ICAVST

INTERNATIONAL CONGRESS ON ADVANCES
IN VETERINARY SCIENCES & TECHNICS

BOOK OF ABSTRACTS
ICAVST – 2016

www.icavst.com

AKSARAY UNIVERSITY

FACULTY OF VETERINARY MEDICINE

TURKEY

UNIVERZITETA U SARAJEVU

FACULTY OF VETERINARY MEDICINE

BOSNIA AND HERZEGOVINA

1ST INTERNATIONAL CONGRESS ON ADVANCES IN VETERINARY SCIENCES AND TECHNICS (ICAVST)

25th- 29thAUGUST 2016

SARAJEVO
BOSNIA AND HERZEGOVINA

“1. Uluslararası Veteriner Bilimleri ve Tekniklerinde Gelişmeler Kongresi (ICAVST)” ne ait bu bildiri özetleri kitabı 667 sayılı KHK ve bu kapsamda FETÖ/PDY ve diğer milli birliğe düşman terror örgütlerine yönelik alınan önlemler kapsamında çıkarılan 672, 675 ve 677 sayılı KHK’lar dikkate alınarak hazırlanmıştır.

ORGANIZATION COMMITTEE

Honorary Presidents

Prof. Dr. Yusuf Şahin
(Rector, Aksaray University

Prof. Dr. Muharem Avdispahic
(Rektor, Univerziteta u Sarajevu)

Congress Co-Chairs

Prof. Dr. Halil Selcukbiricik
(Dean of Faculty of Veterinary Medicine of Aksaray University)

Prof. Dr. Nihad Fedjic
(Dean of Faculty of Veterinary Medicine of Univerziteta u Sarajevu)

Secretariat General of Congress and Editor

İlker Çamkerten PhD, MSc, DVM

Chairman of Organization Committee and Editor in Chief

Hikmet Ün PhD, DVM

Members of the Organization Committee

- **Güzin Camkerten** PhD, DVM
- **Mustafa Öz** PhD, MSc
- **Tahir Karaşahin** PhD, DVM
- **Muhamed Smajlovic**, PhD, DVM
- **Mustafa Ardıç** PhD, DVM
- **Osman Karabulut** PhD, DVM
- **Ferhan Bölükbaş** MSc
- **Hajrudin Besirovic,** PhD, DVM
- **Rizah Avdic**, PhD, DVM
- **Vedad Sakic**, PhD, DVM
- **Aida Hodzic**, PhD, DVM
- **Amir Zahirovic,** PhD, DVM
- **Jasmin Omeragic**, PhD, DVM
- **Faruk Caklovica**, PhD, DVM
- **İsmet Uzun** Zenith Group
- **Musa Köse** Europe Congress
- **Alma Ligata** Europe Congress

Secretary-General Adviser

Adil Aksoy, PhD, DVM

ADVISORY BOARD

SCIENTIFIC COMMITTEE

Assoc. Prof. Yüksel Ağca	Missouri University, USA
Prof. Dr. Masood Akhtar	BZU, Pakistan
Prof. Dr. Gürbüz Aksoy	Harran University, Türkiye
Sinan Aktaş	Atatürk University, Erzurum, Türkiye
Assoc. Prof. Zahir Alasgarov	State Agri. Universty, Azerbaijan
Assoc. Prof. Zeki Aras	Aksaray University, Türkiye
Asst. Prof. M. M. Awais	BZU, Pakistan
Assoc. Prof. Faruk Aydın	Balıkesir University, Türkiye
Prof. Dr. Burhanettin Baydaş	Bingöl University, Türkiye
Prof. Dr. Ömer Beşaltı	Ankara University, Türkiye
Asst. Prof. Gaye Bulut	Aksaray University, Türkiye
Dr.Irena Celeska	Ss.Cyril & Methodius Unv, Macedonia
Dr. Cristin Coman	Cantacuzino Institute, Romania
Prof. Dr. Mehmet Çabalar	Harran University, Türkiye
Prof. Dr. Hayrettin Çetin	Adnan Mendres University, Türkiye
Asst.Prof.Şükrü Dursun	Aksaray University, Türkiye
Assoc. Prof. Erdal Erol	Kentucky University, USA
Dr.Conrad Freuling	Institute for Animal Health, Germany
Prof. Dr. Arcangelo Gentile	Università di Bologna, Italy
Dr.Tony Glaus	University of Zurich, Switzerland
Asst. Prof. A.E. Haydardedeoğlu	Aksaray University, Türkiye
Prof. Dr. Rene Van Den Hoven	University of Veterinary Medicine, Austria
Asst. Prof.Ramazan İlgün	AksarayUniversity, Türkiye
Dr. Ardita Jahja-Hoxha	Savonia University, Finland
Prof. Dr. Hilal Karagül	Ankara University, Türkiye
Assoc. Prof. Hikmet Keleş	Afyon Kocatepe University, Türkiye
Dr.Nikolaos Kostomitsopoulos	Academy of Athens, Greece
Prof. Dr. Mihai Mares	IASI, Romania
Prof. Dr. Kenton Ll. Morgan	University of LiverpoolLeahurst, UK
Dr. Thomas Müller	Institute for Animal Health, Germany
Asst. Prof. Martin Nielsen	University of Kentucky, USA
Asst. Prof.Başak B. Özgermen	AksarayUniversity, Türkiye.

Prof. Dr. Fatih Özoğul	Cukurova University, Türkiye
Dr. Lucian Parvulescu	West Unv.of Timisoara, Romania
Assoc. Prof. Lazo Pendovski	Ss. Cyril and Method. Unv., Macedonia
Prof. Dr. William Pérez	Veterinary Faculty, Uruguay.
Dr.Romain Pizzi	University of Nottingham, UK
Assoc. Prof. Alexei Santiani	Unv.Nac. Mayor de San Marcos, Peru
Prof. Dr. Tevhide Sel	Ankara University, Türkiye
Prof. Dr. Henry Stämpfli	University of Guelph, Canada
Assoc. Prof.Jose STARIC	Ljubljana University, Slovenia
Prof. Dr. Tekin Şahin	Bingöl University, Türkiye
Prof. Dr. İsmail Şen	Selçuk University, Türkiye
Prof. Dr. Ilia Tsachev	Trakia University, Bulgaria
Dr.Deniz Alic Ural	Adnan Menderes Unviversity, Türkiye
Assoc. Prof.B. Bekir Yağcı	Kırıkkale University, Türkiye
Prof. Dr. Kyoung-Jin Yoo	Iowa State University, USA
Assoc. Prof.Hayati Yüksel	Bingöl University, Türkiye
Prof. Dr. Tomaz Zadnik	Ljubljana University, Slovenia

Dear Scientist,

The first International Congress on Advances in Veterinary Sciences & Technics (icavst) was organized by collaboration of Aksaray University, Faculty of Veterinary Medicine, Turkey and Univerziteta u Sarajevu, Faculty of Veterinary Medicine, Bosnia and Herzegovina. 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 aarea 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 congress was held the first time and we hope to bring more scientist together in the future congress.

The scientist joined the congress was from different country and mostly from Turkey. Total over the two hundered scientist were registered in the congress. The total number of submission were 325 and after a careful evaluation 177 submissions were accepted by our scientific committee and 58 of them were accepted as poster presentation and 121 of them were accepted as oral presentation and at the same time 9 of them were accepted as full text presentation and all those presentation was taken place in the conference booklet.

We would like to thank to Rector of Aksaray University Prof. Dr. Yusuf Şahin and Rektor of Univerziteta u Sarajevu Prof. Dr. Muharem Avdispahic for giving us permission and also supporting us and also we thank to the Dean of Faculty of Veterinary Medicine of Aksaray University, Prof. Dr. Hahil Selçukbiricik and the Dean of Faculty of Veterinary Medicine of Univerziteta, Prof. Dr. Nihad Fejzic. We would like to send our special thanks to Mr. Musa Köse and 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.

Hikmet Ün

Chair of Organization Committee

Program

	Thursday (August 25)		
09:00-17:00	Arrival of participants, registration open Exhibition set up		
17:00-19:00	Sarajevo City Tour		
19:00	**Dinner**		
	Friday (August 26)		
	Opening Session		
09:00-09:30	Opening remarks Welcome address Opening speech		
	Plenary Session		
09:30 -10:00	***Transgenic monkey model of Huntington's disease, Invited speaker, Anthony Chan, Emory University, USA***		
10:00-10:30	**Coffee/Tea Break Poster and Sponsors Session**		
	Session 1A Reproduction Chair: Yüksel Ağca	**Session 1B Clinical and Experimental Studies Chair: Tekin Şahin**	**Session 1C Anatomy-Histology Chair:Zafer Soygüder**
10:30-10:45	ORAL16, Öznur Aslan Investigation of relationship between coagulation parameters and embryonic loss in embryo transferred cows and heifers	ORAL12, Ahmet Uyar Pathological And Biochemical Investigation Of The Seen Deaths After Yeldif®Injection Performed By The Growers To Lambs	ORAL 39, Sevinç Ateş The Anatomic and Morphometric Examination of Stifle Joint in Wild Pig
10:45-11:00	ORAL25, Şükrü Dursun Investigation of effects on time of AI and parturition in the middle anatolia merino ewes to the ram effect during the breeding season	ORAL52, Ufuk Mercan Yücel Amiodarone's Effects On Pathological, Hematological And Biochemical Parameters In Acute Selenium Poisoning	ORAL40, Lutfi Takcı The Morphology of the Interventricular Structures of the Heart in 80-Day-Old Wild Pig Fetal Siblings
11:00-11:15	ORAL29, Tahir Karaşahin Effect Of Embryo Transfer To Conception Rates In Repeat Breeding Cattles	ORAL48, Pelin Fatoş Polat Evaluation as Clinical, Histopathological and Immunohistochemical of Different Treatment Methods in Bovine Cutaneous Papillomatosis	ORAL8, Feyzullah Beyaz Intestinal macrophages in the gut-associated lymphoid tissue of the Angora rabbit
11:15-11:30	ORAL77, Afşin Kocakaya Investigation of Some Reproductive Characteristics and Progesterone Levels of Akkaraman Sheep	ORAL 59, Aynur Şimşek Investigation of Hematological and Biochemical Parameters, Clinical Findings and Rumen Content in The Different Phases of Experimental Ruminal Acidosis in Sheep	ORAL42, İbrahim Kürtül Morphology Of The Spinal Cord In 80 Days Old Fetuses Of Wild Pig
11:30-11:45	ORAL101, Tahir Karaşahin Comparison Of Results Of The Superovulation In Dak Cows Grown In Different Locations	ORAL30, İlker Çamkerten Marbofloxacin associated hypersensitivity and alopecia in cats	ORAL47, Ferhan Bölükbaş Histological Study of Tongue of in the blind mole rat (Nannospalaxxanthodon) (Rodentia: Spalacidae)
11:45-12:00	ORAL115, HüseyinErdem Effect Of FlunixinMeglumine On Pregnancy Rate During And After Embryo Transfer In Angus Cow	ORAL31, İlker Çamkerten Injectable anthelmintic medicine (Ricabendazol) effect on naturally infected Kilis's goats.	ORAL49, Deniz Korkmaz Investigation of the distribution in plasma cells and eosinophil granulocytes in the small intestine of the Camel (Camelusdromedarius)
12:00-12:15			ORAL112, Duygu Baki Acar A Rare Case of Uterus Unicornis with Pyometra in a Pekingese Bitch
12:15-12:30			ORAL65 , Rahşan Yılmaz The Evaluation ofEffect of RAI in the Gastric by Scintigraphic, Biodistribution, Histopathological and Immunohistochemical Demonstration of Na+/I- Symporter in the Rat Model
12:30-14:00	**Lunch**		
	Plenary Session		
14:00-14:30	***Genetically modified rodent genome cryobanking and rat model of ovarian tissue cryopreservation and auto-transplantation, Invited speaker, YükselAğca, Missouri University, USA***		
	Session 2A Cancer Chair: Afrim Hamidi	**Session 2B Sosio-economic Chair: Osman Karabulut**	**Session 2C Scientific Chair: Hatice Çiçek**
14:30-14:45	ORAL9, Caner Öztürk Effect of Paclitaxel and Resveratrol treatments on Sperm Concentration, Testes Histology and Fertility of New Zealand Rabbit	ORAL90, Erşan Sever Socio-Economic Analysis Of Cattle Enterprises Of Aksaray Province	ORAL62,Başak B. Özgermen The Effects Of Transplantation Of Limbal Derived Mesenchymal Stem Cells (Lmscs) Grown On Contact Lenses In A Dog With Dry Eye Syndrome
14:45-15:00	ORAL54, NeslihanTekin New Generation Platinum Complexes' Antitumor effects in K562 Cells	ORAL92, Erşan Sever Production And Marketing Problems Of Cattle Enterpreneurs: The Case Of Aksaray Province	ORAL87, Serhat Özgermen First Molecular Detection and Characterization of Canine Adenoviruses in Turkey
15:00-15:15	ORAL79, Çağrı Gültekin Comparison of the Analgesic Effects of Morphine and Tramadol after Tumor Surgery in Dogs	ORAL116, Osman Karabulut The Investigations on Hatchability in Geese in Aksaray Region	ORAL21, Özay Güleş Effect of Coenzyme Q10 Supplementation on Spermatogonial Stem Cell Distribution and Germ Cell Apoptosis in Bisphenol A-Induced Male Rats
15:15-15:30		54, Volkan Han Policiesforthe Development of CattleRaising in Aksaray: Ipard Applications	ORAL66, Neslihan Sürsal Cat neutrophil isolation: Comparison of the efficacy Biocoll Separating Solution and Percoll Gradient Solutions
15:30-15:45			ORAL102, Çağrı Ç. Sinmez Ethnoveterinary Medicinal Plants Of Sivas Region, Turkey
15:30-16:00	**Coffee/Tea Break Poster and Sponsors Session**		
	Session 3A Fisheries Chair: SuatDikel and Mustafa Öz	**Session 3B Biochemistry Chair:İsmail Bayram**	**Session 3C Parasitology Chair: Abdurrahman Gül**
16:00-16:15	ORAL27, Mustafa Öz Effects of black cumin oil (Nigella sativa) on sensory, chemical and microbiological properties of rainbow trout during 23 days of storage at 2±1ºC	ORAL94, Miyase Çınar Relationship between the serum thyroid hormones and lipid profile in clinically healthy Damascus goats	ORAL68, Mustafa Eser The Prevalence of larval stages of Dicrocoeliumdendriticum in the first intermediate host Helix lucorum Linnaeus, 1758 (Mollusca: Pulmonata) in Eskişehir and Bartin Provinces.
16:15-16:30	ORAL28, Mustafa Öz Nutrition and Gender Effect On Body Composition of Rainbow Trout (Oncorhynchus mykiss)	ORAL35, Pınar Peker Akalın Milk And Milk Cell Vitamin C Levels In Subclinical Mastitic Cows	ORAL76, Ahmet. U. Kömüroğlu Relationship Between Neopterin, Myeloperoxidase And Oxidative Dna Damage In Sheep With Natural Babesiosis
16:30-16:45	ORAL15, Burak Evren İnanan Applications of Different Comet Assay (the Single Cell Gel Electrophoresis) Methods for Detecting DNA Damage in Cryopreserved Fish	ORAL46, Serkan Sayıner Blood Selenium and Vitamin E Levels in Heifers: Regional and Seasonal Differences in Turkish Republic of Northern Cyprus	ORAL103, Nafiye Koç The case of Nyctotherus sp. in Chamaeleocalyptratus in Turkey

	Sperm		
16:45-17:00	ORAL69, E. Tuğçe Aksun The past, current and future developments of surimi produced and consumed in Turkey	ORAL56, İsmail Bayram The effect of addition of Digestarom Dairy to dairy cows during dry period on the immunity of calf	ORAL95, Latife Çakır Bayram NeosporaCaninum Infection With Granulomatous Panophthalmitis In Dog: Rarely Systemic And EnteroepithelialNeosporosis
17:00-17:15	ORAL55, Mustafa Durmuş The effects of herbal extracts (thyme, rosemary, and basil) on the shelf life of vacuumed packed fish ball (mackerel, Scomberscombrus)	ORAL64, TuranYaman Protective Effects Of Sumach (RhusCoriaria L.) Extract On Liver And Pancreas Injury Induced By Diabetes Mellitus In Rats	ORAL78, Gülten Emek Tuna Evaluation on Clinical and Hematological Findings of Mono- and Co-Infection with Hepatozooncanis in Dogs
17:15-17:30	ORAL70, Yılmaz Uçar The comparison of the fatty acid compositions of fish silage oils prepared from fish waste treated with formic acid and different bacteria strains	ORAL19, Gökhan Sayber Concentrations of serum amyloid A, haptoglobin, tumour necrosis factor and interleukin-1 and -6 in neonatal calves naturally infected with amebiasis	
17:30-17: 45	ORAL3, Ilgın Özşahinoğlu Effects of Dietary Yeast (Saccharomyces cerevisia) Supplementation in Diets of Hybrid Tilapia (Oreochromisniloticus X Oreochromis aureus) During Overwintering Operation	ORAL53, A.Fatih Fidan TheEffects of RectalExamination on OxidativeStress in AnatolianBuffalo	
17:45-18: 00	ORAL20, Ilgın Özşahinoğlu An Investigation of Aquaculture Possibilities of Asian Catfish (PangasianadonhypophthalmusSauvage, 1878) under Çukurova Conditions	ORAL43, İsmail Bayram The Response of Two Commercial Laying Hen Strains to an Induced Molting Program	
18:00-18: 15	ORAL73, Levent Sangün Weight Estimation of Upeneusmoluccensis(Bleeker,1855) by Using Different Normalisation Methods at Artificial Neural Networks	ORAL37, Beytullah Kenar Rapid Identification of Coagulase Negative Staphylococcus Isolates from Mastitic Milk by RFLP Analysis of PCR-Amplified groEL Gene (HSP60)	
18:15-18: 30	ORAL58, O. İnanç Güney Profile And Preference Comparison Of Seafood And Milk Consumers Under The Consept Of Healthy Food		
18:30-18: 45	ORAL93, Burcu Ak The Annual Productivity of Spirulina platensis Cultured in Outdoor Ponds		
18:45-19: 00	ORAL63, Fatih Özoğul The impact of icing with potato, sugar beet and red beet peel extract on the quality aspects of rainbow trout (Oncorhynchus mykiss) fillets		
19:00-19: 15	ORAL71, Fatih Özoğul Comparison the chemical, sensory and microbiological parameters of wild and cultured rainbow trout (Oncorhynchus mykiss) stored in ice		
19:00	**Dinner**		
	Saturday (August 27)		
	Plenary Session		
09:00-09:30	***Infectious disease agents causing abortions in horses,*** ***Invited speaker, Erdal Erol, University of Kentucky, USA***		
	Session 4A **Internal Medicine** **Chair: Vehbi Güneş**	**Session 4B** **Virology** **Chair: Mehmet Çabalar**	**Session 4C** **Animal Husbandry** **Chair: Mustafa Ardıç**
09:30-09:45	Rene Van den Hoven General evaluation of blood parameters and anaemia	ORAL24, Metin Gürçay A sixteen year retrospective epidemiological study of animal rabies in the Southeast Turkey (2000-2015).	ORAL88, İsmail Kaya Effect of Different Protein Levels on Performance and Digestibility in Finishing Morkaraman Lambs
09:45-10:00	Rene Van den Hoven General evaluation of blood parameters and anaemia	ORAL4, Zeynep A. Yoldar Maternal Transmission of Porcine Circovirus Type 2 Neutralizing Antibodies	ORAL107, Davut Bayram Influence of some environmental factors on growth traits of Akkaraman lambs in breeder flocks in Kayseri Province in Turkey
10:00- 10:15	ORAL106, Ali Cesur Onmaz Clinical assessment and operative treatment of abdominal wall hernia in a newborn Simmental calf	ORAL13, Nural Erol A Serological Investigation of the Bovine Herpesvirus-1 (BHV-1) Infection in Sheep and Goats in Aydin and Izmir Provinces of Turkey	ORAL109, İsmail Ülger The Chemical Composition and Nutritive Value of Ensiled Sugar Beet (Beta vulgaris L.) Leaves with Various Additives
10:15- 10:30	ORAL34, Vehbi Güneş The Effect Of Corynebacterıum Cutis Lysate On The Level Of Colostrum Immunoglobin-G In Pregnant Heifers Vaccinated Against Neonatal Calf Diarrhoea	ORAL82, Neslihan Tascene Determination Of Growth Characteristics Of The Foot And Mouth Viruses (A,O,Asia-1) In Bhk-21 An30 And Bhk-21 An73 Cell Cultures	ORAL85, Hikmet Ün Generalized Peste des Petits Ruminants Disease (PPR) in a Sheep
10: 30- 10:45		ORAL86, Gaye Bulut Serological Detection of The Border Disease (BD) and Bovine Viral Diarrhea (BVD) Viruses in the Sheep and Goat	ORAL23, Mustafa Ardıç Prevalence of Listeria spp. in raw milk and Urfa cheese
10:00 10:30	**Coffee/Tea Break** **Poster and Sponsors Session**		
	Plenary Session		
10:30-11:00	***Current Status of Tilapia, Invited Speaker, SuatDikel, Çukurova University, Turkey***		
	Session 5A **Obstetrics** **Chair:Miyase Çınar**	**Session 5B** **Student Studies** **Chair:Güzin Çamkerten**	**Session 5C** **Treatment** **Chair:Abuzer Acar**
11:00-11:15	ORAL2, Ömer Korkmaz Differences ın the Follicular Morphology of Young and Aged Bitches and Their Correlation with the Anti-Müllerian Hormone.	Presentation and dicussion of undergraduate students Kemal Koç The artificial insemination procedure in cattle	ORAL108, NaciÖcal Investigation as clinical and laboratory of Besnoitiosis in cattle
11:15-11:30	ORAL25, Şükrü Dursun Determination of milk yield and udder characteristics in KangalAkkaraman Ewes	Kadir Karcıoğlu The legistative regulation for Veterinary Health Technicians	ORAL80, Kemal Varol Ozone Therapy in Veterinary Medicine
11:30-11:45	ORAL75, Fatma Satılmış Induction of Estrous and Ovulation with Long and Short Term Admınıstratıon of Progesterone During Early Anestrus in Akkaraman-Kangal Breed Sheep	Sultan Ev The duties of the Veterinary Health Technicians	ORAL81, Kemal Varol Determining the healing process of ozonated olive oil on experimentally induced skin infection by Staphylococcus aureus in rats
11:45-12:00	ORAL104, Tevhide Sel Use of the serum and milk biochemistry profile in the assessment of health status in dairy cows with subclinical mastitis	Eda Açıksöz The regulation of training of Veterinary Health Technicians	ORAL105, Burcu M. Balkan The Effects Of Donkey Milk And Kefir On Liver Tissue Mda Levels In Ehrlich Ascites Solid Tumor In Mice
12:00-12:15		Zübeyde Aslan	ORAL72, Ömer G. Dilek

		The history of Veterinary Health Technicians	A new problem! What do we know about fake journals?
12:15-12:30		Ruhat Çapkın The problems of the job opportunities ofVeterinary Health Technicians	ORAL84, Abuzer Acar Effects of Parenteral Administration of Long Acting Copper and Vitamin B12 on Hematological and Immune Parameters of Periparturient Dairy Cows
12:30-13:30	**Lunch**		
	Plenary Session		
13:30-14:00	***Veterinary Internal Medicine Case Studies: Emphasis on the importance of haematology and serum biochemistry diagnosis, Rene Van den Hoven, Invited speaker, University of Veterinary Medicine, Vienna, Austria***		
	Session 6A **Genetic, residue, analyses, diagnosis** **Chair: Osman Küçük**	**Session 6B** **Microbiology** **Chair:Erdal Erol**	**Session 6C** **Virtual** **Chair: Hikmet Ün**
14:00- 14:15	ORAL74, Banu Yüceer Özkul Genetic diversity between different horse populations in Turkey	ORAL1, Meriç Lütfi Avsever First Isolation of Alterneriaalternata from a Dog in Turkey	ORAL 89,Görkem Kısmalı Piperlongumine: A Promising Small Molecule for Cancer Treatment ORAL67, Hasan Alkan Detection of Multiple Pregnancy with Transabdominal Ultrasonography and Pregnancy-Associated Glycoprotein (PAG) Test ORAL61, İbrahim S. Çetingül Effects of Subclinical and Clinical Ketozis on The Incidence of Mastitis and Metritis , Culling Rate and some hematological parameters in Dairy Cows ORAL17, Memiş Bolacalı Effect of Sex and the usage of yeast autolysate (Saccharomyces cerevisiae) in the diets on performance in Japanese quails
14:15- 14:30	ORAL99, FatmaT. Özbaşer Live Weight and Some Morphological Characteristics of Zağar, Zerdava and Çatalburun Dogs	ORAL48, Tuba Özge Yaşar Case Report: A Chronic Ocular Pseudomanasaeriginosa Infection in a German Show Horse	ORAL7, Savaş Aslan Prevalence of Listeria monocytogenes at AfyonKaymak Processing Plant ORAL18, Tuncay Tufan Determination of Herbage Yield, Nutrient Composition of Pastures in Kars District ORAL60, İbrahim S. Çetingül The Influence of Cold Conditioning on the Performance of the Broiler Chicken ORAL39, Özgür Yaşar Çelik Investigation of Seroprevalence of Toxoplasma gondii in cattle in Siirt province
14:30- 14:45	ORAL100, Osman Safa Terzi Is Acute Phase Reaction, the Alarm System of Infection and Inflammation in Veterinary Medicine?	ORAL51, Öznur Aslan Hemotropic mycoplasmas: From Haemobartonella to Mycoplasma	ORAL10, Tahir Bayrıl The Technical and Financial Effects of Parenteral Supplementation with Selenium and Vitamin E during Late Pregnancy and the Early Lactation Period on the Productivity of Dairy Cattle ORAL14, Tahir Bayrıl Effect of supplementary liquid colostrum on performance, ceruloplasmin, sialic acid and some antioxidant levels in quails ORAL91, Gülcan Avcı Effects of platinum-based chemotherapeutic agents combined with gemcitabine on caspases activation in prostate cancer cell line
14:45- 15:00	ORAL22, Feray Altan The effect of Prophylactic Antibiotic Therapy on Oxidative Stress Parameters in Dogs Undergoing Orthopedic Surgery	ORAL57, Aynur Şimşek Comparison of Tuberculin Skin Test, IFN-γ Assay, Real Time PCR and Lateral Flow Rapid Test in Diagnosis of Field Outbreaks of Bovine Tuberculosis	ORAL32, Yalçın Akbulut The Macroanatomy of the Sacral Plexus in Buzzard (Buteobuteo) ORAL41, Nazlı Ercan An Overview On Oxidative Damage And Antioxidant Mechanism In Different Cases ORAL45, Seyrani Mersin Effect Of IBR And BVD On Pregnancy In Artificially Inseminated Cattles In The Siirt Province ORAL50, Mehmet Yardımcı The Impact of IPARD Supports on Structural and Managerial Features of Dairy Enterprises in Afyonkarahisar Province ORAL110, Güzin Çamkerten The Establishment Of Malakli Dog Regional Gene Bank
	ORAL33, Semih Altan Effects of procinetic drugs on some blood parameter in lambs with postoperative ileus	ORAL117, Adil Aksoy First isolation of Vibrio furnissii (emerging Vibrio) from bivalve molluscs in Turkey	ORAL11, Ramazan İlgün Comparative Macro-Anatomical and Morphometric Investigations on Splanchnocranium in Guinea fowls (Numidameleagridis) and Turkeys (Meleagridisgallapova) ORAL96, İlknur Pir Yağcı Anti-Müllerian Hormone Variations in Domestic Cat ORAL44, İbrahim Akın Economic Impact of Digital Dermatitis Treatment in a Dairy Farm: An Application of Break-Even Analysis
	ORAL6, Mehmet E. Akbalık The functional role of growth factor receptor family and some ligands in the oropharyngeal cavity of chukar partridge (Alectorischukar, Gray 1830)		ORAL97, İbrahim Mert Polat In vitro antifungal activity of nanobiosilver particles against Candida albicans ORAL98, Öğünç Meral Anticancer Potential of Capsaicin ORAL113, Sakine Ü. Çizmeci Freezing of InVivo Derived Saanen Goat Embryos with Use of Different Cryoprotectants during Slow Freezing ORAL114, Sakine Ü. Çizmeci Application Of Dry Period Treatment In Dairy Cows ORAL36, Özgür Yaşar Çelik Investigation of Seroprevalence of Toxoplasma

