comply with censored / restricted data even though they benefit. The dependent variable is better clarified by the Tobit Regression Model which approaches the variable more objectively in this censored or restricted data set than the linear regression model generated by the least squares method which is used commonly. Thus it is possible to obtain more reliable results in statistical analysis. The purpose of this study is to introduce how to approach censored / truncated data by explaining how the Tobit Regression Model should be used in scientific research and to emphasize the importance of animal science.

Keywords: Tobit Model, Censored Data, Truncated Data, Restricted Data

FREQUENCY OF ENDOSCOPIC FINDING OF GASTRIC ULCER IN APPARENTLY RURAL HORSE AND ASSOCIATION WITH AMOUNT OF BLOOD GASTRIN

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Abstract:

Background: Gastric ulcer is one of the most common diseases in racehorses. Colic, weight loss and poor performance are some of the clinical signs. Objectives: The aim of this study is assessment of gastric ulcer in the rural horse and measurement of blood gastrin and finding their correlation. Study Design and Methods: in a cross-sectional study twenty rural horses randomly selected for endoscopic finding for gastric ulcer. Gender, Age, keeping situation, type of feed, history of colic, hair coat condition, and deworming plan were recorded in a sheet. The horses were kept fasted for 12 hours before endoscopic examination by VET3M OLYMPOUS (Japan). Sedation was done by injection of Detomidine (Detomo Vet[®] ceva-Spain) 0.4ml/100kg and blood was taken in anti-coagulated tube (Greiner Bio One- Austria) and 5 ml with EDTA tubes (AVAPEZESHK-Iran). Blood samples were centrifuged, and serum of blood was stored at -20c until analysis. Statistical analysis of the data performed of 95% of confidence interval and $P < 0.05$ was considered as a significant level. Results: Out of 20 horses, 13(65%) mare and 7(35%) male studied. Endoscopic observation showed 9 (45%) of the horses suffered from gastric ulcer and 11(55%) of the horses did not have ulcer. All of ulcers were in non-glandular part and near the margoplicatus. The level of serum gastrin measured with IMMULITE 2000 XPI (Siemens-Germany) and special kit of gastrin by electro chemiluminescent immunoassay. Maximum, minimum and Mean \pm SD of gastrin was 21.8, 10, 13.82.65 pg/ml respectively. There was no relationship between gastrin with other parameters in our study ($P > 0.05$). However, with increasing of age the amount of blood gastrin significantly increase ($p = 0.01$, $r = 0.551$). Main Limitations: Other study with high sample size proposed. Conclusions: There was high frequency of gastric ulcer in non-glandular portion of stomach in rural horse.

Keywords: Gastric Ulcer, Horse, Gastrin, Electro Chemiluminescent Immunoassay

RNA QUALITY CONTROL OF POSTMORTEM HEART TISSUES OF RATS: STORED AT +4 °C IN THE 0-48 HOURS PERIODS

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Abstract:

The aim of the study is examining RNA quality of postmortem heart tissues stored at +4 °C during the 0-48 hours periods after death. Animals in the study were 6-8 weeks old male Wistar albino rats and body weights averages of animals were similar (183.01±3.77 g). Rats were housed with routine maintenance and feeding procedures. Rats were euthanized with receiving blood from the heart under Ketamine and Xylazine anesthesia. After euthanize, heart tissues were obtained and divided into 5 parts, then grouped (0, 6, 12, 24, and 48 hours) for RNA extraction. First group (0th hour) samples were rapidly frozen in liquid nitrogen (snap frozen) and the other groups' samples were kept at + 4 °C until the freezing time (6th, 12th, 24th and 48th hours). After freezing, tissues were stored at -80 °C until RNA extraction. RNA extraction was made according to the Trizol method. After DNase digestion procedure, cDNA synthesis was performed. The quality loss of RNA because of the time and +4 °C temperature were checked with the nucleic acid spectrophotometer (SMA-1000) and 1% agarose gel electrophoresis (28S and 18S bands integrity and ratios). The purity (A260/280> 1.70) and concentration (between 135.13 µg/µL and 876.79 µg/µL) of samples were checked. Ct values averages of PPIA, GAPDH and ACTB reference genes in groups were determined using RT-qPCR. PPIA (13.63-17.32), ACTB (14.86-17.18) and GAPDH (13.57-19.46) Ct results at 0th, 6th and 12th hours were found similar. On the other hand, PPIA (15.27-21.88; P<0.01), ACTB (15.62-22.29; P<0.001) and GAPDH (15.22-25.87; P<0.001) Ct values were found significantly different at 24th and 48th hours samples. According to the results, besides checking the quality of RNA with agarose gel electrophoresis in heart tissues stored +4 °C after death, using these reference genes' Ct values, it might obtain additional information about postmortem interval.