			gondii in cattle in Siirt province
	ORAL5, Duygu Sayın İpek Use of semi-nested PCR and rhinoscopy for the diagnosis of oestrosis		ORAL118, Mustafa Ardıç Hurdle technology ORAL83, Ömer Baris Ince Seroprevalence and Risk Factors Associated with Caprine Arthritis-Encephalitis Virus Infection in Goats in Iğdır region, Turkey
15:00-15:30	**Coffee/Tea Break** **Poster and Sponsors Session**		
	Plenary Session		
	Session 7A **Poster Discussions** **Chair:HalilSelçukbiricik**		
15:30-16:30	1, Suat Dikel OverwinteringandGreenhouseTechnics in Aquaculture 2, Suat Dikel Use of GeothermalSources in Aquaculture 3, Hakan Sağsöz Mucinprofiles of theabomasum in bulland ram: A comparativestudy 4,Feyzullah Beyaz Thecellproliferation in distalileum of sheepfetusesduring prenatal period 5, Nural Erol A SerologicalandVirologicalInvestigation of thePestivirusInfections in SheepandGoats in the Aydin andIzmirProvinces of Turkey	6, Füsun Erhan PossıbleEffects Of Vıtamın D On TestıcularDamageCreatedWıthBısphenol A InAdult Male Rats 7, Mustafa Ardıç NovelTrends in Development of Dietary Fiber RichMeatProducts 8, Hisamettin Durmaz The Presence of ListeriaSpecies in CornSilageandRawMilkProduced in SoutheastRegion of Turkey 9, Hisamettin Durmaz Thermaldestruction of Listeriamonocytogenesduringmanufacture of Kunefe, a traditionalTurkishdessert	10, Dinçer Yıldız Ultrastructure of the tongue and histochemical features of lingual salivary glands in buzzards 11, Kader Yıldız theEffects of extracellular trapsformations on host cell invasion byToxoplasmagondiitachyzoitesafterconfrontedwithsheeppolymorphnuclearneutrophils 12, Yaşar Akar Reproductive Performance of Saanen Goats under Different Management Systems in Turkey 13, Pelin Fatoş Polat Levels Of SomeTraceElementsIn Blood Samples Collected From Pıgeons in Sanlıurfa Provınce, Turkey
	14, Sevinç Ateş TheAnatomicalandHistologicalStudies on Testis of 80 DaysOld Wild PigFetalSiblings 15, Kamil Üney TheEffect Of Cefquınome On Hematologıcal AndBıochemıcalParametersFollowıngRepeatedSubcutaneousAdmınıstratıonsInSheep 16, Hikmet Keleş TheEffects of InducibleNitricOxideSynthase on BovineEnzooticHematuria-associatedUrinaryBladderTumors 17, Hikmet Keleş Sarcocystosis in theCremasterMuscle of an InfertileBull, SpermiostasisandOrchitis	18, A.Fatih Fidan Determination of LeadandCadmium Migration fromCeramicCupsSold in Afyonkarahisar, Turkey 19, Savaş Aslan Determining the Consumption Habits Relatedto Probiotic Products 20, Cristin Coman Preliminary Agand Cu particletreatment of chronicosteomyelitis 21, İbrahim Akın TraumaticMembranousUrethralRupture in a Foal	22, Orhan Çorum ChangesInHematologıcalAndBıochemıcalParametersFollowıngSıngle-Ascendıng-DoseAdmınıstratıons Of CeftrıaxoneInSheep 23, Mehmet Çabalar Serologicalevidence of maedi-visnainfectionamongindigenoussheepflocks in Van province of Turkey 24, Münir Z. L. Göksu AcuteToxicity of Abamectin (Insecticide) on Daphniamagna (Straus, 1820)
	25, Fatma Satılmış A StumpPyometra Case ComplicatedwithStumpGranuloma in a SpayedQueen 26, Mustafa Durmuş Effects of Nanoemulsions on Food-BornePathogens 27, A.Rıza Köşker The significance of the bacteriocins and their health benefits 28, A.Rıza Köşker The Potentıal Benefits And Harms Of Tetrodotoxın	29, Sami Gökpınar Investigation of Toxoplasmagondiitissuecysts in Chicken Brain Tissue 30, Gültekin Atalan Comparison of LowFrequency Lazer andScatricianPommade Application on BurnHealing in Rabbits 31, Esra Gökalp Effects Of Xylazıne-Ketamıne, Xylazıne-Propofol, Xylazıne-Ketamıne-PropofolAdmınıstratıon On Blood GasesInSheeps 32, Esra Gokalp Effects Of Xylazıne-Ketamıne, Xylazıne-Propofol, Xylazıne-Ketamıne-PropofolAdmınıstratoın On OxıdatıveStressInSheeps	33, E. Tuğçe Aksun Theinfluences of lavenderandlemonbalmextracts on qualityproperties of anchovy (Engraulisencrasicolus) storedundervacuumpack at 2±1ºC 34, Yeşim Özoğul Effects of differentextractionmethods on thefattyacidcompositions of fishsilage 35, Yılmaz Uçar BıopreservatıveProperties (Bacterıocıns) Of LactıcAcıdBacterıa 36, Orhan Çorum BıochemıcalAndHematologıcalChangesInResponseToSıngle-AscendındDoses Of PentoxyfıllıneInSheep
	37, Füsun Erhan Caspase-3 expressionanddetermination of apoptoticcell in rat testis duringpostnatalperiod 38, Ceren Dinler FatalOutcome Of RetaınedSurgıcalSponge (Gauzoma) In A Dog 39, Hatice Çiçek Prevalence of CoccidialInfection of SaanenGoats in Afyonkarahisar Province 40, Mustafa Durmuş TheImpact of PlantandBacterial Cell FreeExtracts on AmmoniaandBiogenicAmineFormation in FermentedSardineFillets	41, Osman Küçük DıetaryFıberAndWater-HoldıngCapacıtyInHorsePerformance 42, Yalçın Akbulut A MorphometrıcStudy On TheSkull Of The Hemşin Sheep 43, Nejra Hadzimusic Effect Of Specımen Storage On Some Blood ParametersInHealthyCats 44, Mustafa Kabu Amoebiasis	45, Hakan Sağsöz Localisation of someimmuneaccessorycells in thebulland ram testis andepididiymis 46, Gamze Mazı TheFıngerprınts Of Bıodıversıty “DnaBarcodıng“ 47, Hasan Çiçek Comparison of reproductiveperformanceandmilkyield of dairybuffaloanddairycattle in Turkey 48, Osman S. Terzi Theabomasumdiseaseswithouttransposition in cattleandcalves
	49, Ömer Gürkan Dilek MorphometricFeatures of MalakanHorseSkullAccordingtoGender 50, Tevhide Sel Theeffects of pregnancy on theplasmalevels of CK, AST, ALT and ALP enzymes in Arabichorses 51, Latife Çakır Bayram HıstologıcalA nd Immunohıstochemıcal Features Of A Plurıvısceral Metastatıc Mammary Carcınosarcoma In A Dog 52, İbrahim M. Polat TheEffects Body ConditionScoreChanges on EmbryonicDeathRates in Lactating KWPN Mares	53,Serhat Özgermen TheInvestigation of theStatus of FelineImmunodeficiencyVirus (FIV) andFelineLeukemiaVirus (FeLV) in Natural InfectedDomesticCats in Turkey 55, Nafiye Koç AcarineHypopi (Sarcoptiformes: Acaridae) on Alphitobiusdiaperinus (Coleoptera: Tenebrionidae) larvaefrombroilerlitter in Turkey	56, Barış Denk TheInvestigation of theEffects of Apitoxin on someHematologicParameters, Fasting Blood Glucose, Body Weight, FoodandWaterConsumption of ExperimentallyInducedDiabeticRats 58, İlknur Pir Yağcı TheEffects Of Lactatıon On ReproductıveParametersInMares 57, Mustafa Kabu Analysis of Serum Amyloid A andHaptoglobin in Calves 59, H. İbrahim Kahve LıpıdBasedChıtosanFılms
	Closing Session		
16:30-17:00	Closing remarks Announcements Closing speech		
19:00	**Gala Dinner**		
	Sunday (August 28)		
08:00-21:00	Mostar - Blagaj - Pocitelj - Konjic Tour (lunchand diner included)		
	Monday (August 29)		
09:00-12:00	Vrelo Bosne – War Tunnel (Tunnel of Life) Tour		

CONTENTS

FULL TEXT PRESENTATIONS

ORAL PRESENTATIONS

ORAL-1

FIRST ISOLATION OF *ALTERNERIA ALTERNATA* FROM A DOG IN TURKEY

MERİÇ LÜTFİ AVSEVER[a], SÜLEYHA HİLMİOĞLU-POLAT[b], İLKER ÇAMKERTEN[c]

[a] Aksaray University, Eskil Vocational School, Aksaray, Turkey
[b] Ege University, Faculty Of Medicine, Department Of Medical Microbiology, İzmir, Turkey
[c] Aksaray University, Faculty Of Veterinary Medicine, Aksaray, Turkey

lutfiavsever@gmail.com

Abstract :

Alternaria alternata, a fungus species (mold) can infect animals and people as well as being commonly found in nature. On the other hand, animals with Alternaria infection can infect other animals and people by spreading a high amount of fungal spores. In this work, *Alternaria alternata* was detected for the first time in Turkey from the skin lesions of a dog. An antifungal susceptiblity testing was carried out and treatment with itracanozole to which the agent showed susceptibility was accomplished. The aim of this work was to report the Alternaria infection in dogs in Turkey for the first time, to draw attention to the zoonotic dimension of this disease and to emphasize the importance of antifungal susceptibility tests.

Keywords: Alterneria Alternata, Anti-Fungal Susceptibility Test, Dog.

ORAL-2

DIFFERENCES IN THE FOLLICULAR MORPHOLOGY OF YOUNG AND AGED BITCHES AND THEIR CORRELATION WITH THE ANTI-MÜLLERIAN HORMONE.

ÖMER KORKMAZ[a], DENİZ KORKMAZ[a], İBRAHİM MERT POLAT[b], İLKNUR PİR YAĞCI[b], MERT PEKCAN[c], BİRTEN EMRE[a], ABUZER KAFAR ZONTURLU[a]

[a] Harran University, Faculty of Veterinary Medicine, Şanlıurfa, Turkey
[b] Kırıkkale University, Faculty of Veterinary Medicine, Kırıkkale, Turkey
[c] Ankara University, Faculty of Veterinary Medicine, Ankara Turkey

ahuramazda@harran.edu.tr

Abstract :

This study was aimed at the determination of the structural, morphological and cellular differences of follicles at the different stages of follicular development, in young and aged dogs, at the investigation of the correlation of the ovarian follicle population with the Anti-Müllerian Hormone (AMH) and at the determination of serum AMH levels in young and aged dogs.

Sixteen dogs, including eight 2-year-old young bitches, Group A and eight 8 to 10-year-old aged bitches, Group B, constituted the study material.

While the diameters of the primordial, primary and preantral follicles were found to be larger in Group B, in comparison to Group A. The difference between the two groups for secondary follicle diameter was found to be statistically insignificant. In Group A, the mean number of granulosa cells was 91.65±2.23 in the secondary follicles and 301.31±4.16 in the preantral follicles. In Group B, the same values were found to be 89.46±2.68 and 270.25±3.54, respectively. The mean serum AMH level was ascertained to be 0.233±0.046 ng/ml in Group A. The mean level was observed to be lower in Group B (0.099±0.008 ng/ml) and the difference between the two groups was found to be statistically significant ($p<0.05$).

In conclusion, the decrease observed with advanced age in the number of primordial and primary follicles, and in particular, in the granulosa cell numbers of the secondary and preantral follicles, as well as the parallel changes determined in the serum AMH levels in bitches, suggested that the AMH, which is used as a fertility parameter in humans, could also be used for the same purpose in dogs.

Keywords: Bitch, Follicular Morphology, Granulosa Cell, Anti-Müllerian Hormone.

ORAL-3

EFFECTS OF DIETARY YEAST (*SACCHAROMYCES CEREVISIA*) SUPPLEMENTATION IN DIETS OF HYBRID TILAPIA (*OREOCHROMIS NILOTICUS X OREOCHROMIS AUREUS*) DURING OVERWINTERING OPERATION

ILGIN ÖZŞAHİNOĞLU[a], SUAT DİKEL[a]

[a]Çukurova University, Feke Vocational School, Adana, Turkey

i.ozsahinoglu@gmail.com

Abstract :

A 60-day feeding trial was carried out to determine the effects of various dietary levels of brewer's yeast, *Saccharomyces cerevisiae*, in the growth performance, body composition and nutrient utilization in hybrid tilapia, *Oreochromis niloticus x Oreochromis aureus*, juveniles. Fish (0.53 ± 0.1 g) were stocked into twenty 250-L tanks (100 fish per tank; n = 3) and fed to apparent satiation three isonitrogenous (40% crude protein) and isoenergetic (4140 kcal/g) diets, formulated to contain different dried yeast levels (0% (TF), 50% (TF+Y), or 100% (Y), diet) in substitution to commercial fish feed. Fish in each tank were group weighed biweekly. Growth performances were measured as weight gain, feed conversion ratio (FCR), voluntary fed intake (VFI, g•kg−1•day−1), daily growth coefficient (DGC). At the end of the research, 100 % survival rate was observed all of the experimental trails. In addition, to this best growth rate was obtained from TF (1.42±0.08 g), and 1.20±0.10 g (TF+Y), 0.80±0.07 g (Y), respectively. Dietary dried yeast was seemingly palatable to hybrid tilapia juveniles and was suitable up to 50% inclusion to promote growth and efficient diet utilization, without affecting survival rate.

Keywords: Brewer yeast, Tilapia, Overwintering, Nutrition

ORAL-4

MATERNAL TRANSMISSION OF PORCINE CIRCOVIRUS TYPE 2 NEUTRALIZING ANTIBODIES

ZEYNEP AKKUTAY-YOLDAR[a], CHERYL M.T. DVORAK[b], MATILDA WAGNER[b], MICHAEL P. MURTAUGH[b]

[a] Ankara University, Faculty Of Veterinary Medicine, Department Of Virology, Ankara, Turkey
[b] University Of Minnesota, Department Of Veterinary And Biomedical Sciences, USA

akkutay@ankara.edu.tr

Abstract:

Porcine Circovirus Type 2 (PCV2), the causative agent of porcine circovirus associated disease (PCVAD), is widespread in the United States (US). Colostrum and milk have been shown to contain infectious virus, even in the presence of PCV2-specific antibodies. This study examined the relationship between PCV2 neutralizing antibodies in colostrum, milk, and serum from sows and piglets over time using serum and colostrum-milk neutralizing antibody assay. Samples were obtained, as appropriate, from sows (#28) and piglets (#10) in a commercial swine farm in the midwestern U.S. before and after farrowing (in day 1, 3, 12 and 19). The PCV2 50% neutralizing titers in colostrum and milk decreased from day 1 to day 19, with a mean titer of approximately 1:33,000 (maximum titer of 1:180,000) at one day after farrowing and a mean titer of 1:400 (maximum titer of 1:1,800) on day 19. Neutralizing titers in piglet serum from day 1 to 19 followed a similar kinetic curve, but did not reach the extremely high titers in colostrum and milk. The mean piglet 50% neutralizing titers at day 1 were approximately 1:8,500 with a maximum titer of 1:20,000 and at day 17-19 mean titers were 1:2,100 with a maximum titer at 1:4,100. Sow serum titers were highest before farrowing (mean 1:12,500) and on the day of farrowing were much lower (1:2,000), suggesting an active transfer of immunoglobulins from serum to colostrum. Maternally derived immunity is important to fight against infectious virus. In this study high neutralizing levels continued to be observed in both milk and in piglet serum through 19 days after farrowing, even though they decreased over time. The presence of high neutralizing antibody titers in colostrum and milk is expected to reduce infectivity of PCV2 that piglets are exposed to in the farrowing environment, thus reducing vertical transmission.

Keywords: PCV2, PCVAD, Immune Response, Neutralizing Antibodies

ORAL-5

USE OF SEMI-NESTED PCR AND RHINOSCOPY FOR THE DIAGNOSIS OF OESTROSIS

DUYGU SAYIN İPEK[a]

[a] Dicle University, Faculty of Veterinary Medicine, Department Of Parasitology, Diyarbakır, Turkey

dnsayin@hotmail.com

Abstract:

Oestrosis is a parasitic disease caused by larvae of Oestus ovis affecting the nasal cavities and adjoining sinus of sheep and goats. It is a worldwide problem, particularly in Mediterranean areas, that severely impairs the health of host animals, resulting in serious economic losses due to its impact on meat and dairy production. Here, we examine the usefulness of semi-nested PCR and rhinoscopy for the diagnosis of oestrosis in live animals. A total of 184 heads (158 sheep and 26 goats) were obtained from a slaughterhouse shortly after slaughter. Mucus samples were collected from the most caudal regions of both ventral nasal and common nasal meatuses per heads by sterile cotton swabs for molecular analysis. DNA extraction from swap samples was performed using a commercial purification kit. All the DNA extracts were exposed to a semi-nested PCR protocol to amplify a hypervariable fragment (~300bp) in the Oestrus COX 1 gene encoding the region spanning from external loop 4 (E4) to the carboxy terminal (–COOH). For rhinoscopic examination, a flexible endoscope with a tip diameter of 4.3 mm was inserted into the both nasal cavities. All heads were incised sagitally using an electric saw and examined manually in order to find Oestrus ovis larvae in the nasal-sinus cavities. Necroscopic evaluations revealed 133 sheep and 10 goat heads that were positive for oestrosis. As total 184 mucus samples, the semi-nested PCR achieved a diagnostic sensitivity and specificity of 100%. Rhinoscopic examination achieved a diagnostic sensitivity and specificity of 100% for oestrosis in goats, along with a diagnostic sensitivity of 81% and specificity of 100% in sheep. Taken together, these results strongly support the use of semi-nested PCR and rhinoscopy as useful tools for the diagnosis of oestrosis.

Keywords: Oestrosis, Semi Nested PCR, Rhinoscopy

ORAL-6

THE FUNCTIONAL ROLE OF GROWTH FACTOR RECEPTOR FAMILY AND SOME LIGANDS IN THE OROPHARYNGEAL CAVITY OF CHUKAR PARTRIDGE (ALECTORIS CHUKAR, GRAY 1830)

MEHMET ERDEM AKBALIK[a], BERNA GÜNEY SARUHAN[a], HAKAN SAĞSÖZ[a], SERKAN ERDOĞAN[b]

[a] Dicle University, Faculty Of Veterinary Medicine, Diyarbakır, Turkey
[b] Namık Kemal University, Faculty Of Veterinary Medicine, Tekirdağ, Turkey

erdem_akbalik@hotmail.com

Abstract:

Oral mucosa in the birds is exposed to intense mechanical effect due to the structural differences. It is known that mucosa is protected by both mucus barrier and various molecular factors such as growth factors. Therefore, it is thought that epidermal growth factor receptors (ErbB1-4) and some of their ligands (epidermal growth factor, amphiregulin, neuregulin1) play a key role in the proliferation and differentiation via act on cells. The aim of the study is to determine the localization of ErbB receptors and its ligands and to describe the possible role of these factors in the oropharyngeal organs of the chukar partridge.

10 healthy adult chukar partridges were sacrificed. The tissue samples (tongue, palate, pharynx and larynx) were fixed in 10% formol-alcohol for 18 h and then embedded in paraffin following routine histological procedures. Five micron thick sections were cut from the paraffin blocks and were analysed by immunohistochemistry.

The results in the partridge oro-faringeal organs demonstrated that positive expression for ErbB receptors and its ligands were observed in the nuclear, membrane and cytoplasm of the luminal epithelial cells, stromal and muscle cells, and vascular endothelial and smooth muscle cells. Conversely, the growth factor receptors and their ligands did not exist in the cytoplasm or on the membrane of the glandular epithelial cells of the organs in the oropharyngeal cavity.

It was shown that in the chukar partridge, ErbB receptors and its ligands were expressed by different cell types of the oropharyngeal organs at varying intensities. In view of their known functions, it is considered that ErbB family and its ligands induce the proliferation, differentiation, growth, survival and migration of the cells they are expressed by and also maintain the homeostasis of the extracellular matrix.

Keywords: Erbb Receptors, Tongue, Palate, Pharynx, Larynx, Immunohistochemistry

ORAL-7

PREVALENCE OF *LISTERIA MONOCYTOGENES* AT AFYON KAYMAK PROCESSING PLANT

RECEP KARA[a], SAVAŞ ASLAN[b],

[a]Afyon Kocatepe University, Faculty Of Veterinary Medicine,Department Of Food Hygiene And Technology, Afyonkarahisar, Turkey

[b]Afyon Kocatepe University, Faculty Of Medicine, Blood Bank, Afyonkarahisar, Turkey

savasaslan.aku@gmail.com

Abstract:

Listeria monocytogenes is a food-borne pathogen that is spread in a large diversity of environments. Hygiene weak points during milk processes are the main critical points for Listeria spp. contaminations. Afyon Kaymak is dairy product made from buffalo milk. The main stages of the production of Afyon Kaymak are as follows. Buffalo milk is boiled and cooled according to technical. It is well-known whole country and is consumed either breakfast or with dessert.

In this study, Afyon Kaymak processing plant samples were obtained from three different plant in central Afyonkarahisar Province, Turkey. Samples were gathered from the surfaces of each Afyon Kaymak production plant (Processing plant flor, Processing plant wall, Processing cold room flor, Processing cold room wall, cold room flor and cold room wall; total number of samples 36) equipment (Milk pasteurization vessel, cream pasteurization vessel, transport shelf, kaymak pot and knife; total number of samples 24) and workers (hands, apron, boot; total number of samples 27) As a result of sampling, A total of 87 samples were analysed for *L. monocytogenes* according to the ISO 11290-1(1996) protocol.

L.monocytogenes was detected in three samples (8.33%) at processing plant (processing cold room floor in plant A; processing plant wall and processing cold room floor in B plant.) *L. monocytogenes* was detected four equipment samples (16.66%) at cream pasteurization vessel (1) and Afyon Kaymak pot (2) in plant A; at Afyon Kaymak pot (1) in plant B. *L. monocytogenes* was not detected at workers samples in plant A, B and C. *L. monocytogenes* was not detected in anywhere plant C.

Consequently, in this case, threat possibility of *L. monocytogenes* can show for the public health in Kaymak. To minimize the risk of hazards in the Afyon Kaymak processing plant, it must be applied ''farm to fork'' principles quality management systems such as HACCP, GMP, GHP.

Keywords: Kaymak, *Listeria Monocytogenes*, Processing Plant, Equipments

ORAL-8

INTESTINAL MACROPHAGES IN THE GUT-ASSOCIATED LYMPHOID TISSUE OF THE ANGORA RABBIT

FEYZULLAH BEYAZ[a], NARİN LİMAN[a], EMEL ERGÜN[b], LEVENT ERGÜN[b], MEHMET ÖZBEK[b]

[a]Erciyes University, Faculty Of Vet. Med. Dept. Of Histology And Embryology, Kayseri, Turkey
[b] Ankara University, Faculty Of Vet. Med. Dept. Of Histology And Embryology, Ankara, Turkey

fbeyaz@erciyes.edu.tr

Abstract:

The mucosa of the gastrointestinal system is exposed to numerous potential pathogens, food-borne antigens, and commensal microorganisms throughout the life period of an animal. Intestinal Macrophages, however, display potent phagocytic and bactericidal activity, thus, efficiently preventing the systemic dispersal of potentially harmful microbes, and they efficiently scavenge apoptotic cells and foreign debris. To the authors' knowledge, no previous study exists on the structure of intestinal macrophages in the Peyer's patches (PPs), sacculus rotundus (SR) and appendix in the Angora rabbit, a breed endemic to Turkey. The presence, distribution, and localization of intestinal macrophages in PPs, SR and appendix in Angora rabbits were investigated by using anti RAM-11 immunohistochemistry and electron microscopy. The all tissues were fixed in Bouin's solution for 2 h. For RAM-11 immunoreactivity, sections were immunohistochemically stained with the avidin-biotin-peroxidase complex (ABC) method. Sections for electron-microscopic studies were fixed in glutaraldehyde-paraformaldehyde fixative. Immunohistochemical staining revealed that the rabbit intestinal macrophages in ileal PP, jejunal PP, SR, appendix and connective tissue of intestines reacted positively with RAM-11. RAM-11 positive intestinal macrophages were observed within follicle associated epithelium and subepithelial dome of lymphoid follicles in the ileal PP, jejunal PP, SR and appendix. Besides, RAM-11 positive macrophages having phagocytosed apoptotic cells were remarkably found in germinal centers of lymphoid follicles in PPs, SR and appendix. In the semithin sections, similarly immunohistochemical findings, we observed many macrophages engulfing apoptotic cells in germinal centers of follicles. Besides, some giant likely inactive macrophages were in the margins of follicles. Electronmicroscopic examination demonstrated that intestinal macrophages contained a few phagocytosed lymphocytes in their cytopylasm. According to data of our study, anti-RAM-11 primary antibodies, developed by immunization of the mice with the rabbit alveolar macrophage extract, could safely apply for determination of the intestinal macrophages in GALT of rabbits.

Keywords: Angora Rabbit, GALT, Intestine, Macrophages, RAM-11

ORAL-9

EFFECT OF PACLITAXEL AND RESVERATROL TREATMENTS ON SPERM CONCENTRATION, TESTES HISTOLOGY AND FERTILITY OF NEW ZEALAND RABBIT*

CANER ÖZTÜRK[a], MEHMET BOZKURT ATAMAN[b], HASAN HÜSEYIN DÖNMEZ[c]

[a] Aksaray University, Faculty of Veterinary Medicine, Department Of Reproduction And Artificial Insemination, Aksaray, Turkey

[b] Selcuk University, Faculty of Veterinary Medicine, Department Of Reproduction And Artificial Insemination, Konya, Turkey

[c] Selcuk University, Faculty of Veterinary Medicine, Department Of Histology And Embryology, Konya, Turkey

canerozturkvt@gmail.com

Abstract:

The aims of present study is to investigate the effects of paclitaxel (anticancer drug) and resveratrol (antioxidant) on semen concentration, testes histology and fertility of New Zealand Rabbit. Four treatment groups were used in this study. Treatment groups consisted of totally 32 male New Zealand Rabbits. The control group was administered 40 ml saline, the paclitaxel group (P) was administered 5mg/kg paclitaxel in 40ml saline, the resveratrol group was administered 4mg/kg resveratrol in 40ml saline and the paclitaxel+resveratrol group was administered 5mg/kg paclitaxel+4mg/kg resveratrol in 40 ml saline. The chemicals were given intravenously (IV) and continued once a week for 8 weeks. Totally 22 ejaculates were collected from the rabbits with the aid of an artificial vagina. The sperm concentration was determined via hemositometric method, fertility trial was made by using 32 female New Zealand Rabbit. After fertility trial, male rabbits were euthanasia. All rabbit's testes were removed and diameters of seminiferous tubules were measured.

Paclitaxel+resveratrol group (382.05 ± 68.22 x106) showed a protective effect compared to paclitaxel group (354.09±84.61x106) on sperm concentration ($P>0.05$) while resveratrol treatment (406.36±76.50x106) increase the sperm concentration significantly ($P<0.05$). Histopathologically, it was observed that treatment of paclitaxel (102.62±20.62 µm) decreased diameters of seminiferous tubules ($P<0.05$) and treatment of resveratrol (127.94±23.49 µm) prevented negative effects of paclitaxel. In terms of fertility results, no significant difference was observed among the four groups ($P>0.05$).

*The study was supported by Selcuk University Scientific Research Projects Coordination Unit (Project No: 12102013)

Keywords: Paclitaxel, Rabbit Semen, Resveratrol, Sperm Concentration, Testes Histology, Fertility

ORAL-10

THE TECHNICAL AND FINANCIAL EFFECTS OF PARENTERAL SUPPLEMENTATION WITH SELENIUM AND VITAMIN E DURING LATE PREGNANCY AND THE EARLY LACTATION PERIOD ON THE PRODUCTIVITY OF DAIRY CATTLE

TAHİR BAYRIL[a]

[a]Dicle University, Faculty of Veterinary Medicine, Diyarbakır, Turkey

tbayril@hotmail.com

Abstract:

This study aimed to determine the effects of parenteral selenium (Se) and vitamin E supplementationon economic impact, milk yield, and some reproductive parameters in high-yield dairy cows in the dry period and in those at the beginning of lactation. At the beginning of the dry period, cows (n= 323) were randomly divided into three groups as follows: Treatment 1 (T1), Treatment 2 (T2), and Control (C). Cows in group T1 received this preparation 21 days before calving and on calving day, and cows in group T2 received it only on calving day. The cows in the control group did not receive this preparation. The avarage Se serum levels on the third day after calving in groups C, T1 and T2 were determined as 73.45 µg/L, 108.79 µg/L and 98.18 µg/L). Supplementation with Se increased Se serum levels of cows treated at calving day ($p<0.05$). The average milk yields and conductivity values of the cows in groups C, T1 and T2 were found to be 33.5 kg, 36.2 kg, 36.2 kg, and 504.1, 498.5, 491.7, respectively. Differences in milk yield at all weeks and the electrical conductivity values at the 8th and 12th weeks were significant ($p<0.05$). Supplementation with Se and Vitamin E decreased the incidence of metritis (C:15.7 %, T1:5.6 %, T2:7.5 %), the number of services per conception (C:1.9, T1:1.58, T2:1.60) and the service period (C:91.7d, T1:79.1d, T2:81.6d), but had no effects on the incidence of retained fetal membrane (C:4.6 %, T1:2.8 %, T2:2.8 %). A partial budgeting analysis indicated that Se supplementation was economically profitable; cows in group T1 averaged 240.6$ per cow, those in group T2 averaged 224.6$per cow. Supplementation with Se and Vitamin E has been found to increase serum Se levels, milk yield, and has positive effects on udder health by decreasing milk conductivity values and incidence of sub-clinical mastitis.