Keywords: RNA Quality, Postmortem Interval, RT-qPCR, Heart Tissue, Rats

Acknowledgements This study was supported by Scientific Research Council of Hatay Mustafa Kemal University with 18U008 project number

IN VITRO RUMEN STUDY: EFFECTS OF CONSORTIUM PROBIOTICS TECHNOLOGY ON RUMEN PH STABILIZATION AND TOTAL PROTOZOA CONCENTRATION

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Abstract:

Subacute ruminal acidosis (SARA) is one of the most significant diseases affecting dairy cows and dairy producers today, with long-term health, welfare, and economic consequences. The use of probiotics could attenuate the symptoms of this metabolic disorder by helping stabilize and maintain ruminal pH and increase the concentration of protozoa associated with fiber digestibility, oxygen absence, and animal growth. This study's objectives were to determine the efficacy of SCD Bio Livestock[®], a patented commercial consortium probiotics formula, on pH stabilization and to understand the effects of the same probiotics product on total protozoa concentration through in vitro rumen tests. The ruminal fluid was provided from a local slaughterhouse. It was then filtered through a four-layer cheesecloth. The probiotic liquid was supplemented to the rumen fluid at the manufacturer's suggested dose, and the ruminal fluid was poured into each fermentation syringe alongside a non-supplemented control. Over the course of each process, the ruminal fluid was exposed to CO₂ and incubated at 39 C° for 48 hours. At the 3rd, 6th, 12th, 24th, and 48th hours of incubation, the fermented syringes were removed from the incubator and pH values were detected by pH meter. For protozoa detection, the ruminal fluid was mixed with MFS solution and counted under a light microscope. It was observed that the addition of the probiotic blend supplement in the ruminal fluid did not alter pH value (P>0.05). Total protozoa counts were affected by the probiotics positively: 5.18 log₁₀/l in the control group and 5.41 log₁₀/l in the probiotics group. Per the results of the study, it was concluded that using consortia probiotics can be helpful in stabilizing ruminal pH, which is necessary to prevent SARA. It also increased the concentration of protozoa, which can help increase fiber digestibility, remove oxygen in rumen, and increase animal growth.

Keywords: Consortium Probiotics, Acidosis, Protozoa Concentrations

THE IMPACT OF FELINE IMMUNODEFICIENCY VIRUS (FIV) ON THE INCIDENCE OF REDIRECTED AGGRESSIVE BEHAVIOR AND DIFFERENCE IN PROVIRAL DNA

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Abstract:

A study was undertaken to determine the incidence of redirected aggression among naturally infected cats with FIV and moreover, to see whether there is any difference in the amount of targeted proviral DNA between cats with aggressive behavior and non-aggressive cats. 96 cats were studied on the prevalence of FIV disease via nested PCR. The incidence of overt redirected aggression was assessed via observation during the clinical procedure and hospitalization by considering intolerant behaviors of subjects directed toward staff. The semi-quantitative amount of targeted proviral DNA (cycle threshold (Ct) values) was measured via Real-time PCR and the statistically significant difference in the amount of proviral DNA between FIV infected non-aggressive and aggressive cats were analyzed afterward. 24 cats (25%) were evaluated as aggressive cats and 72 cats (75%) were non-aggressive. 47 cats (49%) were FIV infected and All aggressive cats were FIV positive (100%). The incidence of redirected aggression was significantly higher ($p \leq 0.05$) in the FIV infected cats. The mean was 14.78 ± 9.46 for aggressive cats and 21.39 ± 7.84 for non-aggressive cats and statistical analysis revealed a significant difference ($p \leq 0.05$) in the mean Ct value between cats with aggressive tendencies and non-aggressive cats. It can be suggested that cats become more aggressive as the disease progresses into the terminal stage and displaying aggressive behavior may not only be a risk factor but also a consequence of the viral direct effect