Keywords: Selenium, Vitamin E, Milk Yield, Reproductive Parameters, Partial Budget Analysis, Dairy Cattle

ORAL-11

COMPARATIVE MACRO-ANATOMICAL AND MORPHOMETRIC INVESTIGATIONS ON SPLANCHNOCRANIUM IN GUINEA FOWLS (*NUMIDA MELEAGRIDIS*) AND TURKEYS (*MELEAGRIDIS GALLAPOVA*)

RAMAZAN İLGÜN[a],

[a]Aksaray University, Faculty of Veterinary Medicine, Aksaray, Turkey

rilgun1980@hotmail.com

Abstract:

In this study, splanchnocranial bones of guinea fowl and turkey in Numididae subfamilies of Phasianidae family was investigated comparatively to reveal significant differences. Seven guinea fowls and seven turkeys were used regardless of their gender. The ossa cranii were macerated, after five hours boiling in the water without formaldehyde and added 10% NaHCO3 and leaving 3-5 min. in the water with H2O2. Ossa cranii were prepared with carefully to examine and were measured with the compass and photographed. The splanchnocranium consisted of the ethmoidal, lacrimal, nasal, intermaxilla, maxilla, zygomatic, palatine, ptergoid, vomer, quadrate and mandible bones. The vomer bone that might not found on some avian species was significant in guinea fowl and turkeys. The length of intermaxilla, and zygomatic length between dental- articular and septum nasis vertical and horizontal diameter were measured it showed statistically significant difference in turkeys.

As a result, located in the same family of guinea fowl and turkey, it was determined that there were substantial differences between the bones forming the splanchnocranium.

Keywords: Anatomy, Guinea Fowl, Turkey, Splanchnocranium.

ORAL-12

PATHOLOGICAL AND BIOCHEMICAL INVESTIGATION OF THE SEEN DEATHS AFTER YELDİF®INJECTION PERFORMED BY THE GROWERS TO LAMBS

AHMET UYAR[a], ZABİT YENER[a], YILDIRAY BAŞBUĞAN[a], ÖMER FARUK KELEŞ[a]

[a]Yüzüncü Yıl University, Van, Turkey

uyarahmet@hotmail.com

Abstract:

Two growers in the district Başkale of Van province and Hizan of Bitlis province have reported the death of their lambs one day after injections of commercial preparations (Yeldif®) containing Se and Vit E combination. Purulent-hemorrhagic-necrotic myositis was observed in the necropsy of these two lams in the Department of Pathology. On top of that, whether the drugs caused to lamb deaths, or the application of the injection caused the death were investigated in this study. The trial period for study was planned as 1 week. 18 lambs with 2 months of age were used in this study. Lambs were divided into three groups which each have 6 lambs (control and 2 study group). The control group received 1 ml dose of drug I.M. which the same serial number from the market. The drug caused to death was injected to the first operating group (A) 1ml I.M; while the second study group (B) 3 ml I.M. (3 times more compared to the prospectus). Biochemical parameters of blood samples of the lambs were examined in prior to the application, the application day and the day after application and AST, ALT and CK levels in both A and B groups statistically significantly increased compared to the control group. Necropsies were made of animals deaths during the trial and all animals at the end of trial. During the trial, group A and the control group lambs did not show any clinical-pathologic findings. However, the gas gangrene was noticed in legs of injection side of all the B group lambs. As a result; it is thought that incorrect application and/or bacteria contaminated drug application by the growers caused the deaths of lambs. As a result, it is thought that incorrect application and/or bacteria contaminated drug application by the growers caused the deaths of lambs.

Keywords: Yeldif®, Hemorrhagic-Purulent Necrotic Myositis, Pathology, Lamb

ORAL-13

A SEROLOGICAL INVESTIGATION OF THE BOVINE HERPESVIRUS-1 (BHV-1) INFECTION IN SHEEP AND GOATS IN AYDIN AND IZMIR PROVINCES OF TURKEY

VELI ÖZGÜR ÇAĞLAV[a], NURAL EROL[a]

[a] Adnan Menderes University, Faculty Of Veterinary Medicine, Department Of Virology, Aydın, Turkey

nuralerol@adu.edu.tr

Abstract:

Bovine Herpesvirus 1 (BHV-1) is one of the viral agents causing significant economic losses in large ruminants and adversely affecting livestock production. Infection with the virus which results in the loss of meat and milk production and fertility is one biggest health problems in cattle husbandry. The infection primarily affects cattle. However, presence of infection in other ruminants as well as transmission among species is known. There are no data available on *BHV-1* infection in sheep and goats in our region. The objective of this study was to determine the serological presence and prevalence of *BHV-1* infection in sheep and goats in the Aydin and Izmir provinces.

In this study, 460 blood serum samples were collected from 128 goats and 332 sheep in small ruminant enterprises in Aydin and Izmir provinces. *BHV-1* specific antibodies in the serum samples were investigated using *Infectious bovine rhinotracheitis/infectious pustular vulvovaginitis (IBR/IPV)* Colorado strain of the virus in Virus Neutralization Tests. Antibodies against *BHV-1* were detected in 64.84% (83/128) of the goats, and in 0.60% (2/332) of the sheep. Statistical analysis showed that seropositivity in the goats and sheep were significantly different (P <0.001). 25 of the 39 (64.1%) goat samples from Izmir and 58 of the 89 (65.17%) goat samples from Aydin were seropositive.

In summary, these results suggest that BHV-1 infection is more common in goats than sheep. Goats are more susceptible to *BHV-1* infection and may play a role in epizootiology of the infection. In addition, the infection was common in both provinces. Therefore, further virological and epizootiological studies on *BHV-1* infection in goats are warranted.

Keywords: *Bovine Herpesvirus 1*, Seroprevalance, Goat, Sheep

ORAL-14

EFFECT OF SUPPLEMENTARY LIQUID COLOSTRUM ON PERFORMANCE, CERULOPLASMIN, SIALIC ACID AND SOME ANTIOXIDANT LEVELS IN QUAILS

TAHİR BAYRIL[a]

[a]Dicle University, Faculty of Veterinary Medicine, Diyarbakır, Turkey

tbayril@hotmail.com

Abstract:

This study was conducted to determine the effects of supplementary liquid-colostrum (LiqC) on performance, ceruloplasmin, sialic acid, and antioxidant levels in growing quails. In this study, a total of 90 one-day-old Japanese quail chicks were used. Quails were divided randomly into 3 groups. Chicks were fed one of three diets: basal diet or basal diet supplemented with 2.5% or 5% liquid colostrum. The average values of final body weight, live weight gain, cumulative feed intake, feed efficiency, cold carcass weight, and cold carcass yield in 3 groups were found to be 181.52g, 187.20g, 191.09g, and 133.53g, 139.79g, 146.23g, and 635.25g, 649.08g, 658.33g, and 4.76g, 4.65g, 4.50g, and 119.71g, 125.03g, 129.35g, and 65.65%, 67.72%, 69.80%, respectively. After analysis of the effect of dietary LiqC supplementation on performance, values of final body weight, live weight gain, cumulative feed intake, feed efficiency, cold carcass weight, and cold carcass yield in quails were higher in the trial groups compared to control group ($P<0.05$); organ weights were not affected ($P>0.05$). The average values of liver malondialdehyde (MDA), superoxide dismutase (SOD), total antioxidant status (TAS), ceruloplasmin, and sialic acid in groups were found as 14.53, 13.42, 12.18 µmol/ mg protein, and 24.41, 27.82, 29.63 % inhibisyon/ mg protein, and 1.40, 1.48, 1.63 mmol trolox equiv./mg protein, and 27.06, 23.26, 21.70 g/mgprotein, and 184.08, 90.04, 81.00 µg/mgprotein, respectively. Levels of liver MDA, ceruloplasmin, and sialic acid were lower, but levels of SOD were higher in trial groups ($P<0.05$), and there was no effect on TAS levels ($P>0.05$). The average values of serum MDA, SOD, TAS in groups were determined as 12.75, 11.14, 9.96 µmol/ mg protein, and 19.80, 26.97 % inhibisyon/ mg protein, 31.30, and 2.31, 2.49, 2.56 mmol trolox equiv/mg protein, respectively. When serum levels of MDA, SOD, and TAS were examined, MDA levels were lower and SOD levels were higher in trial groups ($P<0.05$). Although a numerical increase was found in TAS levels, no statistically important difference was found in trial groups.It was observed that addition of liquid colostrum to the feed mix increased slaughter weight, body weight gain, feed intake, carcass weight, and carcass yield but had no effect on organ weight. It was observed that it decreased MDA, ceruloplasmin and sialic acid levels, increased SOD levels, and had no effect on TAS levels.

Keywords: Colostrum, Performance, Ceruloplasmin, Sialic Acid, Quail

ORAL-15

APPLICATIONS OF DIFFERENT COMET ASSAY (THE SINGLE CELL GEL ELECTROPHORESIS) METHODS FOR DETECTING DNA DAMAGE IN CRYOPRESERVED FISH SPERM

BURAK EVREN İNANAN[a], NAZLI YILDIRIM[b], EKİN DEMİRKAYA[c]

[a] Aksaray University, Eskil Vocational School, Aksaray, Turkey
[b] Sıtkı Koçman University, Graduate School of Natural and Applied Sciences, Department of Biology, Muğla, Turkey
[c] Sıtkı Koçman University, Graduate School of Natural and Applied Sciences, Department of Fisheries, Muğla, Turkey

burakinanan@aksaray.edu.tr

Abstract:

Cryopreservation as an assisted reproduction method is commonly used for successful long-term storage of not only human but also animal gametes, even their embryos. Moreover, cryopreservation of sperm offers many advantages. In fish, for instance, it is useful for improving artificial reproduction, facilitating genetic manipulation, and reducing the amount of male breeder's stocks. However, after cryopreservation, sperm cell could have some problems such as loss in motility and DNA damage, leading to lower fertilization and hatching rates. The comet assay is a simple, but sensitive tool for detecting strand breaks in DNA in single sperm cells. In this study, three comet assay methods which contain different chemical agents and have different application times were carried out on fish sperm. The mixed sperm samples obtained from mature carp (Cyprinus carpio) males were used in the experiments. Firstly, using fresh sperm samples, DNA damage is classified by means of lysis solutions of each used method without H2O2 and with 12, 25 and 50 µM H2O2. Thus, DNA damage is visually scored by measuring the DNA tail of each sperm cell in fluorescent microscope images as positive control (undamaged DNA), 1, 2, and 3 classes of damage, referring from the less to more damaged sperm cells. Secondly, after thawing, cryopreserved sperm samples were applied by the comet assay methods. The results of three methods have shown no significant differences among the percentages of undamaged DNA (67.7±2.0 %, 69. 3±1.8 % and 68.2±2.8 %) and total damaged DNA (32.3±2.0 %, 30.7±1.8 % and 31.8±2.8 %) of sperm cells as. On the contrary, there were some statistical differences among the classes of damage. Consequently, all methods have been found successful in detection of undamaged and total damaged DNA but not in the recognition of the damage classes.

Keywords: Cryopreservation, Comet Assay, DNA Damage, Fish Sperm, Single Cell Gel Electrophoresis.

ORAL-16

INVESTIGATION OF RELATIONSHIP BETWEEN COAGULATION PARAMETERS AND EMBRYONIC LOSS IN EMBRYO TRANSFERRED COWS AND HEIFERS

ÖZNUR ASLAN[a], KUTLAY GÜRBULAK[b], UĞUR KARA[c], ERKAN SAY[c], ESRA CANOOĞLU[b], MURAT ABAY[b]

[a] Erciyes University, Faculty Of Veterinary Medicine, Department Of Internal Medicine, Kayseri, Turkey

[b] Erciyes University, Faculty Of Veterinary Medicine Department Of Obstetrics And Gynecology, Kayseri, Turkey

[c] East Mediterranean Agriculture Research Institute, Adana, Turkey

oznuratalay@gmail.com

Abstract:

In the study, relationship between coagulation parameters and embryonic loss in embryo transferred (ET) cows and heifers were examined. A total of 19 cows and 19 heifers from East Mediterranean Agriculture Research Institute farms in Adana, were enrolled. Blood samples were withdrawn at ET date in recipient cows and heifers. Coagulation parameters such as PT, APTT, fibrinogen, TT, AT3 and D-dimer by use of by Sysmex® CA- 7000 and activated protein C resistance, protein C and protein S by use of by Sysmex CS-5100 were analyzed. The pregnancy rate in cows and heifers were 5/18 (26.3 %) and 5/19 (26.3 %), respectively. The embryonic mortality ratio in cows was 60 % (3/5) and in heifers was 40 % (2/5). The differences of D-dimer levels between pregnant and non-pregnant animals were significant ($P<0.05$). The embryonic loss in pregnancy detected animals was 50 %. The APTT between pregnancy continued and embryonic loss groups were significantly different ($P<0.05$). To the best of our knowledge, this is the first study that reports the relationship between coagulation parameters and embryonic loss in embryo transferred cows and heifers.

Keywords: Bovine, Coagulation Parameters, Embryonic Loss, Embryo Transfer

ORAL-17

EFFECT OF SEX AND THE USAGE OF YEAST AUTOLYSATE (*SACCHAROMYCES CEREVISIAE*) IN THE DIETS ON PERFORMANCE IN JAPANESE QUAILS

MEMİŞ BOLACALI[a]

[a]Siirt University, Faculty of Veterinary Medicine, Siirt, Turkey

bolacali@gmail.com

Abstract:

This study was conducted to determine the effects of sex and dietary yeast autolysate (Saccharomyces cerevisiae; SC) on performance in Japanese quails. A total of 1000 (500 males and 500 females) quails aged 1 day were randomly allocated into one control group and four treatment groups. Each dietary group was divided into two sex groups (male and female), and each containing 5 replicate groups of 20 chicks. SC as yeast autolysate was added the basal diets at levels of 0% (control), 1%, 2%, 3% and 4%, respectively. The experimental period lasted 42 days. Control, group 1%, 2%, 3% and 4% at male and female for initial body weight (BW) of chick were 8.1 and 8.1 g, 8.0 and 8.1 g, 7.9 and 8.1 g, 8.0 and 8.1 g, 7.9 and 8.1 g, respectively. Final BW were 150.6 and 167.1 g, 152.4 and 185.7 g; 152.9 and 183.0 g, 154.4 and 184.9 g, 156.0 and 187.9 g in the same order, respectively; daily live weight gain were 3.2 and 3.6 g, 3.2 and 4.0 g, 3.2 and 3.9 g, 3.2 and 4.0 g, 3.3 and 4.0 g in the same order, respectively; daily feed intake (FI) were 13.4 and 14.9 g, 12.7 and 14.6 g, 12.3 and 13.4 g, 13.2 and 14.6 g, 14.2 and 14.7 g in the same order, respectively; feed conversion rate (FCR) were 4.24 and 4.18 g/g, 3.82 and 3.65 g/g, 3.82 and 3.42 g/g, 4.07 and 3.67 g/g, 4.33 and 3.64 g/g in the same order, respectively. Dietary treatments SC were significantly affect BW at various weeks age ($P<0.01$, $P<0.001$), live weight gain ($P<0.001$) except for male, FI ($P<0.001$), and FCR ($P<0.001$) for each sex groups. It is concluded that yeast autolysate as protein and prebiotic source can be used approximately 2% in the diets of quails form 1-d to 42-d age periods.

Keywords: Quail, Performance, Yeast Autolysate, *Saccharomyces Cerevisiae*

ORAL-18

DETERMINATION OF HERBAGE YIELD, NUTRIENT COMPOSITION OF PASTURES IN KARS DISTRICT

TUNCAY TUFAN[a], CAVİT ARSLAN[b]

[a]Siirt University, Faculty Of Veterinary Medicine, Department Of Animal Nutrition And Nutritional Disease, Siirt, Turkey

[b] Kafkas University, Faculty Of Veterinary Medicine, Department Of Animal Nutrition And Nutritional Disease, Kars, Turkey

tuncay-tufan@hotmail.com

Abstract:

This experiment was conducted to determine the herbage yield, nutrient contents of pastures in Kars district. Herbage samples were harvested from pastures on June 22, July 2, 12 and 21. Fresh herbage yields were found to be 723, 829, 824 and 599 kg/da, while dry matter yields were 193, 218, 231 and 185 kg/da, respectively, according to the harvesting date. It was found that, depending on the progression ofharvesting date, organic matter (90.71, 91.41, 91.02 and 91.61%), crude ash (9.29, 8.59, 8.98 and 8.39%), ether extract (2.63, 2.69, 3.01 and 3.03%) and nitrogen-free extract (43.98, 46.16, 45.57 and 46.79%) were not changed significantly, while crude protein (13.94, 11.67, 10.48 and 9.14%) decreased significantly ($P<0.001$), but crude fibre (30.15, 30.89, 31.96 and 32.66%), NDF (48.23, 51.40, 52.96 and 53.77%) and ADF (33.70, 35.22, 37.85 and 39.77%) increased significantly ($P<0.001$). The amounts of total organic matter obtained from the per unit field were not changed according to the progression of the harvesting date, while the amount of crude protein on the latest date was higher than those ofother dates ($P<0.05$), as well as the contents of NDF on the second and third harvesting date were higher than that of the first harvesting date ($P<0.05$). In according the production traits, it is concluded that, the nutrient contents and total nutrient amounts obtained from per unit field from 22 June to 12 July was more favourable for crude protein, while the time from June 22 to July 2 was more convenient for structural carbohydrates. However, researches are encouraged to conduct digestion studies in the future for drawing more reliable conclusions.

Keywords: Nutrient Composition, Pasture, Pasture Yield, Optimum Harvesting Date

ORAL-19

CONCENTRATIONS OF SERUM AMYLOID A, HAPTOGLOBIN, TUMOUR NECROSIS FACTOR AND INTERLEUKIN-1 AND -6 IN NEONATAL CALVES NATURALLY INFECTED WITH AMEBIASIS

MUSTAFA KABU[a], HALİT BUĞRA KOCA[b], GÖKHAN SAYBER[c]

[a] Afyon Kocatepe University, Faculty Of Veterinary Medicine, Department Of Internal Medicine, Afyonkarahisar, Turkey

[b] Afyon Kocatepe University, Faculty Of Medicine, Department Of Medical Biochemistry, Afyonkarahisar, Turkey

[c] Afyon Kocatepe University, Faculty Of Veterinary Medicine, Department Of Internal Medicine, Afyonkarahisar, Turkey

gsayber@yandex.com

Abstract:

The objective of the study was to determine levels of Serum Amyloid-A (SAA), haptoglobin (Hp), Tumor Necrosis Factor (TNF-α), and Interleukins-1 (IL-1) and 6 (IL-6) in neonatal calves with amebiasis. In this study, 50 calves between the ages of 1-4 weeks were used. 40 calves with Amebiasis which were diagnosed clinical persistent diarrhea, and 10 healthy calves were used as a control. *Entamoeba histolytica* was detected in the feces samples derived from the calves with clinical diarrhea by ELISA kit. Serum was obtained from the blood withdrawn from vena jugularis of all calves. The concentrations of SAA, Hp, TNF-α, IL-1 and IL-6 in the serum were measured with ELISA by using commercial kits. SAA (235,86±14,77 µg/ml), Hp (176,62±20,75 µg/ml), TNF-α(0,42±0,03 ng/ml), IL-1 (56,61±6,34 pg/ml) and IL-6 (28,03±2,17pg/ml) concentrations in the calves with amebiasis were found higher than the control group (SAA 9,82±1,43; Hp 11,55±1,33;TNF-α 0,16±0,02; IL-1 25,15±2,12; IL-6 17,22±2,93) ($p<0.05$). In conclusion, amebiasis in neonatal calves enhanced the increase in the concentrations of SAA, Hp, TNF-α, IL-1 and IL-6. We suggested that this condition may have occurred as a result of inflammatory response against amebiasis.

Keywords: Amebiasis, *Entamoeba Histolytica*, Calf, Serum Amyloid-A (SAA), Haptoglobin (Hp), Cytokine

ORAL-20

AN INVESTIGATION OF AQUACULTURE POSSIBILITIES OF ASIAN CATFISH (*PANGASIANADON HYPOPHTHALMUS SAUVAGE*, 1878) UNDER ÇUKUROVA CONDITIONS

ILGIN ÖZŞAHİNOĞLU[a], SUAT DİKEL[b], LEVENT SANGÜN[b]

[a] Çukurova University, Feke Vocational School, Adana, Turkey
[b] Çukurova University, Faculty Of Fisheries, Adana, Turkey
[c] Çukurova University, Adana Vocational School, Adana, Turkey

i.ozsahinoglu@gmail.com

Abstract :

This study was conducted in Çukurova University, Faculty of Fisheries, Dr. Nazmi TEKELİOĞLU freshwater aquaculture and research station. In this experiment, 480 juvenile Asian catfish *Pangasianodon hypophthalmus* with 3.20±0.30 g weight on average were split into 4 groups in triplicate and stocked in 12 tanks and 12 cages including 20 fish each. Growing parameters and all types of adaptation conditions depending on feeding frequency were investigated In two different aquaculture conditions both tank and cage. In the end of study, Feed Conversation Rate (FCR) and Specific Growth Rate (SGR) were between 1.36-2.50 and 1.13-1.50, respectively in the tanks. FCR and SGR were between 1.01-1.15 and 2.98-3.23, respectively in the cages. Chemical composition of the fish was affected by feeding frequency. It was determined that fish which were reared in cages and fed with four times feeding frequency had the highest lipid and protein contents. It is concluded that the best growth rate for Asian catfish was obtained from the fish which reared in cages and fed four times a day according to FCR and SGR values.

Keywords: *Pangasianodon Hypophthalmus*, Feeding Frequency, Growth

ORAL-21

EFFECT OF COENZYME Q10 SUPPLEMENTATION ON SPERMATOGONIAL STEM CELL DISTRIBUTION AND GERM CELL APOPTOSIS IN BISPHENOL A-INDUCED MALE RATS

ÖZAY GÜLEŞ[a], MUSTAFA YILDIZ[b]

[a] Adnan Menderes University, Aydın, Turkey
[b] Onsekiz Mart University, Çanakkale, Turkey

mustafayildiz17@yahoo.com

Abstract:

In the present study, it was aimed to investigate the antioxidant effect of the Coenzyme Q10 (CoQ10) as histochemical, immunohistochemical, biochemical and cytological against Bisphenol-A (BPA)-induced toxicity in rat testis. A total of 40 adult male Wistar rats (300-350g/90 days old) were divided into five groups. The control group did not receive any chemical. Corn oil (2 ml/kg/day), BPA (100 mg/kg/day), CoQ10 (10 mg/kg/day) as well as CoQ10 and BPA (10 mg/kg/day CoQ10 treatment 1 h before 100 mg/kg/day BPA) were administered to the sham control, BPA, CoQ10 and CoQ10-BPA groups by oral gavage for 14 days respectively. At the end of the trial, testis and sperm samples were taken to determine germ cell apoptosis, spermatogonial stem cells, testis glutathione (GSH), superoxide dismutase (SOD), catalase (CAT), malondialdehyde (MDA) levels and sperm viability (%). The testis GSH level decreased in BPA group compared to the control, control sham, CoQ10 and CoQ10-BPA groups. Moreover, the number of undifferentiated embryonic cell transcription factor-1 (UTF-1) positive cells per tubule, UTF-1 positive tubules (%) and sperm viability (%) diminished in BPA group compared to the control group. On the contrary, the testis MDA level, the average number of TUNEL-positive cells per tubule and TUNEL-positive tubules (%) increased in BPA group compared to the control, sham control, CoQ10 and CoQ10-BPA groups. As a conclusion; these findings suggested that CoQ10 has a protective role against BPA-induced testicular toxicity.

Keywords: Apoptosis, Bisphenol-A, Coenzyme Q10, Spermatogonial Stem Cell, Testis.

ORAL-22

THE EFFECT OF PROPHYLACTIC ANTIBIOTIC THERAPY ON OXIDATIVE STRESS PARAMETERS IN DOGS UNDERGOING ORTHOPEDIC SURGERY

FERAY ALTAN[a], SEMIH ALTAN[a], KAMIL UNEY[b], EBRU GOKSAHIN[c], MUAMMER ELMAS[b]

[a] Dicle University, Faculty Of Veterinary Medicine, Diyarbakır, Turkey
[b] Selcuk University, Faculty Of Veterinary Medicine, Konya, Turkey
[c] Veterinary Clinic, Istanbul, Turkey

feray.altan@dicle.edu.tr

Abstract:

The thiobarbituric acid reactive substances (TBARS), the enzymes catalase (CAT) and glutathione peroxidase (GPX) of the most important markers of oxidative stress are believed to be an integrated part of the surgical stress. The aim of this study was to determine the effect of prophylactic antibiotics therapy on oxidative stress parameters in orthopedic surgery in dogs. The study was performed on 24 dogs undergoing orthopedic surgery with age and body weight of 2.9 ± 2.1 years and 25.7 ± 6.8 kg (mean±SD), respectively. Dogs made the decision to orthopedic surgery were divided into four groups. The following treatments were used: cefazolin sodium (22 mg/kg), vancomycin hydrochloride (15 mg/kg slowly bolus, 5 minutes), cefuroxime sodium (15 mg/kg IV bolus) and clindamycin phosphate (11 mg/kg IV bolus), respectively. After the preoperative, during operation and postoperative treatments, blood samples were collected at before dosing (0 day) and 2, 6, and 24 h after the administration of drugs in groups. TBARS, CAT and GPX were analysed with ELISA in serum. Effects of surgical antibiotic prophylaxis on TBARS, CAT, and GPX are shown in Table I. Results of this study indicated a no significant difference within group in TBARS, CAT and GPX levels in dogs undergoing orthopedic surgery before and after the administration of drugs (P>0.05). In conclusion, our study showed that surgical antibiotic prophylaxis were not effected on oxidative stress parameters in dogs undergoing the orthopedic surgery.

Table I. Effects of surgical antibiotic prophylaxis on TBARS, CAT, GPX and SOD in serum.

		0.saat	2.saat	6.saat	24.saat
TBARS (µM)	cefazolin	37,65±26,73	26,50±17,86	24,82±15,16	22,28±7,90
	vancomycin	25,09±7,87	19,33±16,93	18,04±10,54	27,81±16,15
	cefuroxime	24,12±12,68	15,14±8,15	15,37±7,09	21,94±4,82
	clindamycin	19,51±9,27	15,39±3,01	21,94±6,54	21,70±10,03
CAT (nmol/min/ml)	cefazolin	22,84±35,51	18,17±15,55	18,99±11,59	9,64±6,61
	vancomycin	16,11±9,31	12,81±4,99	25,11±21,79	18,35±11,79
	cefuroxime	23,49±12,03	20,56±13,89	23,09±19,60	14,53±5,37
	clindamycin	8,15±5,03	9,13±6,14	12,99±9,00	11,63±4,27
GPx (nmol/min/ml)	cefazolin	10,00±16,26	14,13±23,48	10,05±16,11	1,66±1,64
	vancomycin	7,23±8,94	6,69±4,01	4,69±3,53	4,71±3,41
	cefuroxime	3,58±1,81	4,15±4,30	2,67±0,79	3,69±2,38
	clindamycin	2,32±0,87	4,73±3,67	3,76±2,61	5,76±6,17

No significant statistically different within group (mean ± SE).
TBARS, Thiobarbituric acid reactive substances; CAT, catalase; GPX, glutathione peroxidase.