Keywords: FIV, Cat, Aggression, DNA, PCR

ANIMAL PRODUCTION IN TRAKYA

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Abstract:

Trakya at North-west of Turkey in the European part. This region has a big potential in agriculture and livestock production. The total agricultural lands area is 380262 ha, 268311 ha, and 394307 ha respectively for Edirne, Kırklareli, and Tekirdag. Total agricultural lands are 1042880 ha in Trakya. Especially, in the Trakya region in spite of the forage and pasture areas decreased the lands for the cereal and industrial crops was increased due to intensive agriculture in latest years. Animal production has a big potential in total agricultural production in Trakya. Main species of livestock are dairy and beef, goat and sheep. This region has very important potential in dairy cattle farming because of that; Trakya region is a preservation area for some of the livestock diseases. The transferring of livestock animal from Anatolian regions to Trakya done with special permission. The total of livestock populations especially dairy cattle has become from native, cultural and crossbreeds. It has big potential for animal export from different countries. Approximately 96% of the total dairy cow are cultural and crossbreeds mainly Holstein cattle breed. His region has big potential for animal import from different countries. This study was carried out to determine the current situation of livestock production in Trakya.

Keywords: Trakya, Animal Production, Cattle, Sheep, Goat

CONCURRENT TRANSMISSIBLE VENEREAL TUMOR AND GRANULOSA CELL TUMOR IN A 10 YEAR-OLD DOG

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Abstract:

Canine transmissible venereal tumor (CTVT) is a round cell neoplasm occurring on external genital mucosae and is transmitted by cell implantation during coitus, licking, or other interaction between an affected dog and a susceptible host in endemic regions. The extragenital occurrence of CTVT without genital lesions has also been reported. Granulosa cell tumor is rare and locally invasive neoplasia of the ovary. The purpose of the study was to evaluate, pathomorphological and immunohistochemical findings of CTVT and granulosa cell tumor which occur concurrently. From a 10 year old, female dog, a mass near fifth mammary lobe and a mass within ovary were sent to our department from Obstetrics and Gynecology. After routine tissue processing, 5 µm sections were stained with routine Hematoxylin and Eosin (HxE) staining and CD4, CD8, Ki67 and estrogen receptor, vimentin, smooth muscle actin (SMA), desmin, Ki67, S100, inhibin-α sera with avidin-biotin complex-peroxidase technique, respectively. Microscopically, the mass revealed the cells has polygonal, oval and/or round vesicular nucleus with evident cytoplasmic borders and were accompanied by numerous mitotic figures. Immunohistochemically, there were strongly positive for Ki67, positive for vimentin but the mass was negative for CD4 and CD8 and it was diagnosed as CTVT. Microscopical examination of mass in ovarium revealed neoplastic granulosa cells that has oval or round, hiperchromatic nucleus and eosinophilic cytoplasm and diagnosed as granulosa cell tumor. The cells were accompanied by round, eosinophilic Call-Exner bodies in some areas. Immunohistochemical examinations were positive for Ki67, vimentin, inhibin-α, estrogen receptor and were negative for S100, desmin, SMA. In a 10-year-old dog, two distinct tumors with no correlation in terms of pathogenetic or functional pathways, were examined detailed pathomorphologically and immunohistochemically. Also, we think this will contribute because ovarian tumors rarely seen in dogs.