Keywords: Prophylactic Antibiotic; Oxidative Stress; Dog; Orthopedic Surgery

ORAL-23

PREVALENCE OF *LISTERIA SPP.* IN RAW MILK AND URFA CHEESE

MUSTAFA ARDIÇ[a], HİSAMETTİN DURMAZ[b], ZEKİ ARAS[c], HALİL İBRAHIM KAHVE[a],

[a] Aksaray University, Faculty of Engineering, Aksaray, Turkey
[b] Yuzuncu Yil University, Faculty of Veterinary Medicine, Van, Turkey
[c] Aksaray University Faculty of Veterinary Medicine, Aksaray, Turkey

mustafaardic69@hotmail.com

Abstract:

The presence of *Listeria spp.* was investigated in a total of 500 samples consisting of 250 milk and 250 Urfa cheese. Samples were obtained from different markets located in Sanliurfa, Turkey between April 2008-June 2009. The Food and Drug Administration method was used for the isolation and identification of *L. monocytogenes* and other *Listeria spp*. The overall prevalence of *Listeria spp*. in milk samples was 2.8% (7/250) and in cheese samples was 5.6% (14/250). *L. monocytogenes* was isolated from 4 (1.6%) milk samples and 6 (2.4%) cheese samples. Other isolated species were *L. innocua* (0.8% from milk and 3.2% from cheese) and *L. ivanovii* (0.4% from milk). The prevalence of *L. monocytogenes* in milk and cheese samples was rather low in comparison to most previous.

studies.

Keywords: *Listeria Spp., Listeria Monocytogenes*, Milk, Dairy Products, Cheese, Urfa Cheese

ORAL-24

A SIXTEEN YEAR RETROSPECTIVE EPIDEMIOLOGICAL STUDY OF ANIMAL RABIES IN THE SOUTHEAST TURKEY (2000-2015).

METİN GÜRÇAY[a]

[a]Bingöl University, Faculty of Veterinary Medicine, Bingöl, Turkey

drmgurcay@gmail.com

Abstract:

Rabies is a lethal infection of the central nervous system caused by *Lyssavirus* of the family *Rhabdoviridae.* The virus is primarily transmitted by rabid animal bites, with multiple reservoirs depending on the region. The retrospective analysis of rabies diagnosis grapple with the period 2000-2015 to understand case spreading by animal species, temporal distribution, reservoirs in the provinces and their impact on rabies events were studied in the study. The data's of 1090 rabies diagnosed animals were used in this study. All information was supplied by the Southeast Turkey passive surveillance system, the FAT and the mouse inoculation tests were applied in veterinary regional laboratory. The positivity rate of the tested specimens was %71.83 (786/1090). There about 9.03% of the cases were in wildlife, and 90.97% were in domestic animals. Relative contributions by the all animal groups were as follows: 328 (41.73%) dogs, 279 (35.49%) cattle, 46 (5.85%) equidae, 45(5.7%) cats, and 37(4.7%) sheep-goats. An increment in the total specimens sent during the period was noted. Total 22, 26, 18 animal rabies have been reported at 2000, 2001 and 2002. However 122, 127, 119 animal rabies cases have been reported at 2013, 2014 and 2015 respectively.

Data showed that rabies infections were widespread in the Southeast Turkey. A high number of cases of rabies in dogs was implied to be dogs was the major source of animal rabies in the region. A high number of cases of rabies in cattle has a direct economic impact on the livestock industry and also represents a public health threat. The incidence of animal rabies has increased during recent years in these provinces.

Keywords: Animal Rabies, Southeast Turkey, Epidemiology.

ORAL-25

INVESTIGATION OF EFFECTS ON TIME OF AI AND PARTURITION IN THE MIDDLE ANATOLIA MERINO EWES TO THE RAM EFFECT DURING THE BREEDING SEASON

ŞÜKRÜ DURSUN[a], HASAN GÜRBÜZ[b], MEHMET KÖSE[c]

[a] Aksaray University Faculty of Veterinary Medicine, Aksaray, Turkey
[b] Konya Province Karapınar County Public Territorial Small Ruminant Breeding Project, Konya, Turkey
[c] Dicle University, Faculty Of Veterinary Medicine Department Of Obstetrics and Gynecology, Diyarbakır, Turkey

sukrudursun70@hotmail.com

Abstract:

This study was conducted to investigate the effects on the duration of AI and parturition in the merino ewes to the different application of ram effect during the year 2015 natural breeding season. Research was reliazed in the two sheep enterprises that use the same of region and pasture. On the sixth day of the study; In one of two companies, the rams was removed during six days from the flock of sheep and supplemental feeding was made. then again, the rams were joined the flock. In other company, this application wasn't done. During of the search, supplemental feeding was made. on the twelfth day of the study; First enterprise where the rams were removed and second enterprise were artificial inseminated next 14 days %83.7 (389/465) and %75.7 (782/1033), respectively. Breeding season were completed 28 and 40 days for the first and second sheep enterprise, respectively. When parturation season between enterprises was evaluated, Merino ewes in the first and second enterprises gave birth %82 (370/452) and %74 (746/1014), respectively. Parturation season of the first group was completed in 32 days (the first 14 days was more intense) and in the other group lasted for 43 days (the first 17 days was more intense).

As the result of this study, the duration of merino ewes exposed to rams (keep 6 days in flock, remove 6 days from flock and get back to the flock) in the breeding season is found to be effective on the time of inseminate and parturation ($P<0.05$).

Keywords: Merino Ewes, Natural Breeding, Sixth Day, Breeding Season, Parturation Season

ORAL-26

DETERMINATION OF MILK YIELD AND UDDER CHARACTERISTICS IN KANGAL AKKARAMAN EWES

ŞÜKRÜ DURSUN[a], BEHİÇ COŞKUN[b], ALPER YILMAZ[b], BEKİR GÖK[c], ALİ ATİK[c], İBRAHİM HALICI[c], MUSTAFA GARİP[b], NECİP KILIÇ[d], SIDDIK KESKİN[b]

[a] Aksaray University Faculty of Veterinary Medicine, Aksaray, Turkey
[b] Selçuk University Faculty of Veterinary Medicine, Konya, Turkey
[c] Bahri Dagdas International Agricultural Research Institute, Konya, Turkey
[d] Kangal County Public Territorial Small Ruminant Breeding Project, Sivas, Turkey

sukrudursun70@hotmail.com

Abstract:

In this study; lactation period, lactation milk yield, the corelation between udder structure and milk yield have been determined in Kangal Akkaraman sheep, the highest being fat-tailed native breed with the body length and shoulder height.

This study was performed in Kangal and Ulaş districts of Sivas city. In this study, a total of 120 ewes (80 singletons and 40 twins' birth) were used. Lambs at average of 30 days after birth were weighed twice daily in the morning and in the evening before suckling. Then, remaining milk in the udder was manually sucked, measured and added to the value obtained from the lambs after their weight was measured before and after suckling. This determined the milk yield of the ewes daily. When the lambs were at 60 days after birth, ewes were started to be milked with machine once daily. After this, lambs were allowed to suck their mothers once a day (between 14.00-16.00 hours), then ewes were were kept at pasture. Milk yield was determined daily with gauges measuring milk. Udder measurements were taken after each milking. At the end of the measurements, a positive correlation was determined in udder depth (UD) with daily milk yield, udder width (UW), front-rear udder height (FRUH), udder circumference and length, length and width of the teat and negative correlation between the udder type (UT), lactation period and cisterna depth between the traits.

Keywords: Kangal Akkaraman Sheep, Corelation Between Udder Structure,Milk Yield, Udder

ORAL-27

EFFECTS OF BLACK CUMIN OIL (*NIGELLA SATIVA*) ON SENSORY, CHEMICAL AND MICROBIOLOGICAL PROPERTIES OF RAINBOW TROUT DURING 23 DAYS OF STORAGE AT 2±1 ºC

MUSTAFA ÖZ[a], SUAT DİKEL[b]

[a] Aksaray University, Faculty Of Veterinary Medicine, Aksaray, Turkey
[b] Çukurova University, Adana, Turkey

ozmustafa@aksaray.edu.tr

Abstract:

In the present study, black cumin (*Nigella sativa*) oil in the rates of 0.00 % (the control), 0.10 %, 0.40 %, 0.70 %, 1.00 % and 1.30 % was added to rainbow trout feed and they were fed 144 days. After feeding process, trout were harvested and stored at 2 ± 1 º C in ice, and changes in chemical, microbiological and sensory parameters were examined periodically. According to sensory analyses, black cumin oil used in fish meat didn't cause a perceptible sensory change for all groups. Chemical analyses showed that the addition of black cumin oil to feed for fish has led to higher TVB-N (total volatile basic nitrogen) content in the fish flesh. During the storage period, the highest peroxide values (PV) was observed in the group of black seed oil added 1.0% and 1.3% and the lowest was 0.0% and 0.1% in the group added oil. The highest values in microbial count were observed in the control group.

Keywords: Rainbow Trout, Black Cumin Oil, Shelf Life

ORAL-28

NUTRITION AND GENDER EFFECT ON BODY COMPOSITION OF RAINBOW TROUT (ONCORHYNCHUS MYKISS)

MUSTAFA ÖZ[a]

[a]Aksaray University, Faculty Of Veterinary Medicine, Aksaray, Turkey

ozmustafa@aksaray.edu.tr

Abstract:

In this study, body composition was compared between farmed female, farmed male, wild female and wild male rainbow trouts; the latter escaped from farms to nature and fed natural food. The total crude protein, lipid, ash and moisture of fish meat were determined in analyses. It was found that there were big differences between body composition of cultured rainbow trout and wild rainbow trout and their male and female. While in cultured female trouts; crude protein, crude ash moisture and lipid ratios were found respectively as 19.41%, 1.78%, 73.62% and 3.73%; in cultured male trouts crude protein, crude ash moisture and lipid ratios were found respectively as 18.73%, 1.52%, 75.23% and 3.36% in wild female trouts; crude protein, crude ash moisture and lipid ratios were found respectively as 19.65%, 1.61%, 73.83% and 2.97% in wild male trouts; 19.11%, 1.39%, 75.09% and 2.53%.

In the result of this research; it was found that crude protein and lipid content of female rainbow trout were higher; but, moisture content was lower. In addition, it was determined that the body composition of rainbow trout varies according to sex and habitat.

Keywords: Wild Rainbow Trout, Farmed Rainbow Trout, Body Composition

ORAL-29

EFFECT OF EMBRYO TRANSFER TO CONCEPTION RATES IN REPEAT BREEDING CATTLES

TAHİR KARAŞAHİN[a], ŞÜKRÜ DURSUN[a], SEDAT HAMDİ KIZIL[b], MUHARREM SATILMIŞ[b], NUMAN AKYOL[c]

[a] Aksaray University, Faculty Of Veterinary Medicine, Aksaray, Turkey
[b] Lalahan Livestock Central Research Institue, Ankara, Turkey
[c] Kırıkkale University, Faculty Of Veterinary Medicine, Kırıkkale, Turkey

tahirkarasahin@gmail.com

Abstract:

The objective of this study was to investigate the effect of embryo transfer to conception rates in repeat-breeding cattle. Embryos from superovulated donors were vitrified before transfer. The vitrification procedure was based on the treatment of the embryos first with vitrification solution1 (VS1: 0.1M sucrose + 0.1M xylose + 1% PEG + 10% glycerol) and then with VS2 (0.2M sucrose + 0.2M xylose + 2% PEG + 10% glycerol + 10% ethylene glycol), each for 5 minutes, followed by treatment with VS3 (0.3M sucrose + 0.3M xylose + 3% PEG + 20% glycerol + 20% ethylene glycol) for 1 minute. Subsequently, the embryos were aspirated into straws, and plunged directly into liquid nitrogen for freezing. Vitrified embryos were transferred to 32 recipients that had not conceived after 3 or more artificial inseminations. The embryos were transferred to the recipients on the seventh day of estrous. Embryo transfer was performed by removing the straws from liquid nitrogen, keeping them first in air for 5-6 seconds and then in water at 20 ºC until completely thawed, for 10 seconds. The embryos were devitrified first in 0.5M sucrose solution for 5 minutes and secondly in 0.25M sucrose solution for another 5 minutes. Devitrified embryos were transferred into PBS solution containing 20% CS. The embryos were transferred to the recipients, cornu uteri confirmed to have a corpus luteum. The examination of the recipients for pregnancy was performed 60 after embryo transfer by rectal palpation. Pregnancy rates were compared by the Chi-square test. The conception rates achieved with the transfer of embryos to repeat-breeding recipients (28,13%) significantly ($P<0.001$). suggested that embryo transfer may be an alternative in the treatment of repeat breeding.

Keywords: Repeat Breeder, Cattles, Embryo Transfer, Vitrification

ORAL-30

MARBOFLOXACIN ASSOCIATED HYPERSENSITIVITY AND ALOPECIA IN CATS

İLKER ÇAMKERTEN[a], KEREM URAL[b], DENIZ ALIÇ URAL[c], ALİ EVREN HAYDARDEDEOĞLU[a]

[a] Aksaray University, Faculty Of Veterinary Medicine, Department Of Internal Medicine, Aksaray, Turkey

[b] Adnan Menderes University, Faculty Of Veterinary Medicine, Department Of Internal Medicine, Aydin, Turkey

[c] Adnan Menderes University, Faculty of Veterinary Medicine, Faculty Farm, Aydin, Turkey

ilkercamkerten@hotmail.com

Abstract:

In this case series, 6 cats (at the age of 4 to 16 months) were presented with hypersensitivity following accidental high dose marbofloxacin administration, was discussed. On initial referral to private veterinary clinics, signs of upper respiratory disease or gastrointestinal disorder were evident, requiring antibiotic therapy and marbofloxacin (10 to 15 mg/kg) was prescribed for at least 1week.

During treatment there was alopecia (mainly in periocular region, n=4), and mild urticaria (n=6) existed. Meanwhile, patients were transferred to the present authors' practice in different cities. Dermatological examination revealed poor, dry, and brittle coat with pruritic, diffuse, bilaterally symmetrical alopecia in all cats. A probable diagnosis of marbofloxacin hypersensitivity related to an over dose was made based on clinical examination, excluding other relevant etiology.

The drug was discontinued, mepyramine maleate and H vitamin were prescribed solely to all cases.

At the time of writing the cases were doing well, with partial alopecia (n=2)., whereas other cases recovered. Veterinary surgeons must be aware of side effects regarding marbofloxacin administration.

Keywords: Marbofloxacin, Alopecia, Cats

ORAL-31

INJECTABLE ANTHELMINTIC MEDICINE (RICABENDAZOL) EFFECT ON NATURALLY INFECTED KILIS'S GOATS.

ALİ EVREN HAYDARDEOĞLU[a], GÜZİN ÇAMKERTEN[b], DENİZ URAL[c], AHMET GÖKÇEN[d], İLKER ÇAMKERTEN[a], KEREM URAL[e]

[a] Aksaray University, Faculty Of Veterinary Medicine, Department Of Internal Medicine, Aksaray, Turkey

[b] Aksaray University, Vocational School of Technical Sciences, Aksaray, Turkey

[c] Adnan Menderes University, Faculty Of Veterinary Medicine, Faculty Farm, Aydin, Turkey

[d] Mehmet Akif Ersoy University, Faculty Of Veterinary Medicine, Department Of Parasitology, Burdur, Turkey

[e] Adnan Menderes University, Faculty Of Veterinary Mediceine, Department Of Internal Medicine, Aydın, Turkey

ilkercamkerten@hotmail.com

Abstract:

In the present study, the concentrations of Serum Cu (Copper), Zn (Zinc), Mn (Mangan), cobalt (Co), iron (Fe) were measured before and after treatment in goats with mixed gastrointestinal infections of nematodes. Seventeen cases, were diagnosed with mixed helminth infection following detection of Trichuris spp., Trichostrongylidae spp. enrolled in this study. Animal material of the study involved goats from a private enterpreneurship composed of 13 Kilis goats, at the age of 2-3 years, weighing 30-45 kg in a private farm in Gaziantep. Parasitological examination of stool samples withdrawn directly from the rectum of the goat was performed by McMaster flotation technique. Blood samples were withdrawn on day 0. Goats were treated with enjectabl antihelmintic ricabendazol (Rizal – Sanovel). The concentrations of the Co and Fe were significantly higher and lower ($p<0.05$), respectively in the goats before and after treatment, respectively. As a result of this study, the present authors' determined that enjectabl ricabendazol is effective the treatment of mixed helminth infection in goats (95,71%).

Keywords: Ricabendazol, Kilis's Goat, Anthelmintic

ORAL-32

THE MACROANATOMY OF THE SACRAL PLEXUS IN BUZZARD (*BUTEO BUTEO*)

YALÇIN AKBULUT[a]

[a] Kafkas University, Faculty Of Medicine, Kars, Turkey

azygos_1453@hotmail.com

Abstract:

The sacral plexus, the lumbal plexus and the pudendal plexus establish the innervation of leg, pelvis and tail in poultries. The sacral plexus is linked to the lumbal plexus via *n. furcalis*, and to the pudendal plexus through *n. bigeminus*. The sacral plexus is constituted through the union of ventral branches of six synsacral spinal nerves in poultries. The thickest nerve forming the sacral plexus is *n. ischiadicus*. Totally five adult the Buzzard (*Buteo buteo*), two of them were male and three were female, obtained from the Wildlife Rescue and Rehabilitation Center of Kafkas University were used in this study. It was detected that the sacral plexus was formed by ramus ventralis of six synsacral spinal nerves ramus. Moreover, it was determined that the nerves, constituting the sacral plexus, also formed the roots of *truncus cranialis*, *truncus medianus* ve *truncus caudalis* in *fossa renalis*. Five branches were specified as having segregated from *n. ischiadicus*; *n. cutaneusfemoralis caudalis*, the mutual root of *n. peroneus* with *n. tibialis, rr. musculares, n. coxalis caudalis* and *r. muscularis*. It was observed that the sacral plexus was linked to the lumbal plexus by *n. furcalis*, to the *pudendal plexus via n. bigeminus*. Consequently, the nerves, participating the formation of the sacral plexus in Buzzard, and the areas innervated by these nerves were revealed. Moreover, the anatomica structure of the sacral plexus of Buzzard was compared to other birds. It is thought that all these data would contribute to anatomy of Buzzard and especially the surgical operations to be done in wildlife protection centres related to region.

Keywords: Sacral Plexus, Buzzard, Macroanatomy

ORAL-33

EFFECTS OF PROCINETIC DRUGS ON SOME BLOOD PARAMETER IN LAMBS WITH POSTOPERATIVE ILEUS

SEMİH ALTAN[a], FERAY ALTAN[b], KAAN DÖNMEZ[c], FAHRETTİN ALKAN[c]

[a] Dicle University, Faculty Of Veterinary Medicine, Department Of Surgery, Diyarbakır, Turkey

[b] Dicle University, Faculty Of Veterinary Medicine, Department Of Pharmacology And Toxicology, Diyarbakır, Turkey

[c] Selçuk University, Faculty Of Veterinary Medicine, Department Of Surgery, Konya, Turkey

semih.altan@dicle.edu.tr

Abstract :

A variety of techniques and drugs in the treatment of postoperative ileus (PI) cases are used both veterinary and human medicine. In ruminants, the use of prokinetics is very limited and efficacies of the most of them has not been proven yet.

The aim of this study was to identify as comparatively the most suitable prokinetic agent for ruminant to be determined effects of on acute phase proteins, oxidative stress parameters and cytokine levels, implementation of prokinetics drugs in experimental PI cases on lambs.

Study was done on 30-45-day age 20 healthy lambs. Enterotomy on the ileum was performed in all groups. Then lambs were allocated into four groups. In first group, any drugs were not given before or after the operation (control group). Erythromycin (8.8 mg/kg IM); lidocaine (1.3 mg/kg IV) and metoclopramide (0.2 mg/kg IV) were administered just before operation, respectively. Blood samples were taken preoperative, postoperative (0 value), 1, 3, 5, 10, 24, 48, 72 and 96. hours. Serum amyloid A, haptoglobin, fibrinogen, TBARS, myeloperoxidase and TGF-Beta levels were measured with ELISA.

Serum haptoglobin, serum amyloid A and fibrinogen levels was elevated in the 3rd groupwhile the serum TGF level was determined to be higher in groups 3 and 4. TBARS levels was more higher especially in group 3, myeloperoxidase levels were seen at similar in all groups except for in group 4 elevated 96 hours.

According to study, it was thought that Inflammation was continued mainly lidocaine (group 3) and metoclopramide administered groups (group 4) and, therefore, recovery was slower in this groups. As a result, it was concluded that Erythromycin is more effective than lidocaine and metoclopramide which used prevention of ileus in gastrointestinal surgery in the lambs depending on the relationship between inflammation and PI.

Keywords: Postoperative Ileus, Acute Phase Proteins, Oxidative Stress And Cytokine

ORAL-34

THE EFFECT OF *CORYNEBACTERIUM CUTIS* LYSATE ON THE LEVEL OF COLOSTRUM IMMUNOGLOBIN-G IN PREGNANT HEIFERS VACCINATED AGAINST NEONATAL CALF DIARRHOEA

VEHBİ GÜNEŞ[a], HÜSEYİN ÇALIK[a],

[a]University Of Erciyes, Faculty of Veterinary Medicine, Kayseri, Turkey

vgunes@erciyes.edu.tr

Present study aimed to investigate the effect of commercial *Corynebacterium cutis* Lysate injections on immunoglobin G (IgG) levels of heifers vaccinated with a trivalan vaccine. Study consisted of 30 clinically healty Holstein heifers. The animals were randomly divided into 3 groups and injected on last 6th and 3th weeks of pregnancy. While isotonic saline solution was injected to Group I , 2 mL of a commercial trivalan vaccine containing inactive *Rota* and *Coronavirus* antigens and inactive enteropathogenic *E.coli* 3 serovar - was given intramuscularly to Group II. Furthermore,, *Corynebacterium cutis* lysate injection was concurrently carried out to Group III. Colostrum samples were immediately collected after the birth. Blood samples were also gathered from coccygeal vein before the injections and on the day of the birth in heifers. A commercial ELISA kit was deployed to determine IgG levels in serum and colostrum. Mean level of IgG levels in heifers (Group II), which were exposed to only vaccine (36,69 ± 17 mg/ml), was statistically higher than that of control heifers (16,40 ± 8,68 mg/ml) on the last 3th week of pregnancy and the day of the birth. However, mean value of IgG levels in Group III (81,06±48,27 mg/ml) was significantly higher than those of other groups on the last 3th week of pregnancy. Mean score of IgG levels on the day of the calving showed no difference between Groups II (90,01 ± 63,45 mg/ml) and III (100,59 ± 56,05 mg/ml). Further, mean value of IgG levels in Group III of colostral samples (38,25 ± 3,66 mg/ml) was statistically higher than those of Groups I (16,23 ± 3,72 mg/ml) and II (25,09 ± 5,98 mg/ml). It can be concluded that *Corynebacterium cutis* Lysate with a calf diarrhoea vaccine cause a significant increase at IgG levels in serum and colostrum of pregnant heifers.

Keywords: Calf, *Corynebacterium cutis* lysate, Colostrum, Heifer, Vaccine

ORAL-35

MILK AND MILK CELL VITAMIN C LEVELS IN SUBCLINICAL MASTITIC COWS

PINAR PEKER AKALIN[a], YAŞAR ERGÜN[b], NURİ BAŞPINAR[c], GÖKHAN DOĞRUER[b], ALTUĞ KÜÇÜKGÜL[a], ZAFER CANTEKİN[d], MUSTAFA İŞGÖR[a], MUSTAFA SARIBAY[b], AYHAN BAŞTAN[e], ECE KOLDAŞ[b], SEÇKİN SALAR[e], İSHAK GÖKÇEK[b]

[a] Mustafa Kemal University, Fac. of Veterinary Medicine, Dep. of Biochemisty, Hatay, Turkey
[b] Mustafa Kemal University, Fac. of Veterinary Medicine, Dep. of Obst. And Gyne. Hatay, Turkey
[c] Selcuk University, Fac. of Veterinary Medicine, Dep. of Biochemistry, Konya, Turkey
[d] Mustafa Kemal University, Fac. of Veterinary Medicine, Dep. of Microbiology, Hatay, Turkey
[e] Ankara University, Fac. of Veterinary Medicine, Dep. of Obs. And Gyne., Ankara, Turkey
[f] Mustafa Kemal University, Fac. of Veterinary Medicine, Dep. of Physiology, Hatay, Turkey

pinarpekerakalin@gmail.com

Abstract:

In this study, it was aimed to determine the levels of Vitamin C in milk and milk cells of subclinical mastitic cows. Somatic cell count was determined in the quarter milk samples of all animals and the groups were scored as control (1-87 x 103 cells), mastitic 1st group (154-380 x 103 cells), 2nd group (418-812 x 103 cells), 3rd group (914-1928 x 103 cells) and 4th group (2614-8050 x 103 cells) (n=12). Milk serum and milk cell Vitamin C levels were determined and the correlation between Vitamin C levels and somatic cell count were evaluated. Also microbiological diagnosis was conducted. In subclinical mastitic milk cells, Vitamin C levels (µg/106 cell) were lower compared to control group ($p<0,001$) and positive correlation was determined between milk cell Vitamin C levels and somatic cell count ($r=0,469$, $p<0,001$ $n=60$). As regards milk serum, Vitamin C levels were lower in the 4th group compared to the other mastitic ($p<0,05$) and control groups ($p>0,05$). There was a negative correlation between milk serum Vitamin C levels and somatic cell count ($r=-0,420$, $p<0,01$ $n=60$). No correlation was observed between microorganisms and Vitamin C levels. In conclusion, it was found that somatic cell count was gradually elevated with the mastitis levels, Vitamin C levels per cell and in milk serum decreased in mastitis. It was also found that there was a correlation between Vitamin C levels and mastitis.

Keywords: Sublinical Mastitis, Vitamin C, Somatic Cell Count

ORAL-36

INVESTIGATION OF SEROPREVALENCE OF *TOXOPLASMA GONDII* IN CATTLE IN SIIRT PROVINCE

ÖZGÜR YAŞAR ÇELİK[a], DUYGU NEVAL SAYIN İPEK[b], BURÇAK ASLAN ÇELİK[a], KIVANÇ IRAK[a], GÜLŞAH AKGÜL[a]

[a] Siirt University, Faculty Of Veterinary Medicine, Siirt, Turkey
[b] Dicle University, Faculty Of Veterinary Medicine, Diyarbakır, Turkey

oyc@siirt.edu.tr

Abstract:

Toxoplasmosis is an important parasitic disease with zoonotic characteristics which is brought by *Toxoplasma gondii*, quite common throughout the world and observed in all mammals including people, poultry and reptiles. This study was carried out in order to determine *Toxoplasma gondii* seroprevalence among cattle in Siirt province of Turkey.

During the study blood sample was taken from 300 cattle at different race and age. Samples were centrifuged for 10 minutes in 3000 cycle and serums were transferred to eppendorf tubes and stored at -20oC until they are used. Detection of Anti-*Toxoplasma gondii* antibodies in serum samples was done with ELISA kit (ID Screen® Toxoplasmosis Indirect, kit multi-species, IDVET). The study was carried out with ELISA method according to the suggestions of business firm.

As a result of the study, 53 (18%) of samples were determined as seropositive and 247 (8.2%) were determined as seronegative. The difference between average age of group was found statistically significant ($p<0.05$). The difference between race and gender was found to be statistically insignificant ($p>0.05$)

Keywords: Cattle, *Toxoplasma gondii*, Seroprevalence, ELISA, Siirt

ORAL-37

RAPID IDENTIFICATION OF COAGULASE NEGATIVE *STAPHYLOCOCCUS* ISOLATES FROM MASTITIC MILK BY RFLP ANALYSIS OF PCR-AMPLIFIED GROEL GENE (HSP60)

SAFİYE ELİF KORCAN[a], BEYTULLAH KENAR[b], SEVİM FEYZA ERDOĞMUŞ[c]

[a] Uşak University, Faculty of Science and Literature, Biology Department, Uşak, Turkey
[b] Afyon Kocatepe University, Faculty of Veterinary Medicine, Afyonkarahisar, Turkey
[c] Afyon Kocatepe University, Technical Vocational School, Afyonkarahisar, Turkey

bkenar@aku.edu.tr

Abstract:

The aim of this study was to evaluate of reliability the technique of restriction fragment length polymorphism (RFLP-PCR) of *groEL* gene for Coagulase Negative *Staphylococcus* (CNS) of animal origin. For this reason, 47 CNS species were identified by the API Staph test kit. Genotypic characterization, based on RFLP-PCR of the *groEL* gene, was performed on 20 CNS isolates. The most commonly identified CNS species were *Staphylococcus epidermidis* 21(44,7%) and *Staphylococcus haemolyticus* 11 (23,4%) followed by *Staphylococcus xylosus* 7 (14,9%). According to PCR-RFLP profiles, 5 different species were identified: *Staphylococcus cohnii, Staphylococcus epidermidis, Staphylococcus haemolyticus, Staphylococcus hyicus and Staphylococcus xylosus*.

In conclusion, PCR-RFLP of the groEL gene is a potentially precious assay for accurate molecular identification of CNS species. Most of the commercial identification systems are not designed to identify veterinary pathogen. This method must be developed for CNS of animal origin.

Keywords: Coagulase Negative *Staphylococcus* (CNS), *groEL* gene, PCR-RFLP, bovine subclinical mastitis

ORAL-38

EVALUATION AS CLINICAL, HISTOPATHOLOGICAL AND IMMUNOHISTOCHEMICAL OF DIFFERENT TREATMENT METHODS IN BOVINE CUTANEOUS PAPILLOMATOSIS

PELİN FATOŞ POLAT[a], NIHAT YUMUŞAK[b], HİKMET ÜN[c], GÜRBÜZ AKSOY[a]

[a] Harran University, Faculty Of Veterinary Medicine, Department Of Of Internal Medicine, Şanlıurfa, Turkey

[b] Harran University, Faculty Of Veterinary Medicine, Department Of Pathology, Şanlıurfa, Turkey

[c] Aksaray University, Faculty Of Veterinary Medicine, Department Of Virology, Aksaray, Turkey

pelin_polat@harran.edu.tr

Abstract:

The aim of this study evaluation as clinically, histopathologically and Immunohistochemically of results of different treatment methods in bovine cutaneous papillomatosis. For this purpose; 72 cattle were used which detected cutaneous papilloma. Group 1 (Autohemotherapy) were applied 20 cc blood to subcutan and tumor stem which were taken from jugular vein. Group 2 (Heterologous vaccine) it was performed subcutan 20 cc vaccine which was prepared according to the literature. Grup 3 (Levamisole) was used 3mg/kg by orally. Group 4 (Control) A tumor growth was observed without treatment. All treatments were performed 1 time per week for 4 weeks. Tumors before each application were measured and recorded with a digital caliper and it was taken tumor tissues samples and detected in 10 % formaldehyde solution and prepared for histopathological examinations with Hematoxylin-Eosin staining and labeded with PCNA, Ki67 and monoclonal- BPV antibodes for immunohistochemistry. Reduction of tumors were observed in all groups clinically since 2 weeks. Following the last application; size of tumors in the levamisole group was smaller, Heterologus vaccine and autohemotherapy group were followed, in control was limited. Histopathologically; the reduction of acanthosis, vacuolar degeneration, hyperkeratosis and hyperplasia at the stratified squamous epithelium; was evident in the levamisole group. Heterologus vaccine and autohemotherapy group were following the levamisole group. Immunohistochemically; PCNA and Ki67 were noticed to be parallel with histopatological findings at the determining proliferation. The amount of virus to levamizole Group significantly decreased during the study in the determination virus with BPV antibody, the presence of virus was found in some sections in the other groups at the end of work. In conclusion, levamisole were significantly effective at the treatment of cutaneous papillomas in cattle which caused by papilloma virus, while heterologous immunization has a slight effect and autohemotherapy were not efficient that much.

Keywords: Bovine Cutaneous Papillomatosis, Histopathology, Immunohistochemistry.

ORAL-39

THE ANATOMIC AND MORPHOMETRIC EXAMINATION OF STIFLE JOINT IN WILD PIG

İSHAK DOĞAN[a], SEVİNÇ ATEŞ[a]

[a]Mustafa Kemal University, Faculty of Veterinary Medicine, Hatay, Turkey

sevinc_ates2006@hotmail.com

Abstract:

It requires good knowledge of structures forming the stifle joint since its functions. Researchers have performed many studies on humans and different animal species to put forward the structure of this joint. Domestic pig was also investigated in this duration, but no similar research was performed on the wild pig. So with this study it was aimed to contribute to the lack of information by putting forward the anatomic and morphometric features of the stifle joint of the wild pig.

Eight stifle joints of four wild pig were fixated with %10 formalin were used. For this purpose, stifle joints were dissected and the bones, the meniscus and the ligaments of the stifle joints were investigated.

The diameter of trochlea ossis femoris was 45- 50 mm, and the width of the patellar groove was 16 - 20 mm. Labium laterale and mediale was almost at the same size, and they ended narrowing on their caudal end where they met the condylus. The medial condyle was a little sharp on the cranial end and continued expanding through caudal ending stubby. Condylus lateralis was observed as a typical cylinder. It was determined that the lateral condyle of the tibia was trapezoid, medial condyle was triangular. Besides the lateral intercondylar eminence was higher according to the medial one. Patella had a basic ovoid shape. Both meniscuses seemed like “C” letter, but the medial meniscus had closer ends comparing with the lateral meniscus.

It was aimed to compare the results with the results of the domestic pig and other animal species. Besides the possible differences which might be seen will be evaluated in a cause and effect manner which are thougt to be contributed to the studies of the diagnosis and treatment of stifle joints problems.

Keywords: Ligaments, Meniscus, Stifle, Wild Pig

ORAL-40

THE MORPHOLOGY OF THE INTERVENTRICULAR STRUCTURES OF THE HEART IN 80-DAY-OLD WILD PIG FETAL SIBLINGS

LUTFİ TAKÇI[a], SEVİNÇ ATEŞ[a], FEYZA BAŞAK[a], YEŞİM AKAYDIN BOZKURT[a], TOLUNAY KOZLU[a]

[a]Mustafa Kemal University, Faculty of Veterinary Medicine, Hatay, Turkey

lutfi_takci@hotmail.com

Abstract:

There has been various studies on human and many animal species which the macro and micro structure of the heart was put forward, but no detailed morphological study was seen on wild pig fetuses. Consequently, this study was thought to contribute to the lack of information in this field.

A number of 7 heart of 80 days old wild pig fetal siblings were used after fixating with 10% formaldehyde. After dissection and photographing processes, routine histological procedure was applied, 5µm thick sections were taken from the paraffin blocks and they were stained with Mallory's Modified Triple Stain technique to show the general histologic view.

In all the hearts examined it was found out that tricuspidal valve was composed of three folia- cuspis septalis, cuspis angularis and cuspis parietalis. Bicuspidal valve was composed of two folia-cuspis septalis and cuspis parietalis. In the right ventricle, one anterior papillary muscle located in the outer wall, one septal papillary muscle and 1-2 numbers posterior papillary muscles located in the septal wall were seen. In the left ventricle, one subauricular papillary muscle and one subatrial papillary muscle located in the outer wall were seen. Trabecula septomarginalis was observed in all right ventricles but not in the left one.

On the transversal sections taken from the atrioventricular line of the heart, purkinje cells were seen in the subendocard of the wall of the left ventricle. In the lateral sections which were obtained via embedding the heart by its long axis, atrioventricular bundle and Purkinje cell bunches were seen in the subendocard of the septal wall of the left ventricle. Periarterial purkinje cells were also seen in these sections.

Consequently it was determined that, all the structures identifying the heart were seen in 80 days old wild pig fetal siblings.

Keywords: Anatomy, Fetus, Heart, Histology, Pig

ORAL-41

AN OVERVIEW ON OXIDATIVE DAMAGE AND ANTIOXIDANT MECHANISM IN DIFFERENT CASES

NAZLI ERCAN[a]

[a] Cumhuriyet University, Sivas, Turkey

nazliercan@yahoo.com

Abstract:

In the organism, the immune system and the free radicals which are composed in various ways are in a balance. Nevertheless, in cases which free radicals are not cleaned enough from the organism, they cause oxidative damage. This damage might cause metabolic diseases, cancer an even modification in the structure of DNA which is a genetic material.

The abnormal rise of this damage and its products and antioxidant system's inadequacy which is the immune/defense mechanism affects even non-functionality, defect/irregularity in structure and thus diseases and heritable damages that might be formed in the organism.

This study analyzes oxidative damage and antioxidant metabolism evaluations in different cases which are conveyed in veterinary medicine. In the studies examined, it is observed that diseases are related to oxidative damage indicators and its levels progress with the diseases. Although it is seem that the same diseases bear varied results in different diseases. Each new study which will examine the oxidative damage and antioxidant mechanism might be regarded as guidance in the pre-symptomatic stage.

By relating oxidative damage and antioxidant mechanism with various cases and diseases in Veterinary Medicine, it will be inevitable to understand diseases at molecular stage, there will be factors supporting diagnosis and treatment.

Keywords: Oxidative Stress, Antioxidant Enzymes, Veterinary Medicine

ORAL-42

MORPHOLOGY OF THE SPINAL CORD IN 80 DAYS OLD FETUSES OF WILD PIG

İBRAHİM KÜRTÜL[a], SEVİNÇ ATEŞ[b], LUTFİ TAKÇI[b], YEŞİM AKAYDIN BOZKURT[b], TOLUNAY KOZLU[b]

[a] Karabuk University, Karabük, Turkey
[b] Mustafa Kemal University, Hatay, Turkey

kurtul1995@hotmail.com

Abstract:

This observation focused on revealing morphological development of the spinal cord in 80 days old fetuses of the wild pig.

Spinal cords of the 7 fetuses fixed with 10% formaldehyde solution were observed via dissection, and the samples were stained histologically applying Crossman's modified triple stain technique.

The lengths of the spinal cords were 148-152 mm, and they extended through the caudal edge of the 1st caudal vertebra (Ca1). All the segments of the spinal nerves including 8 cervical, 14 thoracic, 5 lumbar, 3 sacral and 1 caudal, were determined bilaterally. The cervical intumescence was formed by the 6th cervical through 1st thoracic ventral spinal nerves while the lumbar intumescence was established by the 3rd lumbar through 1st sacral ventral spinal nerves. Histological observations showed that the dorsal median sulcus, the ventral median fissure and the central canal were present eminently. The dorsal and ventral horns were distinguishable at the cervical, thoracic and lumbar regions while they were undetermined at the sacral and caudal segments. The horn differentiation at the caudal segment was made through localization of the somatomotor neurons and other histological peculiarities. The neurons at the sacral segment showed no particular localization. The central canal was located more ventrally at the sacral and caudal segments. The lateral horn was eminent at the lumbar segment while indistinct at the thoracic region. Overall, the status of the spinal cord in the vertebral column, ''ascendens medullae spinalis'', and its histological appearances were observed in the 80 days old fetuses of the wild pig.

Keywords: Development, Spinal Cord, Wild Pig

ORAL-43

THE RESPONSE OF TWO COMMERCIAL LAYING HEN STRAINS TO AN INDUCED MOLTING PROGRAM

MEHMET YARDIMCI[a], İSMAİL BAYRAM[b]

[a] Namik Kemal University, Faculty Of Veterinary Medicine, DepartmentOf Animal Science, Tekirdağ, Turkey

[b] Afyon Kocatepe University, Faculty Of Veterinary Medicine, Department Of Animal Nutrition, Afyonkarahisar, Turkey

ibayram1965@yahoo.com

Abstract:

This research was conducted to compare the performance results of two laying hen strains to an induced molting program by feed withdrawal. Lohman and Brown Nick strains were used in this study with a production capacity of 78.7 and 68.2% at 72nd week of a rearing period. Briefly, feed was replaced with mosaic for 10 days, followed by supplementing barley gradually containing 1-1.5% mosaic for the next 10 days. The treatment resulted in total cessation of egg production within 14 days for Lohman and 28 days for Brown Nick while the birds remained out of production. The rate of egg production was significantly improved by force molting treatments when compared with their 2 weeks period (72-73rd week) of the commencement of treatments. Egg production period for Lohman hens was shorter than that of Brown Nick which resulted in lower yield in total. Return to pre-molt status was similar in both groups; however menarche time varied between strains. Post-molt menarche and return to pre-molt status had occurred on day 21 for Lohman and day 5 for Brown Nick. Post-molt hen-day production peaks were at 86th week for Lohman with an 88.8% yield and 83rd week for Brown Nick with 75% yield. Brown Nick produced more cracked eggs between 75th and 83rd weeks of the experiment while Lohman produced more cracked eggs than that of Brown Nick did during the other periods. Mortality, was evidently high in both groups during the molting period. However, throughout the study, mortality for both molting groups was within the expected range. As a result, Brown Nick performed better than Lohman in terms of egg production, post molt-menarche time, cracked eggs while Lohman was better in terms of post molt hen-day peak and mortality figures.

Keywords: Brown Nick,Egg Production,Lohman,Molting, Feed Withdrawal

ORAL-44

ECONOMIC IMPACT OF DIGITAL DERMATITIS TREATMENT IN A DAIRY FARM: AN APPLICATION OF BREAK-EVEN ANALYSIS

İBRAHİM AKIN[a], TUĞBA AKIN[b]

[a] Adnan Menders University, Faculty Of Veterinary Medicine, Department Of Surgery, Aydın, Turkey

[b] Adnan Menderes University, Faculty Of Economics And Administrative Sciences, Department Of Economics, Aydın, Turkey

ibraak@adu.edu.tr

Abstract:

Lameness in dairy cows is mainly considered in animal welfare problem and economic loss in dairies. The compensation of treatment cost is an economic burden for dairies. This study aimed to evaluate the economic efficiency of the treatment of digital dermatitis (DD) on milk yield in lame dairy cows.

Total 33 Holstein dairy cows with lameness caused by DD were enrolled in the study from a commercial dairy farm in Aydin, Turkey. Until DD lesions cured, bandages were applied as a treatment and changed on weekly. During healing period, treatment costs (includes veterinarian and bandage fees) and milk prices (per liter) were compared.

Milk yields were achieved from computer records and considered at four measurements: 1st beginning day milk production (BMP), 2nd peak milk production before diagnosis day (PMPBD), 3rd diagnosis day milk production (DMP, concurrently beginning of treatment), and 4th post-treatment milk production (TMP, end of the treatment).

Analyses were performed in two stages. First stage, cows were categorized into three groups (Group 1: 0≤DIM≤50; Group 2: 50≤DIM≤100; Group 3: 100≤DIM≤150) according to DD diagnosis time in terms of day in milk (DIM) by using Eviews equity test of means program. Subsequently, Analysis of Variance and Welch F-Tests were performed to compare TMP values to each other (BMP, PMPBD and DMP). The differences between the TMP and DMP were statistically significant in all three groups. Second stage, cost-benefit analysis were conducted to determine the break-even point (break-even DIM) for each group to cover treatment cost for increasing milk yield. Since DIM of DMP, considering gained milk yield per cow and treatment cost, an average break-even DIM for each group were established.

In conclusion, after the DIM of the DMP, the optimum break-even DIM for Group 1, Group 2, Group 3 were determined as 19.00, 26.43 and 27.14 DIM, respectively.

Keywords: Dairy Cow, Digital Dermatitis, Treatment, Dairy Economics, Break-Even Analysis

ORAL-45

EFFECT OF IBR AND BVD ON PREGNANCY IN ARTIFICIALLY INSEMINATED CATTLES IN THE SIIRT PROVINCE

SEYRANİ MERSİN[a], ÖZGÜR YAŞAR ÇELİK[a]

[a]Siirt University, Siirt, Turkey

seyranimersin@siirt.edu.tr

Abstract:

This study was conducted for the purpose of determining Infeksiyoz Bovine Rhinotracheitis (IBR) and Bovine Viral Diarrhoea (BVD) seroprevalence in artificially inseminated cows raised under family-type and intensive managements in the province and districts of Siirt. Blood samples of 276 cattle indifferent ages and races were gathered during the study. Gathered samples were then transferred to Eppendorf tubes after being centrifugedat 3000 rpm for 10 minutes and were preserved at -20 o C until use. In serum sampling, BVDV Ag ELISA Test (IDEXX) was used to diagnose BVD viruses and IBR Individual Ab ELISA Test (IDEXX) to diagnose specific antibodies mutated against BHV-1. These were conducted under the management of ELISA pursuant to the suggestions from the business firm, data was then evaluated via Chi-Square analysis in the SPSS package software. Among study results, all samples were determined as ceronegative with regards to BVD and the IBR seroprevalence was established at 71% (n=196). 68.80% (n=86) of pregnant cows through artificial insemination were determined as positive and 31.20% (n=39) as negative; whereas 87.42% (n=132) of non-pregnant cows were positive and 12.58% (n=19) as negative. In the family and integrated cattle livestock production, 55.88% (n=38) and 84.21% (n=48) of artificially inseminated pregnant cattle, were positive and 44.12% (n=30) and15.79% (n=9) were negative; whereas 72.09% (n=31) and 93.52% (n=101) of non-pregnant cattle were positive, 27.91% (n=12) and 6.48% (n=7) were found negative respectively. In the research, seroprevalences of IBR and BVD were examined on the account of their pregnancy in connection with where cattle were raised business type, genotype and age. Results were found statistically significant ($P<0.05$). In conclusion, IBR rates of non-pregnant cattle are higher than pregnant cattle. This result led to the opinion that the reason of low artificial insemination in the region is higher IBR rates of non-pregnant cattle.

Keywords: Cattle, IBR, BVD, Artificial Insemination, Siirt

ORAL-46

BLOOD SELENIUM AND VITAMIN E LEVELS IN HEIFERS: REGIONAL AND SEASONAL DIFFERENCES IN TURKISH REPUBLIC OF NORTHERN CYPRUS

SERKAN SAYINER[a], HİLAL KARAGÜL[b],

[a] Near East University, Faculty Of Veterinary Medicine, Department Of Biochemistry, Turkish Republic of Northern Cyprus

[b] Ankara University, Faculty Of Veterinary Medicine, Department Of Biochemistry, Ankara, Turkey

serkan.sayiner@neu.edu.tr

Abstract:

The aim of this study was to establish the current state of blood selenium (Se) and vitamin E levels in heifers, together with roughage Se levels in eight livestock regions of Turkish Republic of Northern Cyprus (TRNC) from two different seasons. We also evaluated whether these concentrations were adequate. Blood samples were collected from at least 30 heifers for each region. It was found that there are significant seasonal differences for each region and regional differences in each season were due to different feeding conditions. Heifer blood Se and plasma vitamin E levels were generally found within adequate ranges in all regions for both seasons. We suggest that feed supplements containing Se should be added for the Iskele region during the winter months. For the Morphou region we advise that feed supplements should be added during summer due to low levels of Se found in roughages.

Keywords: Feed, Heifer, Selenium, Turkish Republic Of Northern Cyprus, Vitamin E

ORAL-47

HISTOLOGICAL STUDY OF TONGUE OF IN THE BLIND MOLE RAT (*NANNOSPALAX XANTHODON*) (*RODENTIA: SPALACIDAE*)

FERHAN BÖLÜKBAŞ[a], YASEMİN ÖZNURLU[b], RAMAZAN İLGÜN[a]

[a] Aksaray University, Faculty Of Veterinary Medicine, Aksaray, Turkey
[b] Selçuk University, Faculty Of Veterinary Medicine, Konya, Turkey

ferhanbolukbas@gmail.com

Abstract:

The family *Spalacidae* are completely adapted to exclusively underground life. There is no definite information about the tongue histology of blind mole rats owing to spreading of these animals to only a certain habitat. Different morphological and histological structures of the tongues of vertebrate are specialized to perform different function like capturing and manipulating the food, grooming and vocal modulation.

In this study, the present investigation aimed to investigate histological structures of the tongue of *Nannospalax xanthodon* described by Satunin (1898). For this purpose tissue samples from tongues of five blind mole rats (*Nannospalax xanthodon*) were used. The samples were kept in 10% neutral buffered formalin and processed using routine histological methods and mounted in paraffin blocks. Six micrometer-thick sections were cut and stained with Crossman's trichrome, alcian blue (pH 2,5) and periodic acid schiff.

This study have shown that the dorsal surfaces of the tongue are covered by a thick stratified squamous epithelium which is keratinized that in radix lingua are thin. The dorsal surface of tongue is thicker and more keratinized than the ventral surface. The dorsal surface of the tongue was covered by filiform papilla, but its ventral surface lack of lingual papilla. Also, fungiform papilla exist on the body of the tongue and this papilla has many taste buds.

The muscular core of the *Nannospalax xanthodon* tongue consists of a mass of skeletal muscle bundles that run in transverse, longitudinal and oblique directions in submukoza. The tongue contained many lingual serous salivary glands in the corpus and radix linguae.

In conclusion, *Nannospalax xanthodon* tongue detailed structural features have been revealed using histological methods. Furthermore, a limited tuber and root based diet and gnawing have together resulted in similarity of the tongue of the rodent, giving it some characteristics typical of a herbivore and an insectivore.

Keywords: Histology, Tongue, Nannospalax Xanthodon.

ORAL-48

CASE REPORT: A CHRONIC OCULAR *PSEUDOMANAS AERIGINOSA* INFECTION IN A GERMAN SHOW HORSE

TUBA ÖZGE YAŞAR[a]

[a] Namık Kemal University, Faculty Of Veterinary Medicine, Tekirdağ, Turkey

toyasar@nku.edu.tr

Abstract:

An infectious bacterial keratitis became stronger due to the false treatment and turned into chronic infectious uveitis followed by corneal leucoma in an 11 year old German show horse. Corneal pain, purulent epiphora, blepharospasmus, conjunctivitis, corneal leucoma, photophobia and enophtalmus was detected in the right eye during the initial clinical examination. Palpebral and papillary reflex couldn't be taken in the right eye. Retina and vitreous echogenicity found to be normal while echogenic areas were detected in the crystalline lens in the ultrasound examination. *Pseudomanas aeriginosa* colonies were detected in Mac Conkey agar. The patient was transferred to a clean, dust free room. Infected eye was treated properly until the symptoms disappeared. A mask was put on the eye for protection. The patient managed to keep the eye open. Fluoroscein test results turned into negative after treatment. Moisture in the eyes reduced to the expected level. Palpebral reflex was weak, papillary reflex was absent in the right eye while the right eye was normal. On the other hand, despite a mild photophobia and enophtalmy, right eye started to notice the light. The diffuse and intense corneal leucoma reduced in the central of the eye and corneal vascularisation appeared during the post treatment period. The patient started to see the shadows and give reactions. Due to the previous false applications corneal leucoma couldn't be removed completely. As a result, acute bacterial keratitis case could easily turn into a complicated chronic form and irreversible results might occur.

Keywords: Horse, Ocular Infection, *Pseudomanas Aeriginosa*, Uveitis

ORAL-49

INVESTIGATION OF THE DISTRIBUTION IN PLASMA CELLS AND EOSINOPHIL GRANULOCYTES IN THE SMALL INTESTINE OF THE CAMEL (CAMELUS DROMEDARIUS)

DENİZ KORKMAZ[a]

[a] Harran University, Facultyof Veterinary Medicine, Şanlıurfa, Turkey

dkorkmaz@harran.edu.tr

Abstract:

The present study was aimed the investigation of the distribution of plasma cells and eosinophil granulocytes of the small intestine in the one-humped camel (*Camelus dromedarius*). The small intestines of seven healthy adult camels of both sexes were used in this study. Tissue samples were fixed by immersion in 10% neutral formalin saline and IFAA (basic lead acetate). Sections (6µ-thick at 90µ-intervals) were stained with methyl green pyronin (MGP) for plasma cells and Congo red for eosinophil granulocytes. As a result of studies in duodenum; plasma cells tip of the villus intestinalis were outnumbered. Plasma cells number of in the villus-crypt connective tissue and it were has been found in the submucosa rarely. Eosinophil granulocytes have only seen a small number in the lamina propria. These cells were located around blood vessels. The number of plasma cells were decreased in tip of villi in jejunum, at the same time plasma cells number in villus-crypt space were increased. These cells were detected in submucosa rarely. Eosinophil granulocytes were concentrated the tip of villi in jejunum. These cells were observed in villus-crypt space and submucosa infrequently. In ileum, plasma cell numbers were found increased in tip of villi. Plasma cell numbers were increased sharply in the lumen-side parts of lymph follicles. While eosinophil granulocytes in the tip of the ileum villi have seen intensively they were found in the crypt-villus space rarely. While eosinophil granulocyte numbers have increased in the lumen-side parts of lymph follicles, they were seen few in the submucosa-side. In his study that plasma cells and eosinophil granulocytes in the small intestine were determined in the one humped camel.

Keywords: Camel, Eosinophil Granulocytes, Intestine, Plasma Cells.

ORAL-50

THE IMPACT OF IPARD SUPPORTS ON STRUCTURAL AND MANAGERIAL FEATURES OF DAIRY ENTERPRISES IN AFYONKARAHISAR PROVINCE

MEHMET YARDIMCI[a], HİKMET ARI[b], RECEP ASLAN[c]

[a] Namik Kemal University, Faculty of Veterinary Medicine, Tekirdağ, Turkey
[b] Agriculture And Rural Development Support Institute, Afyonkarahisar, Turkey
[c] Afyon Kocatepe University, Faculty of Veterinary Medicine, Afyonkarahisar, Turkey

yardimcinku@gmail.com

Abstract:

A survey was carried out to determine the structural and managerial features of IPARD beneficiary (group I) and non-beneficiary (group II) dairy enterprises in Afyonkarahisar Province. The results showed that group I have 3-5 years of background, owners are university graduates with no extra income, they keep records and perform statistical analyses while group II is generally more experienced, owners mostly have a primary or secondary school diplomas, half has an extra income, almost half don't keep records, most don't perform statistical analyses. Milking is generally performed twice a day in both groups. In the first group, average daily milk yield is 25 liters, calves are weaned at 90 days, automatic milking system is used, hoof care is regularly performed, manure is removed by scrapers, teats are cleaned before and after milking while in the second group average daily milk yield is 10-30 liters, calves are weaned between 30-90 days, mobile milking machines are used, hoof care is slightly performed, manure is collected manually, teats are cleaned before milking. Consequently, IPARD grants led to construct a sustainable and traceable system and products, established more institutional dairy enterprises and increased the farm management efficiency. Therefore such supports could be recommended to improve the production quality, hygiene and amount in the countries like Turkey which has a good potential for developing its agricultural production.

Keywords: Dairy, Grant, Farm, Milk Yield, Rural Development

ORAL-51

HEMOTROPIC *MYCOPLASMAS*: FROM *HAEMOBARTONELLA* TO *MYCOPLASMA*

ÖZNUR ASLAN[a]

[a] Erciyes University, Faculty of Veterinary Medicine, Kayseri, Turkey

oznuratalay@gmail.com

Abstract:

In the study, it was aimed to summarize recently gained insights into hemotropic *mycoplasmas*. Hemotropic *mycoplasmas* attaching to the host's erythrocytes surface are unculturable, gram-negative, obligate and wall-less bacteria which are known as the causative agents of infectious anemia in a wide variety of mammals. These organisms, previously known as *Haemobartonella* and *Eperythrozoon*, have been reclassified within the *Mycoplasma* genus while; sequence analysis of the 16S rRNA gene of Haemobartonella and Eperythrozoon spp. has shown that hemotropic mycoplasmas belong to members of the mollicutes rather than the rickettsiales. These pathogens can be visualized as dark purple-blue coccoids, rings or short chains on the erythrocyte surface, using Romanowsky-type stain such as Giemsa, Wrigth Giemsa or DiffQuick of blood smears. But it has to be taken account that the polymerase chain reaction assays, based on the 16S rRNA gene are more sensitive and specific methods than cytology. Doxycycline, enrofloxacin and oxytetracycline are the mostly used agents to cure hemotropic mycoplasmas nowadays. Furthermore, new research should likely be focused on treatment of hemotropic *mycoplasmas* with a potential vector-borne, interspecies transmission and a zoonotic potential.

Keywords: *Haemobartonella*, Hemoplasma, Hemotropic *Mycoplasma*, Treatment

ORAL-52

AMIODARONE'S EFFECTS ON PATHOLOGICAL, HEMATOLOGICAL AND BIOCHEMICAL PARAMETERS IN ACUTE SELENIUM POISONING

UFUK MERCAN YÜCEL[a], YILDIRAY BAŞBUĞAN[b], AHMET UYAR[c], AHMET UFUK KÖMÜROĞLU[d], ÖMER KELEŞ[c]

[a] Yüzüncü Yıl Univercity, Faculty of Veterinary Medicine, Deparment of Pharmacology And Toxicology, Van, Turkey

[b] Yüzüncü Yıl Univercity, Faculty of Veterinary Medicine,Department of Internal Medicine, Van, Turkey

[c] Yüzüncü Yıl Univercity, Faculty of Veterinary Medicine,Department of Pathology, Van, Turkey

[d] Yüzüncü Yıl Univercity, Vocational School Of Health Services, Van, Turkey

umercan@yyu.edu.tr

Abstract :

The aim of this study was to investigate amiodarone's effects on pathological, hematological and biochemical parameters during high dose selenium applications, which are known to be toxic for the heart.

64 Wistar-Albino rat was separated into four groups. Control group received only distilled water orally, Selenium group received single dose sodium selenite (10 mg/kg, LD50 dose) orally, Amiodarone group received single dose amiodarone (18 mg/kg) orally, Amiodarone + Selenium group received single dose amiodarone and sodium selenite (18 mg/kg + 10 mg/kg) orally. Hematological and biochemical analyses on blood samples and histopathological inspections on internal organs were made in third and tenth days of study.