Keywords: Concurrent, Dog, Granulosa Cell Tumor, Immunohistochemistry, Transmissible Venereal Tumor

A REVIEW:ANTIMICROBIAL RESISTANCE IN HORSES

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Abstract:

Two of the major problems encountered in horse breeding, similar to other animal breeding, are performance and economic losses caused by infectious diseases. Antibiotics are the most important and most widely used medicines for combating infectious diseases of horses. However, successful results are often not obtained and the disease cannot be effectively treated by antibiotics treatment. One of the main reasons for this is the lack of adequate response to antibiotics due to the development of resistance. Inbreeding purebred horses, it is known that the growers are unconscious about the use of antibiotics and they usually use wrong antibiotics in the treatment of diseases. It is understood that since the usage of antibiotics plays an important role in the development of resistance, some measures such as when and how to use the antibiotics, should be taken to reduce the financial losses. Antimicrobial resistance in equidae against Salmonella, E. coli, other enterobacteria, staphylococci, Klebsiella, Pseudomonas and other opportunistic pathogens is a widespread condition. The identification of some high-profile pathogens, especially potential zoonotic bacteria such as wide-spectrum Beta-lactamase (ESBL) producing enterobacteria, methicillin-resistant S. aureus, and multiresistant salmonella, are remarkable for antimicrobial resistance in horses. Except for these pathogens in the horses, studies have also been conducted on the effect of antibiotic use in the spread of ESBL enterobacteria and MRSA. This situation also attracts the notice of the effects of antibiotics used on animal and public health. Also, a small number of records and molecular studies are present for the resistance to other bacteria such as enterococci, salmonella, Acinetobacter and Pseudomonas species. There is a need for studies on the detection of antimicrobial resistance epidemiology since the data on the assessment of risk factors are limited. The resistance related studies for horses are limited in Turkey.

Keywords: Antimicrobial Resistance, Horse, Bacteria

PHARMACOKINETICS AND BIOAVAILABILITY OF TOLFENAMIC ACID IN SHEEP

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Abstract:

The pharmacokinetics, bioavailability, and tolerability of tolfenamic acid (TA) were determined following different routes and doses in sheep. The study was carried out in a crossover design with a washout period of 15 days. In the study, sixteen clinically healthy sheep were randomly assigned to two equal groups. In the first group (n=8), animals received TA by intravenous (IV), intramuscular (IM), subcutaneous (SC), and oral (OR) routes at 2 mg/kg. In the second group (n=8), TA was administered intravenously to each sheep at 2, 4, 8 and 16 mg/kg. Plasma samples were analyzed by a high-performance liquid chromatography assay. Non-compartmental pharmacokinetic analyses were used to evaluate the data. The area under the concentration-time curves ($AUC_{0-\infty}$), elimination half-life ($t_{1/2\lambda z}$), and the mean residence time (MRT) significantly differed among routes at 2 mg/kg. Following IM, SC, and OR administrations, TA demonstrated different peak concentration (C_{max}) and time to reach C_{max} (T_{max}) with the bioavailability of 163%, 127%, and 107%, respectively. Dose-normalized $AUC_{0-\infty}$ showed a significant difference among dose groups. However, the relationship between dose and $AUC_{0-\infty}$ was linear. $t_{1/2\lambda z}$ and MRT prolonged depending on dose. Although total clearance (ClT) decreased depending on dose, the volume of distribution at steady state (V_{ss}) increased. TA shows a long half-life and high bioavailability following IM, SC, and OR administrations at 2 mg/kg. TA exhibited linear kinetics and was well tolerated except at 16 mg/kg. TA may be used with different routes and doses (≤ 8 mg/kg) in sheep. However, further studies are needed to determine the clinical efficacy of TA during inflammatory and painful conditions and the pharmacokinetics and safety of repeated administration in sheep.