8 of the 16 rats in Selenium group died within 72 hours. But any rats died in Amiodaron+Selenium group. There were no significant differences hematological parameters. But we found significant increase serum CK, CK-MB, LDH levels of Selenium group. But in Amiodarone and Amiodarone +Selenium groups decreased this serum level and increased B12 levels compared to Selenium group. In macroscopic inspections, Selenium and Amiodarone + Selenium groups have comparatively paler organs. Histopathologically, vascular congestion, parenchymal and perivascular edema and focal inflammatory infiltrations -especially on heart tissues- were observed at both groups. But these symptoms were mild at Amiodarone + Selenium group.

This study shows that amiodarone application has reducing effect of selenium toxicity. Because amiodarone protected heart with reducing CK and CK-MB levels and increased B12 levels which plays role synthesis of S-adenosyl methionine that converted selenium to nontoxic form. These findings are important for developing a treatment procedure against selenium poisoning, for which currently no certain treatments are available.

Keywords: Selenium, Toxicity, Amiodarone

ORAL-53

THE EFFECTS OF RECTAL EXAMINATION ON OXIDATIVE STRESS IN ANATOLIAN BUFFALO

A. FATİH FİDAN[a], DENİZ YENİ[b], ÜMİT ÖZÇINAR[c]

[a] Afyon Kocatepe University, Faculty of Veterinary Medicine, Department of Biochemistry, Afyonkarahisar, Turkey

[b] Afyon Kocatepe University, Faculty of Veterinary Medicine,Department of Reproduction and Artificial Insemination, Afyonkarahisar, Turkey

[c] Afyon Kocatepe University, Faculty of Veterinary Medicine, Education and Research Farm, Afyonkarahisar, TURKEY

ffidan@aku.edu.tr

Abstract :

Rectal palpation is the cheapest and most convenient method which is using for detecting most of internal diseases, gynecologic conditions and artificial inseminations in bovines. However, rectal palpation procedure is probably painful, resulting in physiological and behavioral stress reactions. The aim of the study was to evaluate the stress response and the oxidant /antioxidant levels against rectal palpation procedure in Anatolian buffalo. The study was conducted on six 2-3 years old, non-pregnant Anatolian buffalo. The rectal palpation procedure was performed in a closed area using the traditional method. Blood samples were taken from each animal, an hour before and just after the rectal palpation procedure. Heart and respiratory rate, rectal temperature, white blood cell (WBC), red blood cell (RBC), hemoglobin (Hb) levels, hematocrit (Hct) value, blood malondialdehyde (MDA) concentrations, plasma cortisol, nitric oxide (NO), glucose, cholesterol concentrations as well as plasma total antioxidant status (TAS) and total oxidant status (TOS) were measured before rectal palpation procedure and immediately after. Heart and respiratory rate, WBC, Hct value, MDA and NO concentrations, plasma cortisol and glucose concentrations as well as plasma TOS and cortisol concentrations were dramatically increased after rectal palpation procedure, whereas rectal temperature and TAS significantly depressed. These results demonstrate that MDA, NO, TAS and TOS were the most powerful markers for evaluating the oxidant/antioxidant status in Anatolian buffalo and that rectal palpation procedure was a stressful situation leading to an oxidative stress which can be amplified by strong glucocorticoid secretion.

Keywords: Rectal palpation, Anatolian buffalo, total oxidant status, total antioxidant status, cortisol

ORAL-54

NEW GENERATION PLATINUM COMPLEXES' ANTITUMOR EFFECTS IN K562 CELLS*

NESLİHAN TEKİN[a], KAMİLE ÖZTÜRK[a], TALAT BARAN[a], BARIŞ KERİMOĞLU[a], MEHTAP TARHAN[a], AYFER MENTEŞ[a]

[a]Aksaray University, Faculty Of Science And Letter, Aksaray, Turkey

neslihan_tekin@hotmail.com

Abstract:

Influential treatment approaches for human leukemia are under improving, but so far none of them have been found to be totally satisfactory. In current study we investigated cytotoxic effect of platinum metal based complexes on the human leukemia cell line (K562), alternatively. Platinum complexes (Pt-5a and Pt-6a) with 5a and 6a as ligands were synthesized and characterized by 1H-NMR and F-TIR. The cytotoxic effect of the complexes were determined using 3-(4, 5-dimethylthiazol-2-yl)-2, 5-diphenyltetrazolium bromide (MTT) assay. Bax, Bcl-2, and caspase 3 gene expression levels were estimated using Real-time quantitative reverse transcriptase-polymerase chain reaction (RT-qPCR) to elucidate the mechanism of cell death induction. Obtained results demonstrated that the Pt-5a and Pt-6a complexes displayed a significant dose-dependent cytotoxic effect in vitro. RT-PCR results specified that caspase 3 expression levels were increased after 24 h treatment with Pt-5a and Pt-6a complexes in K562 cells at some selected dose. Additionally, Bcl-2 expression level decreased after 24 h treatment with Pt-5a in K562 cells at some selected dose. In-vitro results have shown that platinum complexes may be regarded as potential anticancer agents for treating human leukemia.

*This study (2014-009 numbered) was supported by Aksaray University Scientific Research Fund

Keywords: Cancer, Apoptosis, Bax, Bcl-2, Caspase 3

ORAL-55

THE EFFECTS OF HERBAL EXTRACTS (THYME, ROSEMARY, AND BASIL) ON THE SHELF LIFE OF VACUUMED PACKED FISH BALL (MACKEREL, SCOMBER SCOMBRUS)

ESRA BALIKÇI[a], YEŞİM ÖZOĞUL[a], MUSTAFA DURMUŞ[a]

[a]ÇukurovaUniversity, Faculty Of Fisheries, Adana, Turkey

mdurmus@cu.edu.tr

Abstract:

Fish lipids are susceptible to oxidation due to their high degree of unsaturation. Medicinal herbs for instance are well known for their antioxidants action due to the presence of various components including phenolic acids, flavonoids and carotenoids. Therefore, those natural antioxidants could inhibit lipid peroxidation. Foods rich in antioxidants are very important for human health since the reactive oxygen species have been determined as aging and carcinogenesis factors. In addition to flavoring the food, certain herbs prolong the storage life of food due to their antimicrobial property and antioxidant activity which prevent rancidity. Therefore, the objective of this study was to investigate the effects of the addition of 0.05% of natural antioxidant extracts in mackerel balls, obtained from thyme (*Thymbra spicata*), rosemary (*Rosmarinus officinalis*) and basil (*Ocimum basilicum L.*) by means of solvent extraction method in terms of sensory (raw and cooked), biochemical (total volatile basic nitrogen (TVB-N), thiobarbituric acid (TBA), peroxide value (PV), free fatty acids (FFA), and pH) and microbiological analyses (total viable count (TVC). According to results of sensory analyses, the shelf life of the fish ball samples stored at 4±2oC was 25 days for the control and basil groups, 28 days for rosemary and thyme groups. The plant extracts also provided lower TBV-N, PV, FFA, pH and TBA values compared to the control samples. Besides, the natural extracts inhibited the microbial proliferation since the total viable counts were lower than the untreated fish ball. The herbal extracts, especially rosemary and thyme in combination with vacuum packing were effective in controlling the growth of bacteria and the values of biochemical parameters.

Keywords: Shelf Life, Mackerel, Fish Ball, Plant Extract

ORAL-56

THE EFFECT OF ADDITION OF DIGESTAROM DAIRY TO DAIRY COWS DURING DRY PERIOD ON THE IMMUNITY OF CALF

İSMAİL BAYRAM[a], İBRAHİM SADİ ÇETİNGÜL[a], CANGİR UYARLAR[a], EYÜP EREN GÜLTEPE[a], ABDUR RAHMAN SİAL[a]

[a] Afyon Kocatepe University,Faculty Of Veterinary Medicine, Department Of Animal Nutrition, Afyonkarahisar, Turkey

ibayram1965@yahoo.com

Abstract:

This study was conducted to determine the effects of Digestarom Dairy® (Biomin, Aus.), as essential oils mixture of some plants given to dairy cows during dry period, on immune functions of newborn calves. The Study has began on the first day of the dry period and finished on the second day of the lactation. Forty five late pregnant dairy cows were used in this experiment. Animals divided into three groups, in each have 15 cows, as follows; a) Treatment (T), b) Negative Control (NC), c) Positive Control (PC). Cows in NC received no contributed during study. Cows in PC received intramuscular injection of Levamisole (0,2 mg/kg) during both vaccination in dry period. Cows in T received Digestarom Dairy® in TMR with the dose of 3 g/day per head. Blood samples of calves collected from jugular vein at the first, second and third days after parturition. All samples analyzed for WBC, Lymphocytes, Monocytes, Granulocytes, RBC, Hemoglobin, Hematocrit, MCV, MCH, MCHC, RDW, PLT, MPV, PDW, PCT, ALT, AST, ALP, GGT and Total IgG. There were no significant differences between in the groups. In conclusion, administration of Digestarom Dairy® to dairy cows during late gestation phase did'nt effect haematological and immunological parameters of newborn dairy calves

Keywords: Dairy Cow, Dry Period, Digestarom Dairy, Calf, Immunity

ORAL-57

COMPARISON OF TUBERCULIN SKIN TEST, IFN-Γ ASSAY, REAL TIME PCR AND LATERAL FLOW RAPID TEST IN DIAGNOSIS OF FIELD OUTBREAKS OF BOVINE TUBERCULOSIS

ABDULLAH KAYA[a], HASAN İÇEN[b], NEVİN TUZCU[c], AYNUR ŞİMŞEK[b], SİMTEN YEŞİLMEN[b], AKIN KOÇHAN[b], İBRAHİM YILDIRIM[b], ADİL ALAN[b]

[a] Yüzüncü Yıl University, Van, Turkey
[b] Dicle University, Diyarbakır, Turkey
[c] Veterinary Control Institute, Adana, Turkey

asimsek@dicle.edu.tr

Abstract:

Bovine tuberculosis is an important zoonotic disease transmitted by direct contact, respiratory pathway, ingestion ofunpasteurised milk and milk product, raw or undercooked meat. Tuberculosis can be difficult to diagnose based only on theclinical signs. Tuberculosis is usually diagnosed in the field with the tuberculin skin test. Sputum and other body fluids maybe collected for microbiological examination. Polymerase chain reaction (PCR) methods have also been described. Diagnosticblood tests include the lymphocyte proliferation assay, the interferon gamma (IFN-γ) assay, and enzyme-linked immunosorbentassays (ELISA). In this study a total of 50 animals were tested by using tuberculin skin test (TST), lateral flow rapid test, IFN-γ assayand real time PCR. The animals were selected randomly among 178 cattle in dairy farms with the aged between 3-5 years andsuspected of having tuberculosis. Forty five cattle were positive out of 50 for TST while 31 for reactive by the IFN-γ assay and28 for rapid test and 9 for real time PCR. The purpose behind such variable as age was to compare sensitivity of tuberculin skintest, the IFN-γ assay and TB lateral flow rapid test and real time PCR examination for the diagnosis of field outbreaks of bovinetuberculosis in Turkey.

Keywords: IFN-Γ Assay, Real Time PCR, TB Lateral Flow Rapid Test, Tuberculin Skin Test, Tuberculosis

ORAL-58

PROFILE AND PREFERENCE COMPARISON OF SEAFOOD and MILK CONSUMERS UNDER THE CONSEPT OF HEALTHY FOOD

OSMAN İNANÇ GÜNEY[a], LEVENT SANGÜN[a]

[a]Çukurova University, Adana Vocational School, Adana, Turkey

inancguney@gmail.com

Abstract :

Today transitions in food consumption are causing many global public health concerns. The abandonment of traditional healthy habits and the emergence of new lifestyles associated with socio-economic changes pose important threats to the preservation and transmission of the healthy food consumption to future generations. The world's milk and seafood sectors are growing at an unprecedented rate and the driving force behind this enormous surge is a combination of population growth, rising incomes, urbanisation and healthy food consumption trend. Factors such as gender, age, ethnicity, education level, occupation, family size, the presence of children in the household and income affects consumption patterns. But also these socioeconomic and demographic structure of consumers changes rapidly. These changes, along with increased emphasis on health and nutrition, have altered dietary patterns. Knowledge of the influence of socioeconomic and demographic factors on nutrient consumption are important, especially in the design and practical implementation of nutrition outreach programs.

In this study, profiles of the consumers of two animal based foods, milk and seafood, were compared with the help of frequency tests and chi-square analyse methods. Thus, by determining the consumers socio-economic and demographic similarities and differences of this two products, general characteristics of the healthy food consumers are tried to disclose.

Keywords: Consumer Profile, Consumer Preferences, Seafood, Milk, Healthy Food

ORAL-59

INVESTIGATION OF HEMATOLOGICAL AND BIOCHEMICAL PARAMETERS, CLINICAL FINDINGS AND RUMEN CONTENT IN THE DIFFERENT PHASES OF EXPERIMENTAL RUMINAL ACIDOSIS IN SHEEP

AYNUR ŞİMŞEK[a], SERVET SEKİN[a]

[a]Dicle University, Diyarbakır, Turkey

asimsek@dicle.edu.tr

Abstract:

The aim of this study was to investigate clinical and laboratory findings of 12 g/kg and 18 g/kg of glucose-induced different phases of experimental ruminal acidosis. The materials of the study were consisted 12 healthy rams ages between 2-3 and 51-62 kg of weight. Rams were divided into two groups. In the first group of 12 g/kg BW and the second 18 g/kg BW glucose were given orally for created ruminal acidosis. Loss of appetite, teeth grinding, groaning and forming a soft consistency stool or diarrhea were observed in acidotic sheep. Increased body temperature and pulse frequency, respiratory frequency, were not changed while rumen movements decreased. In the first group hematocrit value (only in 15 hours) and total white blood cell count were increased ($p<0.05$) meanwhile erythrocyte count, hematocrit value, hemoglobin concentration and total white blood cell count were increased significantly ($p<0.05$) in second group. Although in the both groups serum Na and Cl concentrations increased ($p<0.05$) while the concentration of K was found to decreased ($p<0.05$). Decreased were detected occurred in pH of rumen contents and statistical differences were determined when compared between two groups in 6., 9., 24., 32., 48. and 72. hours (respectively $p<0.01$, $p<0.05$, $p<0.01$, $p<0.05$, $p<0.01$, $p<0.05$). As while the rate of acetate were increased, propionate and butyrate rations decreased. In addition to increasing of glucose dose affects the rate of acetate (respectively in 2., 6. and 12. hours $p<0.01$, $p<0.01$, $p<0.05$) and propionate rations (in 2., 6. and 48. hours respectively $p<0.01$, $p<0.01$, $p<0.05$) but for butyrate ($p>0.05$) did not affected. As a result, evaluation of clinical and laboratory findings in ruminal acidotic animals those finding must be consideration for determination of prognosis and treatment planning was concluded.

Keywords: Sheep, Experimental, Ruminal Acidosis, Glucose, Clinical, Hematological, Biochemical

ORAL-60

THE INFLUENCE OF COLD CONDITIONING ON THE PERFORMANCE OF THE BROILER CHICKEN

MEHMET YARDIMCI[a], EROL ŞENGÖR[b], EMİNE HESNA KANDIR[b], İBRAHİM SADİ ÇETİNGÜL[b], İSMAİL BAYRAM[b]

[a] Namik Kemal University, Faculty Of Veterinary Medicine, Tekirdağ, Turkey
[b] Afyon Kocatepe Universtiy, Faculty Of Veterinary Medicine, Afyonkarahisar, Turkey

sadicet@yahoo.com

Abstract:

The effect of short-term cold exposure on the performance of 600 commercial Ross 308 male broiler chickens was examined. On the fifth and sixth days of life the trial group was exposed to 15 °C ambient temperature for 3 h, both days, while the control group was kept under conventional brooding conditions. Thereafter, both control and trial birds were exposed to standard rearing temperatures until the 21st day, and from the 21st day to slaughter they were exposed to 15 °C ambient temperature. The mortality rate was significantly lower in the trial group (5%) compared to the control group (11%). The differences between body weight (control group: 2475.9 g; trial group: 2423.7 g) and feed conversion ratio (FCR) (control group: 1.95; trial group: 1.92) were not statistically significant. Performance and livability were not negatively affected by short-term cold exposure. It may be concluded that early age short-term cold conditioning improves thermotolerance to cold weather in broiler chickens in their later life.

Keywords: Broiler,Cold Exposure,Thermotolerence

ORAL-61

EFFECTS OF SUBCLINICAL AND CLINICAL KETOZIS ON THE INCIDENCE OF MASTITIS AND METRITIS , CULLING RATE AND SOME HEMATOLOGICAL PARAMETERS IN DAIRY COWS

İBRAHİM SADİ ÇETİNGÜL[a], CANGİR UYARLAR[a], EYÜP EREN GÜLTEPE[a], ABDUR RAHMAN SİAL[a],İSMAİL BAYRAM[a]

[a]Afyon Kocatepe University, Faculty Of Veterinar Medicine, Department Of Animal Nutrition, Afyonkarahisar, Turkey

sadicet@yahoo.com

Abstract:

The aim of this study was to determine the effects both clinical and subclinical forms of ketosis on the incidence of mastitis and metritis, culling rate and some hematological parameters. One hundred ninety seven multiparous holstein dairy cows were used in the experiment. Cows divided into three groups according to serum BHBA concentration as follows; Control (C), cows with BHBA concentration below <1,2 mmol/l; Subclinical Ketosis (SK), cows with BHBA concentration between 1,2 and 2,9 mmol/l; Clinical Ketosis (CK), cows with BHBA concentration greater or equal than 2,9 mmol/l. When compared groups SK and CK with group C, WBC (11.01; 12.13; 8.99, respectively), Lymphocytes (3.66; 3.66; 4.09 respectively) and Monocytes (0.504; 0.523; 0.520 respectively) were significantly higher even as Granulocytes (5.13; 4.66; 3.16 respectively) was significantly lower ($p<0,000$). The incidence of Mastitis and Metritis found significantly higher in SK and CK than C and also culling rate was significantly higher in SK and CK than C. In conclusion; this study indicates that, both clinical and subclinical forms of ketosis causing immunosuppression, altering some hematological markers, increasing two of the most important infectious diseases as mastitis and metritis and increasing culling rate in multiparous holstein dairy cows.

Keywords: Ketosis, Dairy Cow, Hemotological Parameters

ORAL-62

THE EFFECTS OF TRANSPLANTATION OF LIMBAL DERIVED MESENCHYMAL STEM CELLS (LMSCS) GROWN ON CONTACT LENSES IN A DOG WITH DRY EYE SYNDROME*

BAŞAK BOZTOK ÖZGERMEN[a], İREM GÜL SANCAK[b], FERDA ALPASLAN PINARLI[c], MERAL TİRYAKİ[c], ZERRİN MAHMUT[b], ASUMAN ÖZEN[d]

[a] Aksaray University, Faculty of Veterinary Medicine, Department of Surgery, Aksaray, Turkey

[b] Ankara University, Faculty of Veterinary Medicine, Department of Surgery, Ankara, Turkey

[c] University of Health Sciences,Aziz Sancar Research Center, Ankara, Turkey

[d] Ankara University, Faculty of Veterinary Medicine, Department of Histology And Embriology, Ankara, Turkey

basak1607@gmail.com

Abstract :

Dry eye (keratoconjunctivitis sicca- KCS) is a common ocular disease that leads to discomfort and vision loss in dogs. Mesenchymal stem cells (MSCs) have been proven to reduce inflammation and differentiate into a variety of cell types.

The aims of this study were to use contact lenses as a LMSC carrier and treat the clinical symptoms of KCS in dogs.

2 years old, male, Cocker spaniel dog was introduced to our clinic by complaints of bilateral cherry-eye and ocular discharge in left eye. The schirmer tear test result was found to be 2 mm and tear film osmolarity was found to be below range so the patient was diagnosed KCS.

Limbus-derived mesenchymal stem cells were isolated from aborted fetal corneas, expanded and cultured. LMSCs then were grown on contact lenses (CLs) covered with dog serum. Later the LMSCs grown on CLs were transferred to the dog's eye. The CL was kept in place for 6 days and then removed.

Clinical healing was monitored by clinical examination data in 0 week, 2nd week, 4th weeks. Clinical improvement was monitorized by increase in schirmer tear test values and regression of corneal conjunctivalisation obtained by performing rose-bengal test.

This method of using CLs as a LMSC carrier, offers an easily manipulable and non-immunogenic method for transferring LMSCs for ocular surface reconstruction in dogs suffering from dry eye.

*This study is supported by TUBITAK (The Scientific and Technical Research Council of Turkey) under the grant TOVAG- 115O280

Keywords: KCS, Dry Eye, Contact Lenses, Mesenchimal Stem Cell, Dog

ORAL-63

THE IMPACT OF ICING WITH POTATO, SUGAR BEET AND RED BEET PEEL EXTRACT ON THE QUALITY ASPECTS OF RAINBOW TROUT (*ONCORHYNCHUS MYKISS*) FILLETS

FATİH ÖZOĞUL[a], EMRE YAVUZER[a]

[a]Çukurova University, Faculty Of Fisheries, Adana, Turkey

fozogul@cu.edu.tr

Abstract :

The influences of icing with potato, sugar beet and red beet peel extract on sensory, chemical and microbiological changes of rainbow trout fillets were studied up to 25 days of storage. Sensory analysis (raw and cooked), chemical analysis (proximate composition, fatty acid profile, TVBN, TBA index, TBA content, PV, FFA and pH) and microbiological (total viable count, total coliform bacteria and *Escherichia coli*) were used to investigate the freshness and quality parameters of rainbow trout fillets. The shelf life of the control group and trout fillets iced with red beet were found to be 21 days, while trout fillets icing with potato and sugar beet peel extract had longer (25 days) shelf life. In addition, icing with potato and red beet peel extract on trout fillets resulted in lower TVB-N, PV and FFA values and PV and TBA values were below 13.80 meq O2/kg and 1.11 MA/kg, respectively. Most important fatty acids in trout fillets icing with potato, sugar beet and red beet peel extract were oleic acid (C18:1ω9), decosahexaenoic acid (DHA, C22:6ω3), palmitic acid (C16:0), palmitoleic acid (C16:1) and eicosapentaenoic acid (EPA, C20:5ω3). Oleic acid was main fatty acid that found the highest level (35%) in trout icing with red beet peel extract, whilst the highest lioleic acid was observed in the red beet peel extract (20.17%) group. The highest total viable counts was noticed in control group, followed by trout treated with sugar beet extract.

Consequently, data obtained from the current investigation indicated that icing with potato and red beet peel extract extended the shelf life of rainbow trout and provided better quality aspects.

Keywords: Rainbow Trout, Potato, Sugar Beet, Red Beet Peel, Extract, Quality

ORAL-64

PROTECTIVE EFFECTS OF SUMACH (RHUS CORIARIA L.) EXTRACT ON LIVER AND PANCREAS INJURY INDUCED BY DIABETES MELLITUS IN RATS

TURAN YAMAN[a], AHMET UYAR[b], ABDULAHAD DOĞAN[a], ÖMER FARUK KELEŞ[a], ZABİT YENER[a]

[a] Yuzuncu Yıl University, Faculty Of Veterinary Medicine, Department Of Pathology, Van, Turkey

[b] Yuzuncu Yıl University, Faculty Of Pharmacy, Van, Turkey

turanyaman@yyu.edu.tr

Abstract:

Diabetes mellitus (DM) has become one of the most severe chronic endocrine disorders in the world. The present study investigated the protective effects of sumach (Rhuscoriaria L.) extract, a polyphenol with potent antioxidant properties, on histological changes of liver and pancreas in diabetic rats induced by streptozotocin (STZ). For this purpose the effect of different doses of extract were compared with Akarboz (Glukobay®), a commercial anti-diabetic preparation. Forty-two Wistar albino male rats were divided into six groups as Control; Diabetes mellitus (DM); DM+Akarboz 20 mg/kg; DM+100 mg/kg sumach extract (SM1); DM+250 mg/kg sumach extract (SM2); DM+500 mg/kg sumach extract (SM3). Experimental diabetes was established by a single-dose [50 mg/kg, intra-peritoneal (i.p)] STZ injection. Essential dosages of sumach extracts and Akarboz were applied with gastric gavage for 21 day. Blood glucose levels were recorded per a week. In histopathological evaluation of the stained liver sections revealed necrosis and degeneration of hepatocytes, inflammatory cell infiltration and fibrosis in portal area and bile duct hyperplasia in the diabetic rats. Marked abnormal histology with evident cell loss due to degeneration and necrosis of islet of Langerhans cells were detected in pancreas tissues. The treatment with sumach extracts significantly ameliorated these harmful effects of diabetes on the liver and pancreas of rats in SM1, SM2 and SM3 groups depend on dose level, respectively. This histopathological findings were supported by biochemical parameters such as antioxidant defens systems, lipid peroxidation and levels of enzyme associated with liver damage. These results indicates that sumach extract have a protective effect on liver and pancreas injury in STZ-induced diabetic rats probably due to its antioxidant activity and provides a novel therapeutic strategy for the diabetic liver and pancreas damage.

Keywords: Sumach (Rhus Coriaria L.), Diabetes, Liver, Pancreas, Pathology, Rat

ORAL-65

THE EVALUATION OF EFFECT OF RAI IN THE GASTRIC BY SCINTIGRAPHIC, BIODISTRIBUTION, HISTOPATHOLOGICAL AND IMMUNOHISTOCHEMICAL DEMONSTRATION OF NA+/I- SYMPORTER IN THE RAT MODEL

RAHŞAN YILMAZ[a], NİHAT YUMUŞAK[a], MURAT SADIÇ[b], HASAN İKBAL ATILGAN[c], MELİHA KORKMAZ[b]

[a] Harran University, Faculty Of Veterinary Medicine, Department Of Pathology, Şanlıurfa, Turkey

[b] Ministry Of Health, Diskapi Yıldırım Beyazit Training And Research Hospital, Division Of Nuclear Medicine, Ankara, Turkey

[c] Division Of Nuclear Medicine, Necip Fazıl City Hospital, Ministry Of Health, Kahramanmaraş, Turkey

rmilliogullari@hotmail.com

Abstract:

The aim of this study was to evaluate histopathological changes and scintigraphic evaluation, biodistribution of radioactive iodine (RAI, 131I) and also presence of Na + / I-Symporter's (NIS) shown by immunohistochemically in the gastric. A total of 52 female rats bitches were used in the study. The animals were randomly allocated to 4 groups. The first group control (n=12), radioactive iodine (RAI) was given to group 2 (n=10, 24 h, early term), 3 group (n=10, 3rd weeks, intermediate term) and 4 group (n=10, 3rd mounths, late term) in a dosage of 100 MBq (~3 mCi, 12 mCi/kg) via orogastric route. Evaluations were performed at 24 h, 3rd weeks, and 3rd months after the administration of RAI. In scintigraphic evaluation, the most intense activity uptake was seen in thyroid gland in 24th hour images, also gastric had intense activity uptake. Biodistribution values after the end of experiment 24 hours 0.402% ID / g, after 3rd weeks 0.054% ID / g and after 3rd months and 0.025% ID / g were shape. The immunohistochemical staining, NIS positive staining was observed in the cytoplasm of the glands epithelial cells in the gastric. Immunohistochemically intensity of NIS in the gastric were identified respectively as 24 h, 3rd weeks and 3rd months. Histopathologically severity of damage in the gastric tissue 131I to formed was observed respectively as 24 h, 3rd weeks and 3rd months.

Keywords: 131I, Stomach, Scintigraphy, Biodistribution, Histopathology, NIS, IHC, Rat.

ORAL-66

CAT NEUTROPHIL ISOLATION: COMPARISON OF THE EFFICACY BIOCOLL SEPARATING SOLUTION AND PERCOLL GRADIENT SOLUTIONS

NESLİHAN SÜRSAL[a], AYŞE ÇAKMAK[a], KADER YILDIZ[b]

[a] Ankara University, Faculty Of Veterinary Medicine, Department Of Parasitology, Ankara, Turkey

[b] Kırıkkale University, Faculty Of Veterinary Medicine, Department Of Parasitology, Kırıkkale, Turkey

neslihansursal@hotmail.com

Abstract:

The immune system in mammals is developed various strategies to fight with pathogens including bacteria, viruses, parasites, fungi. Neutrophil are important instrument in innate immunity which is the first line of defence in organism. Neutrophils are the first cell to arrive in damaged area. Although neutrophils are short-lived in circulation, the number of these cells are quite high in mammals. Neutrophils had also fight through phagocytosis, degranulation or extracellular trap formation (netosis) with pathogens. For a better understanding of host immunity, they have been conducted lot of in vitro studies using neutrophils. Neutrophils can be isolated from blood, tissue or bone marrow, and there are different methods of neutrophils isolation. However, these methods are not suitable for every mammals.

In the present study it was aimed to compare the neutrophil isolation methods in cats in two different ways.

For this purpose, the blood samples were taken from Venae cephalica of adult cats (n:5) clinically healthy in tubes contained EDTA. The blood was layered into falcon tubes with Biocoll Separating Solution (1.077) and Percoll Gradient Solutions (45%, 54%, 63%, 72%), separately. After centrifugation, the layer of neutrophils were collected and washed with RPMI 1640. The percentage of the neutrophils in the pellets were determined by Diff Quick stain. Then, neutrophil number obtained from two different isolation methods were determined with Neubauer hemocytometer. Neutrophil viability were determined by staining with Trypan Blue Dye Solution.

As a result, the usage of Percoll Gradient Solution is found out to be more appropriate for a neutrophil isolation in cats.

This work was supported by the grand from TUBITAK (Project no: TOVAG 214O288)

Keywords: Biocoll Separating, Neutrophil Isolation, Percoll Gradient, Cat

ORAL-67

DETECTION OF MULTIPLE PREGNANCY WITH TRANSABDOMINAL ULTRASONOGRAPHY AND PREGNANCY-ASSOCIATED GLYCOPROTEIN (PAG) TEST

HASAN ALKAN[a], MEHMET BUĞRA KIVRAK[b], FATMA SATILMIŞ[a], DOĞUKAN ÖZEN[a], DURSUN ALİ DİNÇ[a]

[a]Selcuk University, , Faculty Of Veterinary Medicine, Department Of Obstetrics And Gynecology, Konya, Turkey

[b] Ankara University, Faculty Of Veterinary Medicine, Department Of Biostatistics, Ankara, Turkey

hasanalkan@selcuk.edu.tr

Abstract:

The objective of the present study was to evaluate and compare the accuracy of transabdominal ultrasonographic and pregnancy-associated glycoprotein (PAG) tests for the determination of fetal numbers in sheep.

120 Akkaraman-Kangal sheep, weighted 65-75 kg, ages between 3-6 and at least once had delivered were used in this study. Natural estrous of sheep was detected by teaser ram and hand mated. Ultrasonographic examination was performed when the sheep was standing through the hairless region which exists ventral of the right lateral flank and above of the udder between 40-60 day after mating. A 5 MHz convex transducer was used for ultrasonographic examination. The transducer directed to dorsocaudal of the udder and aperture pelvis cranialis. When more than one finding related to fetus was seen on the screen, concluded as twin pregnancy. Blood samples were collected via jugular vein and serum PAG levels were measured by ELISA. According to ELISA results PAG level ≥0.300 sheep was considered to be pregnant. Single and twin pregnancy PAG levels were compared to determine what the connection is with multiple pregnancy. Specificity, sensitivity, positive and negative predictive value and accuracy of tests in determining multiple pregnancy were detected by comparing PAG and ultrasonographic examination results with lambing records.

According to the ultrasound and PAG results, 110 sheep were detected as pregnant. According to lambing records, all pregnant sheep were delivered. Sixty-eight (56,66%) pregnant sheep were lambed twin and 42 (35%) sheep were singletons. Specificity, sensitivity, positive and negative predictive values and accuracy of PAG level and ultrasonographic examination in determination for multiple pregnancy were detected as (95.08%, 64.29%), (73.80%, 57.35%), (91.17%, 48.21%), (84.05%, 72.22%) and (86.4%, 60%), respectively.

In conclusion, although a correlation was not detected between PAG level and multiple pregnancy, it was considered that transabdominal ultrasonography is more useful in this field.

Keywords: Sheep, Multiple Pregnancy, Ultrasonography, PAG.

ORAL-68

THE PREVALENCE OF LARVAL STAGES OF DICROCOELIUM DENDRITICUM IN THE FIRST INTERMEDIATE HOST *HELIX LUCORUM LINNAEUS*, 1758 (*MOLLUSCA: PULMONATA*) IN ESKIŞEHIR AND BARTIN PROVINCES.

MUSTAFA ESER[a], KÜRŞAT KARTAL[b], FAHRİYE ZEMHERİ[c]

[a] Anadolu University, Faculty Of Open Education, Health Programs, Eskisehir,Turkey
[b] Gazi Mustafa Kemal Anatolian High School, Eskisehir,Turkey
[c] Bartın University, Faculty Of Science, Department Of Moleculer Biology And Genetics, Bartın, Turkey

meser961@anadolu.edu.tr

Abstract:

The aim of this study was to determine the prevalence of larval stages of *Dicrocoelium dendriticum* in the *Helix lucorum*, which is a big garden snail seen at Eskişehir and Bartın provinces. A total of 607 snails were collected from pasture grazed by ruminants in Eskişehir (n=282) and Bartın (n=325) regions within May 2016. Each snail was anaesthetized by injection of a sterile 50 mL magnesium chloride solution, then dissected by removing their shell. At the next step, viscera was examined against possible presence of sporocysts and cercariae by using a stereo microscope. Isolated larval stages were identified and monitored under a light microscope. The prevalence of larval stages of *Dicrocoelium dendriticum* in the Helix lucorum was found as 4.6% and 7.0% in Eskişehir and Bartın, respectively. It was clarified that, in both provinces, cercariae matured at the middle of May and then leave the sporocysts.

Keywords: *Dicrocoelium Dendriticum*, Trematode, Snail, *Helix Lucorum*, Eskişehir And Bartın.

ORAL-69

THE PAST, CURRENT AND FUTURE DEVELOPMENTS OF SURIMI PRODUCED AND CONSUMED IN TURKEY

ELİF TUĞÇE AKSUN[a], FATİH ÖZOĞUL[b]

[a]Cukurova University, Faculty of Fisheries, Adana, Turkey.

etaksun@cu.edu.tr

Abstract:

The current review is to focus past, current and future developments of surimi produced and consumed in Turkey. Surimi which is prepared by mechanically deboned, skinned, washed, minced and mixed with cryoprotectans is a well-liked product all over the world. The reasons relate to great popularity of surimi are the high-level protein, low cholesterol, low fat, and high nutrient content. Surimi is not only consumed directly, but also it has been used for many products as sausage, fish ball, fish paste and burger. The most important parameters for selection of raw material for surimi production are myofibrilar, salt soluble and thermo-stability of muscle protein content of fish. Surimi are generally produced from white-muscle marine species including Pacific hake, Alaska Pollock, and southern blue whiting. Thus, the expansion of consumption of surimi-based products and over fishing lead to manufacturers to investigate for new species as raw materials. Surimi is a novel product for Turkey markets so it would be an economical and desirable product due to consumer preference.

Generally, fatty fish species including sardine, horse mackerel and anchovy are commonly consumed in Turkey because of low price and high quality nutritional aspects. Nevertheless, when the fatty fish used for surimi production, some unfavorable factors take place based on high fat and myoglobin content, high percentage of dark muscle and rapidly decrease pH of fish muscle. Some protective treatment may reduce adverse effect of dark muscle species using for surimi production. Alternatively, high percentage of discarded fish species has been widely caught in Turkey that may have some opportunities for future usage of surimi. Apparently, this review has emphasized current knowledge about production and consumption of surimi in Turkey and selection of an economic fish species for this product.

Keywords: Biological toxins, Tetrodotoxin, Pufferfish, Analgesic.

ORAL-70

THE COMPARISON OF THE FATTY ACID COMPOSITIONS OF FISH SILAGE OILS PREPARED FROM FISH WASTE TREATED WITH FORMIC ACID AND DIFFERENT BACTERIA STRAINS*

GÜLSÜN ÖZYURT[a], YILMAZ UÇAR[a], YESİM ÖZOĞUL[a]

[a]Cukurova University, Faculty of Fisheries, Adana, Turkey.

ucarylmz@gmail.com

Abstract:

Seafood has very important role in human and animal diet, since it has valuable nutritional compounds. Therefore, usage of seafood processing wastes has been a popular subject in regards of environmental pollution and gaining value-added products. Fish silage has promising potential to produce high quality animal food from seafood wastes, preventing environmental pollution. The extracted fish silage lipids can be used as a food supplement for human or animal consumption. Therefore, the fatty acid profile of fish waste silage treated with formic acid and LAB strains (*Enterococcus gallinarum, Streptococcus spp, Lactobacillus brevis, Lactobacillus plantarum and Pediococcus acidilactici*) was evaluated for human and animal consumption in this study.

Results showed that myristic acid (C14:0), palmitic acid (C16:0), stearic acid (C18:0), palmitoleic acid (C16:1), oleic acid (C18:1ω9), linoleic acid (C18:2ω6), eicosapentaenoic acid (EPA, C20:5ω3) and docosahexaenoic acid (DHA, C22:6ω3) were the dominant in raw fish waste. After silage production, the main fatty acids for silage groups were found similar. The PUFA content was 24.44% in raw fish waste and in range of 23.27% and 23.64% for silage prepared with formic acid, *Lactobacillus plantarum, Pediococcus acidilactici and Lactobacillus brevis* ($p>0.05$). EPA content was generally similar in all silage groups with raw material (2.51-2.66%) except silage prepared with *Enterococcus gallinarum* (2.32%). Although DHA contents of acid and fermented fish silages (3.59- 4.31%) decreased after silage production (4.91% for raw material), PUFA contents of acid and fermented fish silage were the same as those of raw material except silage prepared with *Enterococcus gallinarum*. It can be concluded that fish oil extracted from fish silage treated with formic acid and LAB strains should be regarded as a healthy diet component for animal or human nutrition because of its high PUFA contents.

*This project was supported by the Scientific and Technological Research Council of Turkey (TÜBİTAK, TOVAG-213O166).

Keywords: Biological toxins, Tetrodotoxin, Pufferfish, Analgesic.

ORAL-71

COMPARISON THE CHEMICAL, SENSORY AND MICROBIOLOGICAL PARAMETERS OF WILD AND CULTURED RAINBOW TROUT (*ONCORHYNCHUS MYKISS*) STORED IN ICE

FATİH ÖZOĞUL[a], EMRE YAVUZER[a]

[a]Çukurova University, Faculty Of Fisheries, Adana, Turkey

fozogul@cu.edu.tr

Abstract :

Wild and cultured rainbow trout were compared in relation to chemical, sensory and microbiological changes during the iced storage. Sensory analysis (raw and cooked), chemical analysis (proximate composition, TVBN, TBA content and FFA) and microbiological (total viable count and total coliform bacteria) were performed for quality parameters of trout. There was not significant differences in sensory parameters of wild and cultured rainbow trout at the beginning of the storage, although differences between groups were significant towards to the end of the storage periods ($P<0.05$). The sensory results correlated well with microbiological results of the current study. The sensory and microbiological results showed that the shelf-life of wild and cultured rainbow trout was 14 days in ice. Initial TVB-N level of wild and cultured rainbow trout were 11.15 and 14.13 mg/100 g and reached the value of 17.08 and 14.48 mg/100 g at the end of the storage periods, respectively. TBA values of wild and cultured trout were statistically significant ($p<0.05$) and peroxide value (PV) of trout meat fluctuated during storage periods. Wild trout fillets had higher FFA values than culture trout. Significant differences were observed in ammonia and biogenic amine accumulation between wild and cultured trout ($P<0.05$). Wild trout generally had higher ammonia and biogenic amine production compared to cultured trout. The most formed amine in trout fillets were dopamine, serotonine and tyramine.

Consequently, the data obtained from the study revealed that chemical and microbiological changes in wild and cultured rainbow trout varied depending on specific storage days.

Keywords: Rainbow Trout, Biogenic Amines, Quality, Tvb-N, Tba, Pv

ORAL-72
A NEW PROBLEM! WHAT DO WE KNOW ABOUT FAKE JOURNALS?

ÖMER GÜRKAN DİLEK[a], YASİN DEMİRASLAN[a]

[a]University Of Mehmet Akif Ersoy, Faculty Of Veterinary Medicine, Department Of Anatomy, Burdur,Turkey

ogdilek@mehmetakif.edu.tr

Abstract:

Scientific studies require tangible and intangible facilities. The inevitable exerting an intensive effort is to create facilities. Labour is also priceless case. In this case nobody wants to go down the drain of labor. The aim of this study to evaluate which is academics will face fake-hijacked journals and the evaluation of updated data about journals.

Fake-hijacked journals were determined by the electro-physicist Mehrdad Jallalian at the beginning of 2012. Jallalian summarized this situation is as follows. 'Aggrieveds of the fake-hijacked journal are every degree of academic staff and graduate students. In particular scientists (PhD students, academics who wants to provide criteria associate professor) published an obligation which is set as the target audience. Firstly, fake-hijacked journal hackers who only print journals and scientific journals indexed in Thomson Reuters on behalf of forming a fake website. In addition, the journal's impact factor and other properties (ISSN, ISBN…) are copied. After this stage aggrieved's will be deceived. For this, the (call for paper) in form of spam mail being sent from the audience and made false and illegal advertising journal. After easy article sending the acceptance letters are received quickly and requested the publication process fee. Finally the manuscripts are published fake-hijacked website. However, when the authors searched on index, can't reach article. Archives des sciences, Bothalia, Jökull, Kardiologiia, Sylwan and Wulfenia are an example to this journals.

As a result, there may be two broadcast in the case of fake-hijacked journals. First of these lack of knowledge about methods of fraud, the second stage is to increase academic criteria to ensure that article referred to this type of journal. The target audience of this article is designated as first case. In addition, this new generation of academics again protect academic fraud is considered to be incumbent on scientists.

Keywords: Fake Journals, Hijacked Journals, Fake Publishing

ORAL-73

WEIGHT ESTIMATION OF *UPENEUS MOLUCCENSIS* (BLEEKER,1855) BY USING DIFFERENT NORMALISATION METHODS AT ARTIFICIAL NEURAL NETWORKS

LEVENT SANGÜN[a], PELİN KÖKÇÜ[b], OSMAN İNANÇ GÜNEY[a]

[a] Çukurova University, Adana Vocational School, Adana, Turkey
[b] Çukurova University, Faculty Of Fisheries, Adana, Turkey

lsangun@cu.edu.tr

Abstract :

This study was conducted in Gulf of İskederun and total length (cm), standard length (cm) and weight measures of *U.moluccensis* species which were caught by bottom trawling method were used. By applying Min-max, D-Min-Max and Z-score normalisation methods to the obtained measurements a new data set were created and using back propagation algorithm with the artificial neural networks the weight of *U.moluccensis* was estimated. The performance of the prediction model which was created with different normalisation techniques were calculated by using Mean Absolute Error-MAE and Correlation Coefficient-R values. Study shows that, according to the correlation coefficient the valid results were calculated as, D-Min-Max (0.98), Min-Max (0.98), raw data (0.97) and Z-Score (0.96). due to the Mean Absolute Error-MAE values valid results were calculated as, D-Min-Max (0.0168), Min-Max (0.1588), raw data (0.5003) and Z-Score (0.6414).

Keywords: *Upeneus moluccensis,* Artificial Neural Networks, Normalisation Techniques, D-Min-Max, Min-Max and Z-Score

ORAL-74

GENETIC DIVERSITY BETWEEN DIFFERENT HORSE POPULATIONS IN TURKEY

BANU YÜCEER ÖZKUL[a], NECMETTIN ÜNAL[a], METIN ERDOĞAN[b], FATMA TÜLİN ÖZBAŞER[c],CEYHAN ÖZBEYAZ[a]

[a] Ankara University, Faculty of Veterinary Medicine, Ankara, Turkey
[b] Afyon Kocatepe University, Faculty of Veterinary Medicine, Afyonkarahisar, Turkey
[c] Arı Farma Limited Company, Ankara, Turkey

yuceerbanu@hotmail.com

Abstract:

This research has been conducted with the aim of detecting the genetic similarities/differences in terms of 17 microsatellite loci by using totally 676 samples taken from Domestic (n=439), Iranian (n=72), Afghan (n=34) and Bulgarian (n=27) pacing horses raised in different parts of Turkey and from Arabian (n=53) and Throughbred (n=51) horses recorded in the Board of High Commissioners, the Ministry of Food, Agriculture and Livestock. As a result of genetic analysis conducted, the average heterozygosity value was found the lowest in Throughbred horses (0.643), the highest in Afghan horses (0.728). Average FIS, FIT ve FST values are calculated respectively to be 0.082, 0.120 and 0.041. In UPGMA (Unpaired Group Method of Average), FCA (Factorial Correspondence Analysis) and Structure analysis showing the relations between populations, it is understood that from 6 different horse populations, Arabian and Throughbred horses constitute a separate group and the other horse populations pacing constitute a separate group. In terms of investigated microsatellite loci, it is concluded that the pacing horses have genetically similar structure.

Keywords: Genetic Differences, Horse, Microsatellite, Pacing, Turkey

ORAL-75

INDUCTION OF ESTROUS AND OVULATION WITH LONG AND SHORT TERM ADMINISTRATION OF PROGESTERONE DURING EARLY ANESTRUS IN AKKARAMAN-KANGAL BREED SHEEP

FATMA SATILMIŞ[a], ABDURRAHMAN TAKÇI[b], MEHMET BUĞRA KIVRAK[a], HASAN ALKAN[a], DURSUN ALİ DİNÇ[a]

[a] Selcuk University, Faculty Of Veterinary Medicine, Department Of Obstetrics And Gynecology, Konya, Turkey

[b] Cumhuriyet University, Faculty Of Veterinary Medicine, Department Of Obstetrics And Gynecology, Sivas, Turkey

fatmasatilmis@selcuk.edu.tr

Abstract :

The objective of this study was to evaluate the effect of long and short term administration of progesterone on inducing estrous and ovulation during early anestrus in Akkaraman-Kangal breed sheep.

247 Kangal breed sheep, 45-70 kg, ages between 3-6 and at least had parturated once, were used in this study. Animals had been chosen in an elite herd which was created a scope of national small ruminant improvement in private farms project in Sivas region. Sheep was divided into two groups and a 60mg MPA-containing sponge placed into vagina first group of sheep (n=124) during early anestrus. Sponges were taken out 12 days later and at the same day, 500IU eCG was administrated intramuscularly. As for the second group, a 60 MPA-containing sponge placed into the vagina and on the same day 50 µg GnRH administrated intramuscularly. Sponges of the second group were taken out 7 days later, on the same day 75 µg PGF2α + 500 IU eCG was administrated intramuscularly. After 24 hours following taking out of sponges, the sheep in estrus was tried to detect by using a teaser ram throughout 5 days in both groups. Sheep in estrus was mated by hand breeding. Pregnancy diagnosis was performed by ultrasound examination 30th day after mating.

After two different estrus induction protocols 109 (%44.12) sheep were observed to be in estrus. Seventy-eight sheep in estrus was long-term treatment protocol and 31 of them in short-term. Forty-five sheep from sheep mated were detected to be pregnant. Thirty-two pregnant sheep was in the first group and 13 of them were in the second group.

It was concluded that combined short progesterone application in early anoestrous period was failed to stimulate oestrus and ovulation, however, reasonable results observed in oestrus induction and pregnancy rate with conventional progesterone treatment in Akkaraman-Kangal sheep.

Keywords: Sheep, Early Anestrus, Progesterone.

ORAL-76

RELATIONSHIP BETWEEN NEOPTERIN, MYELOPEROXIDASE AND OXIDATIVE DNA DAMAGE IN SHEEP WITH NATURAL BABESIOSIS

AHMET UFUK KÖMÜROĞLU[a], ÖZLEM ORUNÇ KILINÇ[b], NAZMİ YÜKSEK[c], SEMİHA DEDE[d], VEYSEL YÜKSEK[b], SEDAT ÇETİN[d]

[a] Yüzüncü Yıl University, Vocational School Of Health Service, Van, Turkey
[b] Yüzüncü Yıl University, Özalp Vocational School, Van, Turkey
[c] Yüzüncü Yıl University, Faculty Of Veterinary Medicine, Department Of Internal Medicine, Van, Turkey
[d] Yüzüncü Yıl University, Faculty Of Veterinary Medicine, Departmant Of Biochemistry, Van, Turkey

aukomuroglu@yyu.edu.tr

Abstract:

Myeloperoxidase is an inflammatory enzyme that produces reactive hypo-chloric acid in the presence of hydrogen peroxide and chlorine ions. Neopterin is a biomarker of oxidative and immune activation whose plasma levels significantly increase during immune system activation and infections. The present study was conducted to determine whether there is a relationship between neopterin, myeloperoxidase and oxidative DNA damage in sheep with natural babesiosis.

The study included 20 healthy sheep (control) and 20 sheep with natural babesiosis (patient), a total of 40 sheep. Blood samples were obtained from vena jugularis of all study groups in due form into biochemical tubes. Factor positive animals based on the conducted smear test were included in the study. Furthermore, the disease was confirmed with PCR results. Neopterin, myeloperoxidase and oxidative DNA damage (8OHDG) were determined with ELISA test.

Neopterin levels were found to be significantly lower in control group when compared to the patient group ($p < 0.05$). Myeloperoxidase and oxidative DNA damage were also higher in the patient group, but the differences were not significant ($p > 0.05$).

It was observed that neopterin, which is considered to be an immune response, significantly increased in sheep with babesiosis, while myeloperoxidase and oxidative DNA damage levels increased in the patient group. It was concluded that especially neopterin could be evaluated as an immunologic response for babesiosis

Keywords: Babesiosis, Neopterin, Myeloperoxidase, Oxidative DNA Damage

ORAL-77

INVESTIGATION OF SOME REPRODUCTIVE CHARACTERISTICS AND PROGESTERONE LEVELS OF AKKARAMAN SHEEP

AFŞİN KOCAKAYA[a], CEYHAN ÖZBEYAZ[a]

[a] Ankara University, Faculty Of Veterinary Medicine, Department Of Animal Science, Ankara, Turkey

akocakaya@ankara.edu.tr

Abstract:

The purposes of this study were to detect the oestrus cycle and gestation period, and to investigate the progesterone levels in circulating blood which were not detected naturally before in Akkaraman sheep. Akkaraman is a native breed in Turkey. It is raised in central Anatolia, where steppe conditions prevail. The data were collected from 31 Akkaraman ewe during 2012-2013. The mean periods of the oestrus cycle and gestation were detected as 15.29 ± 0.26 and 150.24 ± 0.27 days, respectively. In the test days between the first and second oestrus in the mating season the mean values of progesterone levels were between 3.24 - 11.55 ng/ml and the corresponding values of progesterone at the anoestrus period changed 0.20 – 10.20 ng/ml. In conclusion, the Akkaraman breed had shorter (approximately 2 days) oestrus cycle period and similar pregnancy period compared to the other breeds. The mean levels and the differences between minimum and maximum values of the progesterone levels were similar to prolific breeds. However, this study results showed that the Akkaraman breed could be utilized as a prolific breed.

Keywords: Akkaraman, Gestation Period, Oestrus Cycle, Progesterone

ORAL-78

EVALUATION ON CLINICAL AND HEMATOLOGICAL FINDINGS OF MONO- AND CO-INFECTION WITH HEPATOZOON CANIS IN DOGS

GÜLTEN EMEK TUNA[a], SERKAN BAKIRCI[b], HÜSEYIN VOYVODA[a], BÜLENT ULUTAŞ[a], TÜLİN KARAGENÇ[a]

[a] Adnan Menderes University, Faculty Of Veterinary Medicine, Department Of Internal Medicine, Aydın, Turkey

[b] Adnan Menderes University, Faculty Of Veterinary Medicine, Department Of Parasitology, Aydın, Turkey

emektuna@adu.edu.tr

Abstract:

Hepatozoon species are apicomplexan parasites from the family of *Hepatozoidae*. *Hepatozoon (H.) canis* which is transmitted by *Rhipicephalus sanguineus*, is the most common cause of canine hepatozoonosis in Europe, Asia, Africa and Latin America. The objective of this study was to evaluate risk factors and clinical signs in 32 H. canis infected dogs (16 dogs with *H. canis* mono infection, and co-infection of 15 dogs with *H. canis* and *Ehrlichia canis* and 1 dog with *H. canis* and *B. canis*) and compare the haematological findings between the groups. Both *H. canis* and *Ehrlichia canis* infections were confirmed by IFAT whereas PCR method was used in detection of *Babesia canis* DNA. For this purpose, signalment, owner reports about anti-parasitic drug application, residing conditions, presents of tick and general condition, clinical signs and haematological findings of the dogs were recorded. Nine out of 16 (56.25%) mono infected dogs and 62.5% (10/16) 10 dual infected dogs in houses, and 13 dogs in house gardens were resident. Nine out of 16 (56.25%) mono-infected and 12 out of 16 (75%) dual infected dogs were unfrequently treated with antiparasitic drugs. Consequently, 4 out of 16 (25%) mono- and 9 out of 16 (56.25%) dual-infected dogs had tick infestation on clinical examination. In both groups, the most commonly clinical signs included inappetence, lymphadenopathy, tachypnea, fever, tachyarrhythmia, pale mucose membranes, and thrombocytopenia and anaemia were the most frequent haematological abnormalities. There were no significant differences in the haematological variables between the groups. In conclusion, *H. canis* infection should be considered in tick existence and/or a history of tick infestation. In dogs with thrombocytopenia and anaemia, *H. canis* infection should also be taken into consideration.

Keywords: *H.Canis*, Co Infection, Hematological, Clinical Findings

ORAL-79

COMPARISON OF THE ANALGESIC EFFECTS OF MORPHINE AND TRAMADOL AFTER TUMOR SURGERY IN DOGS

ÇAĞRI GÜLTEKİN[a], BAHATTİN KOÇ[b],

[a] Near East University, Faculty Of Veterinary Medicine, Department Of Surgery, Turkish Republic of Northern Cyprus

[b] Ankara University, Faculty Of Veterinary Medicine, Department Of Surgery, Ankara, Turkey

cagrgultekin@gmail.com

Abstract:

To examine the effects of tramadole on heart beat, breathing frequency, body temperature and pain score on dogs having pain caused by tumors.

Prospective, randomised clinical trial were planned for this purposes.

Excised dogs presenting with painfull tumours from 20 different breeds, involving both sexes were choosen.

After anesthesia induction with propofol, dogs were intubated and anesthesia continued with sevoflurane. After anesthesia stabilisation, tumours were excised with intraoperative administration of intravenous fentanyl citrate at 20 minute intervals. Postanesthesia, the dogs were separeted into two groups, one recieved morphine, the other was given tramadole. Dogs' pain scores, number of heart beats, breathing frequency and body temperature were recorded every 4hr during the postoperative period (0, 4th, 8th, 12th, 16th, 20th and 24th hours).

During the first 4 hours of postoperative recovery; morphine medicated dogs appeared calmer and more relaxed compared to dogs who recieved tramadole as the postoperative treatment. Anorexia lasted longer in the tramadole treatment group in comparison to the morphine group. Pain scores of morphine group were lower than tramadole group during the whole postoperative term.

The finding of this study, was that morphine provides a better analgesia than tramadole but tramadole has close postoperative analgesic effect to morphine.

Keywords: Dog, Morphine, Pain, Tramadol, Tumor.

ORAL-80

OZONE THERAPY IN VETERINARY MEDICINE

KEMAL VAROL[a]

[a] Erciyes University, Faculty Of Veterinary Medicine, Department Of Internal Medicine, Kayseri, Turkey

kmlvrl@yahoo.com

Abstract:

Ozone (O3) is a form of two atoms of atmospheric oxygen (O2) with high energy. The structure of the ozone molecule is unstable but oxygen is a stable molecule. Ozone was discovered by German chemist Christian Friedrich Schönbein in (1839). After its discovery, it was used as disinfectant at the begining. During the First World War (1915) it was used as medical ozone gas by A. Wolff on the German soldiers in the field of post-traumatic gangrene.

Following the medical application of ozone, 12 different effect of ozone on the organism have been stated. Some of the are; activation cell metabolism, stimulation of the red blood cell metabolism; improving oxygen carrying capacity of hemoglobin, increasing the amount of oxygen in the tissues, strengthening of the immune system and reducing free radical levels.

Taking into account the effects of the application of medical ozone in the organism; ozone / oxygen mixture can be applied intravenously, intramuscularly, intraarticularly, transdermally, intra-dermally, rectally, intradiscally. Moreover, topical use of ozone mixed by water and olive oil are also available.

In human medicine, ozone therapy have been used in; chronic wounds, chronic weariness syndrome, diseases of immune system, infectious diseases, inflammatory bowel diseases, as adjuvant in cancer therapy, macular degenerations, musculo-skeletal pathologies, dentistry, stomatology, some respiratory system pathologies, degenerative diseases (such as dementia), acumulatoin of local fat (such as sellulit) and burns.

In veterinary medicine, ozone has been used in the treatment of bacterial, viral, fungal and parasitic infections wound healing, tumors, orthopedic diseases, eye disease, kidney disease and gynecological disorders.