Keywords: Tolfenamic Acid, Pharmacokinetics, Bioavailability, Tolerability, Sheep

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ISO 17025: 2017 AND ISO 31000 STANDARDS EFFECTS ON MICROBIOLOGICAL ANALYSIS QUALITY

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Abstract:

Risk refers to the functional relationship between the likelihood of emergence of a hazard that has the potential to cause adverse health effects and the severity of its consequences. Therefore, if the probability or intensity is zero, the risk will be zero. However, in general, "probability" is not zero and "risk" is not zero. Risk can also be reduced if the "probability" of one of the two components of the risk (probability and severity) is reduced. Risk analysis consists of three separate but interconnected components: risk assessment, risk management and risk communication. TS EN ISO/IEC 17025: 2017 one of the most fundamental changes in the new revision of the General Standard for the Competence of Experimental and Calibration Laboratories is the risk based approach. According to Standard, risk brings to "Opportunities". The implementation of risk-based thinking (Proactive Approach) has replaced the 2005 version of preventive action and normative requirements to the requirements based on performance of the organization. In this respect, it is expected that the standard will be designed and implemented in order to address the risks and opportunities of the laboratory. In the standard's view, the laboratory held the laboratory responsible for deciding which risks and opportunities should be addressed. TS ISO 31000 Risk Management and Standards Guidelines provides for managing risk face to face by organizations. According to the standard, "Risk" is the uncertainty effect on the targets. The aim of risk management be to create and protect the values. It enhances performance, encourages innovation and promotes reaching goals. The risk and microbiological analyzes are the relationship between in the risk management should be addressed within many more risk factors such as whether or not staff have adequate training and they are paying attention to hygiene rules, cleaning and sterilization status of the laboratory, whether or not the laboratory has adequate equipment, the calibration asset and update of the equipment.

Keywords: ISO 17025, TS ISO 31000, Risk Management, Microbiology Laboratory

HEMATO-BIOCHEMICAL EFFECTS OF THEILERIOSIS IN A COW BROUGHT TO THE ANIMAL HOSPITAL OF ATATÜRK UNIVERSITY

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Abstract:

A 6 year old cow with the complaint of jaundice, loss of appetite and fatigue was brought to the Erzurum, Veterinary Faculty Animal Hospital of Atatürk University from Bingöl. It was learned that the ticks on the animal and buparvaquon was used five days ago. Body temperature of 37.6 ° C, pulse rate of 84 / min, respiration rate of 20 / min and decreased ruminal motion were determined in clinical examinations. Blood was taken from vena jugularis for hematological and biochemical analyzes into EDTA and serum tubes. Hematological analysis revealed severe anemia (RBC 2.29x10⁶ µl, hemoglobin 3.5 g/dl, HCT 11.93%), lymphopenia (1.47x10³ µl) and thrombocytopenia (39x10³ µl). Theileria spp. agents were determined in microscope by Giemsa staining of blood samples. Under light microscope Theileria spp. piroplasms were detected in red blood cells with Giemsa stain solution. Biochemical data of serum samples showed that decreased calcium (6.04 mg/dl), total protein (5.56 g/dl), iron (191.1 ug/dl), albumin (2.52 g/dl), phosphorus (5.26 mg/dl) and increased AST (501 U/L), GGT (105 U/L), total bilirubin (3.22 mg/dl), urea (67.5 mg/dl). Globulin (3.04 mg/dl), glucose (76 mg/dl), magnesium (1.68 mg/dl) and creatinine (1.17 mg/dl) levels were normal. These results revealed that Theileriosis in cattle is associated with evident changes in hemato-biochemical parameters.

Keywords: Theileriosis, hematology, biochemical analysis

THE EFFECTS OF HYPOTHERMIA ON CARDIOVASCULAR SYSTEM UNDER PROPOFOL ANESTHESIA IN WISTAR RATS

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Abstract:

In this study, it was aimed to evaluate effect of hypothermia on cardiovascular system in rats with hypothermia. 56 female wistar rats were divided into 7 groups, each consisting of 8 rats. In Group 1, no procedure was performed and evaluated as a control group. Group 2 rats received propofol intraperitoneally (100 mg/kg), Group 3 rats received the same dose of propofol anesthesia and applied moderate hypothermia (reduced to 34°C), Group 4 rats received the same dose of propofol anesthesia and applied severe hypothermia (reduced to 31-32°C). Only hypothermia was formed in the rats in groups 5 (mild hypothermia, reduced to 36,3°C) , 6 (moderate hypothermia) , and 7 (severe hypothermia) without anesthesia. In order to form hypothermia, rats were kept in cold water baths and reduced their body temperature. During the experiment, heart rate, respiratory rate, rectal temperature and oxygen saturation of the rats values were recorded. When the experimental protocol was completed, rats were sacrificed by high-dose anesthetic and cardiac tissues were taken and examined histopathologically. At the beginning of the experiment, the average body temperature of the rats was 38°C. There was no statistically significant difference in heart rate, respiratory rate and oxygen saturation in all these hypothermia groups with or without anesthesia. More intensive necrotic and degenerative changes were observed in the heart tissue myocytes in groups 3 and 6 than other groups histologically. As a result, hypothermia can causes damage to the heart in rats with or without anesthesia. Furthermore, this damage can be more severe with a decrease in body temperature of 4 °C.

Keywords: Hypothermia, Propofol, Cardiovascular System, Rats

INFRARED THERMAL IMAGING IN A DOG WITH CHONDROMA

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Abstract:

In this study, It was presented 4 years old, male, german shepherd breed and dog in Atatürk University Veterinary Faculty Animal Hospital Surgical Department. The purpose of this report was to evaluate the thermographic findings of the case diagnosed with chondroma. Clinical examination revealed a swollen, laterally fistulized and bloody discharge from the left cubitus joint. It was learned that the case had two-month history. Following radiographic and thermographic examinations, biopsies were performed and evaluated histopathologically. The highest temperature was 37.5 °C in the lateral view of the cubitus joint. The highest temperature was 38.1 °C in the anterior view of the cubitus joint. The temperature on the healthy tissue distally to the same joint was anterior 30.8 ° C and lateral 28.9 ° C. The values obtained from the healthy right cubitus joint were 28.6 ° C in the lateral view and 32 ° C in the anterior view. The temperature increase in the affected area was 6.1 ° C in the anterior and 8.9 ° C in the lateral view according to the healthy addition. In conclusion, it is thought that thermography is an alternative diagnostic method in determining the severity of the disease and contributes prognosis for chondroma.

Keywords: Chondroma, Thermography, Dog

INTERPRETATION OF NT-proBNP VALUES AMONG DIFFERENT STAGES OF CANINE MONOCYTIC EHRlichIOSIS

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Abstract:

In canine Monocytic Ehrlichiosis, different biomarkers of cardiopulmonary injury have been elucidated during past years. NT-proBNP is a fibrin degradation product present after a clot is degraded, which has been reported to provide support for the diagnosis of pulmonary thromboembolism in heartworm disease. Cardiac biomarkers also involving NT-proBNP along with troponin I and myoglobin evidenced presence of myocardial injury and heart failure. To the present authors knowledge little work has been performed to ascertain the utility of NT-proBNP in different stages of CME. Therefore in the present study the aim was to analyze the alterations among different stages of CME to those diseased and healthy dogs. To those of dogs with clinical presentation of any probable vector borne diseases, rapid diagnostic ELISA test kits were used for preliminary diagnosis. Afterwards dogs diagnosed with *E. canis*/*E. ewingii* antibodies were subjected to PCR analysis with specific primers. Dogs were than classified as acute infection acute *E. canis* infection (no antibody with detectable DNA [PCR+], n = 7); *E. canis* exposure (without detectable DNA [PCR-] whereas *E. canis* seroreactive, n = 7); active infection (PCR+ and *E. canis* seroreactive, n=10) and unexposed dogs (PCR- and no detectable antibodies, n =7). NT-proBNP values deemed elevated in acute and active infected CME cases, to those of which 2 cases in active infection group showed highest values (118.3 and 101.2 pg/ml). In a total of 7 out of 24 infected dogs presented elevated values, suggesting that NT-proBNP values must be analyzed to those of dogs with CME, which should promptly changes therapeutic intervention.

Key words: Canine Monocytic Ehrlichiosis, Stage, NT-Pro BNP

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* Abbreviated from Doğan S. Master of Science Thesis, Aydın, 2018.

INTERPRETATION OF SERUM 25 HYDROXY VITAMIN D₃ LEVELS IN DOGS WITH SARCOPTIC MANGE

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Abstract:

Current studies refer to the importance of Vitamin D, which is also known as a prohormone, can be related to numerous diseases. The literature reviews show that there are few researches about the effects of vitamin D to dogs with sarcoptic scabies. In this context, the study aims to quantitate the levels of 25-hydroxyvitamin D₃ in dogs with sarcoptic scabies and determine its correlation with disease activity. The study contains two research groups; "I. Dogs with Sarcoptic Scabies" and "II. Healthy Dogs". The blood samples, which contains both groups, taken from the *Vena cephalica antebrachii* to test tubes without anticoagulant at doses of 2 ml and centrifuged. 25-hydroxyvitamin D₃ levels in the centrifuged blood samples are determined by radioimmunoassay method. In this study where suitable statistical methods are used to calculate and compare the obtained parameters, the mean \pm standard deviation values for 25 (OH) D₃ levels in dogs with sarcoptic scabies were measured as $30,72 \pm 3,52$ and in healthy dogs as $79.93 \pm 5,76$ mg/dl. In conclusion, the study suggests that the measurement of vitamin D levels in dogs with sarcoptic scabies and the necessary supplement of vitamin are beneficial to treatment.

Key Words: Vitamin D, 25-Hydroxyvitamin D₃, Sarcoptic Scabies, Canine.

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* Abbreviated from Yener O. Master of Science Thesis, Aydın, 2018.

INTERPRETATION OF SERUM NEOPTERIN CONCENTRATIONS RELATED TO CELLULAR IMMUNE SYSTEM IN DIFFERENT STAGES OF CANINE VISCERAL LEISHMANIASIS

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Abstract:

In the present study the aim was to analyze serum neopterin values indicating cellular immune system within different stages of Visceral Leishmaniasis. The animal material of the study consisted of a total 35 dogs, enrolled into five groups, 28 of which were with CVL and 7 healthy. CVL diagnosis was based on one or more clinical findings attributable to the disease subjected to rapid ELISA test kits and IFAT analyses. The dogs diagnosed with VL were classified into 4 different groups (n=7 in each group) established by Leishvet Group based on serological, clinical findings within haematological and to those of serum biochemical findings. In this sense, research groups were determined as; Group I: Stage I (Slight Cases); Group II: Stage II (Mild Cases); Group III: Stage III (Severe Cases); Group IV: Stage IV (Very Severe Cases); Group V: Healthy Control. In the blood samples of the dogs with CVL and the healthy dogs categorized according to their stages, Npt well use for detecting immune response are measured. The numeric data obtained in this study were checked for distribution were subjected to parametric or non-parametric tests for intergroup comparison. Serum neopterin values respectively from stage I to IV in CVL infected dogs (minimum-maksimum) were as follows; 0.40-1.33 mg/dL (stage I); 0.24-2.27 mg/dL (stage II); 0.88-3.83 mg/dL (stage III); 1.30-96.79 mg/dL (stage IV) and 0.06-1.65 mg/dL (healthy control group). Stage IV group of dogs presented serum neopterin values ($17,68 \pm 10,02$), In contrast to stage I, stage II, stage III and control groups showed statistical significance ($p < 0,001$). Npt, as a biomarker belonging to activation of immune system has been elucidated within several human and animal studies in which as interpretation has been made in the present study, Npt might be a foremost biomarker for detecting prognosis of disease activity in advanced stages of the disease.

Key words: Canine Visceral Leishmaniasis, Stage, Neopterin

Acknowledgements: This MS thesis was supported by Adnan Menderes University Research Funding Unit with Project no: VTF-17001.

* Abbreviated from Şimşek K. Master of Science Thesis, Aydın, 2018.

ALLERGEN SPECIFIC IN VITRO IgE ASSAYS IN CATS WITH HEAD AND NECK DERMATITIS

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Abstract:

In the present study the aim was to detect in vitro Ig E concentrations and related disease activity to those of cats with dermatoses due to several different etiology.

The animal material of the study involved cats of various ages, of both sexes referred to Adnan menderes University Faculty of Veterinary with head and neck dermatosis (alopecia, crusting, scalling, hyperpigmentation, comedon formation and/or pruritus). Each group were composed of 10 cats, were classified as group I feline head and neck dermatiti, group II healthy cats.

To those of cases deemed related diseases and excluding co-infections co-infections deep skin scraping within (acetate tape, Wood's lamb, trichoscopy, impression smear, bacteriological and fungal culture). In each 2 group of cats 0.2 ml blood was withdrawn from Vena cephalica antebrahii which then were centrifuged and forwarded to in vitro specific" Polycheck allergy test detecting 20 different allergens Based on in vitro test results, there were statistically significant differences between the p values of cats with head and neck dermatitis and healthy cats in terms of *D. pteronyssinus* (P = 0,0017), Malassezia (P < 0,001), plantane/ willow/ poplar (P < 0,001), grass-mix (P < 0,001), stinging nettle (P < 0,005), lambs quarter (P = 0,014), plantain (P < 0,000), mugwort (P < 0,001), sorrel (P < 0,000), *Acarus siro* (P < 0,000), *Tyrophagus* (P < 0,000), flea (P < 0,000) specific IgE concentrations. In this study, there was no reaction against any allergen in the control group (n=10) and at least 12 allergen reactions were formed in the head and neck dermatitis cats.

It can be concluded that different allergens may be associated with disease activity in cats with head and neck dermatitis, if possible, treatment and prophylaxis such as elimination of these allergens, allergen specific immunotherapy/desensitization should be based these allergy test results.

Keywords: Allergen, Dermatit, Feline Head, and Neck Dermatit, Healthy Cats, In Vitro IgE

Acknowledgements: This MSc thesis was supported by Adnan Menderes University Research Funding Unit with Project no: VTF-17057.

* Abbreviated from Karaman A. Master of Science Thesis, Aydın, 2018.

COMPARISON OF HEMOSTATIC DRESSINGS FOR BLEEDING CONTROL IN SWINE

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Abstract:

Serious injuries accompanied by severe bleeding are life-threatening. Post-traumatic hemorrhage involves the risk of developing coagulopathy. Hemostatic dressings are widely used to minimize bleeding. The objective of this study was to determine the response of hemostatic dressings. Coagulation and fibrinolytic systems, red blood cell parameters, platelet and leukocyte counts were evaluated after the application of hemostatic dressings: QuikClot, Chitoauze and Celox gauze. In control group surgical gauze was used. The study was conducted on sixteen healthy Polish White Pigs, weighing approximately 30 kg, which were randomly divided into four groups. Time of effective hemorrhage control was measured. Additionally, the effect of examined hemostatic dressings on porcine femoral muscle tissue was evaluated. A histopathological analysis revealed pathological changes in muscle tissue specimens collected from all the animals. One of the observations is that the residues from the hemostatic dressings can ingress into the systemic circulation thereby increasing the risk of embolus formation. Because of these harmful effects, the evaluated hemostatic dressings are not appropriate for long-term use. Future studies are needed on the consequences of the long-term application of these hemostatic agents. The study was approved by the Institute for Animal Welfare and the Bioethics Committee. All animals were handled humanely in compliance with the Policy on Humane Care and Use of Laboratory Animals and the standards of the Polish Council on Animal Care. The experiment was also approved by the Local Committee for Animal Care in Olsztyn (Decision No. 44/2014/N).

Keywords: Bleeding, Hemostatic Dressing, Pig

Lifetime achievement awards

PROF. DR. HİLAL KARAGÜL

PROF. DR. BEHİÇ COŞKUN

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BESTAMI YILMAZ

The Young Researcher of the Year

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Best Oral Presentation

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3RD OKAN EKIM & SEYED MAHMOUD SADJJADI

Best Poster Presentation

1ST ORHAN ÇORUM

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