Ozone has also been used by veterinarians, as general disinfectant in the industrial facilities for animal slaughtering, collection of milk and production of cheese.

Keywords: Ozone, Ozone Therapy, Veterinary Medicine

ORAL-81

DETERMINING THE HEALING PROCESS OF OZONATED OLIVE OIL ON EXPERIMENTALLY INDUCED SKIN INFECTION BY *STAPHYLOCOCCUS AUREUS* IN RATS

KEMAL VAROL[a], FATİH MEHMET BİRDANE[b], İHSAN KELEŞ[a], LATİFE ÇAKIR BAYRAM[c], AYŞE NEDRET KOÇ[d]

[a] Erciyes University, Faculty Of Veterinary Medicine, Dept Of Int Medicine, Kayseri, Turkey
[b] Afyon Kocatepe University, Faculty Of Veterinary Medicine, Dept Of Int Medicine, Afyonkarahisar, Turkey
[c] Erciyes University, Faculty Of Veterinary Medicine, Dept Of Pathology, Kayseri, Turkey
[d] Erciyes University, Faculty Of Medicine, Dept Of Microbiology, Kayseri, Turkey

kmlvrl@yahoo.com

Abstract:

The aim of the present study was to determine the healing process of ozonated olive oil on experimentally induced skin infection by *Staphylococcus aureus* in rats. In this study 72 female Wister Albino rats aged between 14-16 weeks and weighing 220 g. were used as animal material. Infection was modified and created from the Kugelberg et al's (2005) superficial skin infection model.

Apart from *Staphylococcus aureus* infection, animals in Group 1.1 (n=18), received 0,20 g. ozonated olive oil, animals in Group 1.2 (n=18) received 0,20 g. fusidic acid to the infection side in their skin at 24, 36, 48, 60, 72, 84, 96 hours. Animals in Group 1.3 (n=18) did not received any treatment after *Staphylococcus aureus* infection. In Group 1.4 which was negative control group (n=18) received only serum physiologic at above mentioned periods. Swab and tissue samples before treatment and 24, 48, 96 hours after treatment were collected and evaluated for Groups 1.1, 1.2, 1.3 and 1.4

In some of the infected animals, fibrosis and remarkable regeneratory changes were observed in the subcutaneous tissue. In Group 1.1 24 hours after the inoculation Staphylococcus aureus agents were seen around the cut wound and deeper into the subcutaneous tissue. Twenty four hours after the inoculation, *Staphylococcus aureus* agents formed bacterial coloni clusters. At the same time, inflammatory cells, mainly polymorphonuclear leukocytes and macrophages, were seen around the clusters. Histological examination showed that each treatment modality was able to reduce the delay in wound repair.

As a result, after occurrence of the skin infection; ozonated olive oil had anti-microbial, anti-inflammatory effects and observed to have healing activity at 72 hours after infection. Furthermore, the effects of ozonated olive oil were comparable with the effects of fusidic acid which its activity has been proven in the skin infections with *Staphylococcus*.

Keywords: Ozone, Ozone Theraphy, Ozonated Olive Oil, Rat, *Staphylococcus Aureus*, Superfacial Skin Infeciton, Experimental Skin Infeciton.

ORAL-82

DETERMINATION OF GROWTH CHARACTERISTICS OF THE *FOOT AND MOUTH VIRUSES* (A, O, ASIA-1) IN BHK-21 AN30 AND BHK-21 AN73 CELL CULTURES

NESLİHAN TASÇENE[a], BANU BAYRI OZBİLGE[a], SADIK ONUR KARACAM[a], VELİ GÜLYAZ[a], MUSTAFA HASÖKSÜZ[b]

[a] Institute Of Foot And Mouth Disease , Ankara, Turkey
[b] Istanbul University, Faculty Of Veterinary Medicine, Department Of Virology, İstanbul, Turkey

vetnesli@yahoo.com

Abstract:

In this study, it was aimed to investigate BHK-21 An73 and BHK-21 An30 growth rate of cell cultures and the effects on *foot and mouth disease vaccine virus* strains (FMDV) titers. For this purpose, growth rate of suspension cell cultures of BHK-21 An73 and BHK-21 An30 were determined. A TUR 11, O TUR 07 and Asia-1/11 strains of foot and mouth disease (FMD) vaccine virus strains were produced separately on BHK-21 An30.. BHK-21 An30 cell amounts during seven incubation days of reached to peak level in monolayer form at the 4th day with 1,3x106/ml cell numbers, in suspension form at the 4th day with 4,1x105 cell numbers, cell amounts reached to peak level. BHK-21 An73 reached in monolayer form at the 6th day 2,2x106/ml cell numbers while in suspension form at the 3rd day with 2,8 x105 cell numbers. After the production of A, O and Asia-1 vaccine viruses, in suspension BHK-21 An73 cell cultures average of 146S values respectively; 0,51 µg/ml, 0,18 µg/ml and 0,16 µg/ml were detected while infective titers were determined as average DKID50 106,87/ml, DKID50 106,22/ml and DKID50 106,49/ml. After the production of A, O and Asia-1 vaccine viruses, in suspension BHK-21 An73 cell cultures average of 146S values respectively; 2,11 µg/ml, 2,59 µg/ml and 0,53 µg/ml were detected while infective titers were determined as average DKID50 106,99/ml, DKID50 107,82/ml and DKID50 106,37/ml. As a result, in the production of A, O and Asia-1 vaccine viruses in BHK-21 An73, resulted in higher 146S values and higher infective titers than BHK-21 An30. It is concluded that for FMD vaccine production the using of BHK-21 An73 cell culture is more appropriate for both of cost of manufacture and productive time.

Keywords: Foot And Mouth Disease, *FMDV* Vaccine Strains, BHK-21 Cell Culture

ORAL-83

SEROPREVALENCE AND RISK FACTORS ASSOCIATED WITH *CAPRINE ARTHRITIS-ENCEPHALITIS VIRUS* INFECTION IN GOATS IN IĞDIR REGION, TURKEY

ÖMER BARIŞ İNCE[a], AYTAÇ AKÇAY[b], MURAT ŞEVİK[c]

[a] Agriculture And Rural Development Support Institution, Department Of Project Management, Afyonkarahisar, Turkey

[b] Erciyes University, Faculty Of Veterinary Medicine, Department Of Biometrics, Kayseri, Turkey

[c] Veterinary Control Institute, Department Of Molecular Microbiology, Konya, Turkey

incebaris@gmail.com

Abstract:

Caprine arthritis encephalitis (CAE) is an economically important viral disease of goats. This cross-sectional study was conducted to estimate seroprevalence and to analyse risk factors related to *caprine arthritis-encephalitis virus* infection (*CAEV*) in goats in Iğdır region, in the Eastern Turkey. Potential CAEV risk factors were evaluated based on environmental conditions and provincial epidemiological data. During July 2013 and January 2015, a total of 476 serum samples were randomly collected from 34 goat farms. Serum samples were examined for *CAEV* antibodies using competitive enzyme linked immunosorbent assay (cELISA) . Additionally semi-structured questionnaire was administered to farm owners to get information. The associations were statistically evaluated for significance in univariable model. On an individual level, herd size, age, sex and rearing system recorded a significant association with seropositivity of CAEV infection ($P < 0.05$). A total of 26 goats were found seropositive with overall prevalence of 5.46%. On herd level, 10 farms out of 34 were found seropositive (29.41%). The results of this study provide useful information to consider epidemiological programs against *CAEV* infection in Turkey.

Keywords: *CAEV*, Epidemiology, Goats, Risk Factors

ORAL-84

EFFECTS OF PARENTERAL ADMINISTRATION OF LONG ACTING COPPER AND VITAMIN B12 ON HEMATOLOGICAL AND IMMUNE PARAMETERS OF PERIPARTURIENT DAIRY COWS

CANGİR UYARLAR[a], DUYGU BAKİ ACAR[a], ABUZER ACAR[a]

[a]Afyon Kocatepe University, Faculty of Veterinary Medicine, Afyonkarahisar, Turkey

abuzeracar@hotmail.com

Abstract:

Periparturient period is one of the most stressful periods which is associated with the most important metabolic disorders and immunosuppression. However copper is a well known essential trace mineral that related many hepatic enzymes and promotes the immune functions in many ways. The purposes of this study were to evaluate the effects of long acting copper and vitamin B12 on hematological and immune parameters of dairy cows during periparturient period. Forty five late pregnant dairy cows were selected as study material and divided into three groups of 15 cows as follows; a) Treatment (T), b) Negative Control (N), c) Positive Control (P). Cows in N received no any special condition throughout the study. Cows in P received intramuscular injection of Levamisole (0,2 mg/kg) (Actipar, Alke, Turkey) during both of two vaccinations in dry period. Cows in T received intramuscular administration of long acting copper (20 mg/ml) and vitamin B12 (1 mg/ml) (B.V.P. Copper+Vitamin B12 ® (Interhas, Turkey) with the dose of 6 ml/head. All cows received same diets before and after parturition. Blood samples were collected from all cows from coccygeal vein at the first, second and third days after parturition. All samples analyzed for White Blood Cells, Lymphocytes, Monocytes, Granulocytes, Red Blood Cells, Hemoglobin, Hematocrit, MCV (Mean Corpuscular Volume), MCH (Mean Corpuscular Hemoglobin), MCHC (Mean Corpuscular Hemoglobin Concentration), RDW (Red Blood Cell Distribution Width), PLT (Platelet Count), MPV (Mean Platelet Volume), PDW, PCT (Prolactin Count), ALT, AST, ALP, GGT and Total Immunoglobulin G. The number of total leucocytes and lymphocytes increased even though the incidence of metritis and mastitis decreased in group T ($p<0.05$). However, no any significant difference observed in other parameters ($p>0.05$). These results indicate that administration of long acting copper and vitamin B12 can be effective to supporting immune system of dairy cows during periparturient period.

Keywords: Periparturient Period, Dairy Cow, Copper, Vitamin B12, Hematological Parameters, Immune Parameters

ORAL-85

GENERALIZED PESTE DES PETITS RUMINANTS DISEASE (PPR) IN A SHEEP

HİKMET ÜN[a], NİHAT YUMUŞAK[b]

[a] Aksaray University, Faculty Of Veterinary Medicine, Department of Virology, Aksaray, Turkey

[b] Harran University, Faculty Of Veterinary Medicine, Department of Pathology, Şanlıurfa, Turkey

hikmetun@aksaray.edu.tr

Abstract:

Peste des petits ruminants (PPR) is a viral disease of goats and sheep characterized by fever, sores in the mouth, diarrhoea, pneumonia, and sometimes death. It is caused by a morbillivirus in the family of paramyxoviruses, which is related to rinderpest, measles and canine distemper. PPR is a notifiable disease internationally also nationally in Turkey. PPR is seen all over Turkey.

The present study describes natural outbreaks of Peste des Petits Ruminants Disease (PPR) affecting indigenous sheep in Şanlıurfa and identification of the etiological agent by Polymerase Chain Reaction (PCR)and histopathological tests. A disease form observed in indigenous sheep farms characterized by upper respiratory symptoms in Şanlıurfa. A systemic necropsy had been performed in a dead animal. 26 different tissues and organs were sampled. A commercial vaccine was used as a positive and water as a negative in the test. All samples were tested molecularly and histopathologically against PPR. The tests were used according to the Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, World Organisation for Animal Health 2014 web version. Amplification was detected in the extracted RNA's derived from tissues with PCR. Nucleocapsid protein gene of Morbillivirus was amplified by selected primers. It was observed compatible microscopy with PPR histopathologically. Test results were compatible with PPR andthe disease was diagnosed as PPR.

As a conclusion, total 26 specimens (100%) were found to be positive.These results provide evidence the presence of PPR virus in all tissues and organs before died.

Keywords: PPR, PCR, Sheep And Goat Diseases

ORAL-86

SEROLOGICAL DETECTION OF THE *BORDER DISEASE (BD)* AND *BOVINE VIRAL DIARRHEA (BVD) VIRUSES* IN THE SHEEP AND GOAT

GAYE BULUT[a], HİKMET ÜN[a], ŞÜKRÜ DURSUN[a], BAŞAK ÖZGERMEN[a], TAHİR KARAŞAHİN[a], İLKER ÇAMKERTEN[a]

[a] Aksaray University, Faculty Of Veterinary Medicine, Aksaray, Turkey

gayebulut@hotmail.com

Abstract:

This study investigates *Border disease virus (BDV)* which causes great economical losses in small ruminant flocks is a member of *pestivirus Flaviviridae* family and is closely related to classical *bovine viral diarrhea virus (BVDV)* in Aksaray, Konya and Karaman,TURKEY. For this purpose, blood samples were randomly collected from 446 (255 sheeps and 191 goats) small ruminant herds were analysed for the presence *BDV* using ELISA. 78 (31%) of 255 serum samples collected from sheep flocks and 21 (11%) of 191 serum samples collected from goat flocks were found seropositive by ELISA for pestivirus antibodies. In conclusion, the results of this study show that infection of *BDV* is present in small animal flocks in Aksaray, Konya and Karaman. The farmers should be informed about it and the studies should be expanded.

Keywords: Border Disease, Goat, Sheep

ORAL-87

FIRST MOLECULAR DETECTION AND CHARACTERIZATION OF CANINE *ADENOVIRUSES* IN TURKEY

SERHAT ÖZGERMEN[a], BAHATTİN TAYLAN KOÇ[b], BAŞAK BOZTOK ÖZGERMEN[c], TUBA ÇİĞDEM OĞUZOĞLU[a]

[a] Ankara University, Faculty of Veterinary Medicines, Department Of Virology, Ankara, Turkey

[b]Adnan Menderes University, Faculty Of Veterinary Medicine, Department Of Virology, Aydın, Turkey

[c] Aksaray University, Faculty of Veterinary Medicines, Department of Surgery, Aksaray, Turkey

s.ozgermen@gmail.com

Abstract:

Adenoviridae family include more than 100 different serotypes which can infect mammalian and avian species. *Mastadenovirus* genera belonging in this family, infects mammalian hosts. Two distinct types of *canine adenoviruses* (CAVs), which named as infectious *canine hepatitis virus* (*canine adenovirustype1*: *CAV-1*), *infectious canine laryngotracheitis virus* (*canine adenovirustype 2: CAV-2*), classified in this genus.

The aim of this study was to determine the presence of *CAVs* in non-vaccinated dogs. In the study whole blood samples of clinically healthy and non-vaccinated 50 dogs with different age, breed and gender were tested. A PCR was performed using a primer set that amplifies the hexon gene of *Mastadenoviruses* and only one dog was determined as positive. According to the result of phylogenetic analysis obtained from the positive sample, *CAV* field strain from Turkey was found more closely related to *ovine adenovirus* than canine subtypes.

There are not any declaration of *Adenovirus* infection among dogs in Turkey as we known and in this study the antigenic presence and molecular characterization of *mastadenoviruses* in dogs were presented. Further studies must be done to enlighten existence of interspecies transmission of Adenovirus different subtypes between dogs and sheep.

Keywords: *Canine Adenovirus, CAV*, Dog,

ORAL-88

EFFECT OF DIFFERENT PROTEIN LEVELS ON PERFORMANCE AND DIGESTIBILITY IN FINISHING MORKARAMAN LAMBS

İSMAİL KAYA[a], YÜCEL ÜNAL[b], TARKAN ŞAHİN[c], DİLEK A. ELMALI[d]

[a] Ondokuz Mayis University, Faculty of Veterinary Medicines, Samsun, Turkey
[b] Agri Ibrahim Cecen University, Faculty of Veterinary Medicines, Ağrı, Turkey
[c] Kafkas University, Faculty of Veterinary Medicines, Kars, Turkey
[d] Mustafa Kemal University, Faculty of Veterinary Medicines, Hatay, Turkey

ismayilkaya@hotmail.com

Abstract:

This study was performed to determine the effects of different levels of crude protein (CP) on live weight gain, digestibility in the finishing period of Morkaraman lambs. 24 lambs (31.39±0,61 kg) were divided randomly into 3 groups. The groups were fed with the diet 70% concentrate including 10, 13 and 16 % CP, and 30 % hay. Lambs were fed ad-libitum twice a day. Experiment was lasted for 50 days. Lambs were weighed on 0, 25 and 50 days after adaptation period. Body weight gain and daily weight gain were estimated. In the last week of the study, digestibility was calculated by total feces collection. The daily live weight gain were lower of the 10% CP group than the 13 and 16 % CP groups ($p<0.05$). The DM digestibility and OM levels of diets were not effected by the protein level. However, CP digestibility was the highest in 16 % CP group ($p<0.05$). In conclusion, it may be adviced to feed the Morkaraman lambs in the finishing period with 16 % CP breeders.

Keywords: Morkaraman Lamb, Protein Level, Performance, Digestibility

ORAL-89

PIPERLONGUMINE: A PROMISING SMALL MOLECULE FOR CANCER TREATMENT

GÖRKEM KISMALI[a]

[a] Ankara University, Faculty Of Veterinary Medicine, Department Of Biochemistry, Ankara, Turkey

gorkemkismali@yahoo.com

Abstract:

Natural compounds have been used in the treatment of many diseases and are of interest to researchers both in their natural forms and their synthetic modification. Along with conventional treatment methods, medicinal plants and their phytoconstituents have always been accepted as complementary and alternative choice for the treatment of cancer, and nutraceuticals have been proved to have anticancer activity in experimental studies. Piperlonguminine , isolated from the Piper species, shows many biological activities. This natural compound, a alkaloid amide, from the Piper longum (Piperaceae) has recently been introduced as a potent anticancer agent, which binds to the active sites of several key cellular antioxidants. This naturally occurring small molecule recently identified to be toxic selectively to cancer cells in vitro and in vivo through elevation of the cellular levels of reactive oxygen species (ROS) and cellular cross‐linking events like irreversible protein glutathionylation mechanisms. The direct cytotoxic activity of piperlongumine against tumor cell lines has been described in our studies as well as many other studies. Piperlongumine is able to kill cancer cells of several histotypes including hematological and solid tumors. Its cytotoxicity was observed in the micromolar range in tumor cells, but not in normal cells. In our studies, this compound showed selective cytotoxicity over cancer cells and presents only a weak activity in normal cells. Additionally, we for the first time provide direct evidences that Piperlongumine has a potent antiangiogenic activity in the in vitro and in ovo models that can support the tumor preventive action of a natural molecule, piperlongumine. Thus suppression of angiogenic pathways may provide opportunities for both prevention and treatment of cancer. We will discuss the potential of piperlongumine in suppression of antioxidant and inflammatory pathways and its role in prevention and therapy of cancer.

Keywords: Piperlongumine, Cancer, Angiogenesis, Natural Compound, Apoptosis

ORAL-90
SOCIO-ECONOMIC ANALYSIS OF CATTLE ENTERPRISES OF AKSARAY PROVINCE

ERŞAN SEVER[a], ARİF İĞDELİ[a], VOLKAN HAN[a]

[a]Aksaray University, Aksaray, Turkey

severersan@hotmail.com

Abstract:

Increasing population combined with economic development increase demand for agricultural products in the world. Parallel to this, food of animal origin becomes increasingly more important. Improving both the quality and quantity of the animal products helps not only reduce production costs but also promotes competiveness.

Varying ecological and topological structure of the agricultural land in different provinces of Turkey leads to differing distribution of agricultural operational units by region. This situation has an impact on the structural conditions of the cattle enterprises as well. Determining the socio-economic structure of livestock enterprises is important for achieving a balanced distribution of the labor force and optimization of the input costs increasing production efficiency and minimizing uncertainty caused by the natural conditions. In light of the above, this study aims at determining the socio-economic structure of enterprises operating in Aksaray province. Surveys were conducted on 10 different settlements (villages and municipalities) in order that the survey sample could represent the population. According to the results of the research, it has been determined that a crucial part of the cattle breeders who didn't get education and expert support about milk and cattle breeding. According to another result obtained from survey, important part of the cattle enterprises have membership to agricultural establishments. In addition, it has been stated that cattle enterprises operating in Aksaray are predominantly small and medium sized. According to another result obtained within the scope of the research, a significant part of the enterprises expect credit and incentive expectation from government.

Keywords: Socio-economic structure, cattle enterprises, Aksaray

ORAL-91

EFFECTS OF PLATINUM-BASED CHEMOTHERAPEUTIC AGENTS COMBINED WITH GEMCITABINE ON CASPASES ACTIVATION IN PROSTATE CANCER CELL LINE

HATİCE ARZU ÖZYÜREK[a], GÜLCAN AVCI[b], NURAY VAROL[a]

[a] Afyon Kocatepe University, Faculty Of Medicine, Department Of Medical Genetics, Afyonkarahisar, Turkey

[b] Afyon Kocatepe University, Faculty Of Veterinary Medicine, Department Of Biochemistry, Afyonkarahisar, Turkey

gulcanavci@hotmail.com

Abstract:

Prostate cancer is the second frequently diagnosed cancer in males worldwide. Current researches are focused on combining targeted therapy with platinum-based chemotherapy for achieve additional avantages for spesific patient populations. Use of platinum-based combination chemotherapy followed by surgical resection or radiation ensures the most benefit therapy.

The aim of this study was to compare the effectiveness of platinum-based chemotherapeutics Cisplatin and Oxaliplatin used single or combination doses with Gemsitabine on apoptosis and cell proliferation of DU145 human prostate cancer cell line. The effects of drugs alone or combinations on cell viability were determined by WST-1 method. The mRNA expression levels of Caspase-3, Caspase-8, Caspase-9 genes were analyzed by real time polymerase chain reaction (RT-PCR).

As a result, when evaluated the mRNA levels of Caspase-8 and Caspase-9 genes that play role intrinsic and extrinsic pathway, it was found that Cisplatin induced apoptosis by intrinsic pathway, and Oxaliplatin induced apoptosis by extrinsic pathway. It is determined that, only Oxaliplatin or along with Gemsitabin combinations are more effective on apoptotic pathway than Cisplatin.

Key Words: Oxaliplatin, Cisplatin, Gemsitabine, Prostate cancer, Caspases

Keywords: Oxaliplatin, Cisplatin, Gemsitabine, Prostate Cancer, Caspases

ORAL-92

PRODUCTION AND MARKETING PROBLEMS OF CATTLE ENTERPRENEURS: THE CASE OF AKSARAY PROVINCE

ERŞAN SEVER[a], VOLKAN HAN[a], ARİF İĞDELİ[a]

[a] Aksaray University, Aksaray, Turkey

severersan@hotmail.com

Abstract:

It is widely accepted that animal husbandry sector producing meat and dairy products should be given priority for improving nutrition conditions and reaching higher levels of development. Assuming that economically and socially developed countries have better nutritional conditions than the developing countries, one can argue that there is a causal relationship between development and a balanced, quality nutrition.

In this context, in addition to increasing the output of animal products, opting for reaching the optimum level of cost-quality combination will serve capturing the desired level of both consumer and producer expectations. On the other hand, solving the problems faced in the marketing process, which contains all stages of taking products from producers to consumers, is important for both consumers and producers. This study investigates the major problems faced by the livestock enterprises of Aksaray province. The results of the analysis show that enterprises can be examined under two clusters. Accordingly, the enterprises in the first cluster are larger than the enterprises in the second cluster. Cattle enterprises in the first cluster participate at a higher level in the judgment that the feed prices are higher than those in the second cluster. Moreover, enterprises in the first cluster are more likely agree that loan interest rates, vehicle and transportation costs are higher than in the second cluster. On the other hand, participants thought that there are not enough knowledgeable staff about breeding and government support is insufficient in milk and cattle breeding.

Keywords: Production, Marketing, Cattle Enterpreneurs, Aksaray

ORAL-93

THE ANNUAL PRODUCTIVITY OF *SPIRULINA PLATENSIS* CULTURED IN OUTDOOR PONDS

BURCU AK[a], OYA IŞIK[a], LEYLA USLU[a], ŞEVKET GÖKPINAR[b]

[a] Cukurova University, Faculty of Fisheries, Adana, Turkey
[b] Ege University, Faculty of Fisheries, İzmir, Turkey

bak@cu.edu.tr

Abstract:

The general purpose of *Spirulina platensis* production is to provide protein resource for people and also to benefit from the richness of its biochemical structure. *S. platensis* known for 60-70% protein, vitamins B12, E, C, fatty acid GLA, minerals of Fe and Ca, chlorophyll a, phycocyanin pigment contents is used as a supplement food for immune systems, to enrich the soil, feed for animals, widely.

The aim of the research was to determine the biomass (dry matter) production throughout the year in the ponds in the greenhouse at the condition of Mediterranean climate. During observation, temperature, pH and optical density were measured, weekly.

Spirulina was cultured in *Spirulina* medium (Schlösser, 1982), in two fiberglass ponds, 1x5x0.2 m in size 1m3 capacity for each. The cultures were aerated by the paddle wheels at a flow rate about 20 cm s-1, continuously. Optical density was measured at 680nm (Costa et al. 2003) by a UV-visible spectrophotometer to determine the culture concentration, and biomass was determined according to the method developed by Boussiba et al. (1992).

At the end of the year, the average dry matter of *S. platensis* was 2.12±0.02 gL-1. According to the seasons, the production of biomass were observed as 1.11±0.01 gL-1, 2.28±0.03 gL-1, 2.68±0.01 gL-1, 2.42±0.02 gL-1 for winter, spring, summer and autumn, respectively, and optical densities were determined as 1.04±0.003, 2.01±0.06, 2.51±0.05, 2.40±0.004 for winter, spring, summer and autumn, respectively. The temperatures of the cultures were 20±1°C, 27±3°C, 36.5±2.1°C, 32±5°C for winter, spring, summer and autumn, respectively. The mean of the pH values of the year was determined as 9.91±0.04. Consequently, *S. platensis* productivity was the best in summer.

Keywords: *Spirulina Platensis*, Annual Productivity, Outdoor Culture, Biomass

ORAL-94

RELATIONSHIP BETWEEN THE SERUM THYROID HORMONES AND LIPID PROFILE IN CLINICALLY HEALTHY DAMASCUS GOATS

MİYASE ÇINAR[a]

[a]Kırıkkale University, Faculty of Veterinary Medicine, Kırıkkale, Turkey

miyasevet@yahoo.com

Abstract:

Thyroid is an endocrine gland, and it serves to secrete mainly thyroid hormones. These hormones effect lipid metabolism by increasing lipolysis in adipose tissue. It has been well known that there is a variation among species in the level of total cholesterol, triglyceride and lipoproteins in domestic animals. Many factors such as age, gender, breed, season have an effect on thyroid hormones concentrations in the blood of animals. The aim of the study was to determine the changes in serum concentrations of thyroid hormones and lipid profile, and also to determine relationship between the measured parameters in two age groups. A total of 60 blood samples were collected from clinically healthy 30 kids (6 months) and 30 adults (2-3 years) male Damascus goats. Serum concentrations of triglyceride, total cholesterol, low density lipoproteins (LDL-cholesterol), very low density lipoproteins (VLDL-cholesterol), and high density lipoproteins (HDL-cholesterol) and their correlations with the concentrations of total triiodothyronine (T3), total thyroxine (T4), free triiodothyronine (FT3) and free-thyroxine (FT4) were investigated. Serum total cholesterol and HDL-cholesterol concentrations were significantly higher in kids, compared to adult goats. Serum triglyceride, T3, FT3 and FT4 concentrations were significantly higher in the adults, compared to kid goats. Serum T3 had a negative correlation with total cholesterol, triglyceride, LDL, VLDL-cholesterol in kid goats. There were positive correlations between T4 and FT3; total cholesterol and HDL, LDL-cholesterol; HDL and LDL-cholesterol; triglyceride and VLDL-cholesterol in both kid and adult goats. Also, total cholesterol had a positive correlation with triglyceride, VLDL-cholesterol in kids. These results demonstrate that T3 hormone had a correlation with the serum lipids and lipoproteins in kid goats.

Keywords: Damascus Goat, Lipid Profile, Thyroid Hormones

ORAL-95

NEOSPORA CANINUM INFECTION WITH GRANULOMATOUS PANOPHTHALMITIS IN DOG: RARELY SYSTEMIC AND ENTEROEPITHELIAL NEOSPOROSIS

LATİFE ÇAKIR BAYRAM[a], TUĞCE SÜMER[b], NUSRET APAYDIN[a], ÖZNUR ASLAN[a], OĞUZ KUL[b],GÖRKEM EKEBAŞ[a]

[a] Erciyes University, Faculty of Veterinary Medicine, Kayseri, Turkey
[b] Kırıkkale University, Faculty of Veterinary Medicine, Kırıkkale, Turkey

lcakir@erciyes.edu.tr

Abstract:

While, in dogs, neosporosis has often showed skin lesions, lymphadenitis and abortus characterized clinical findings, uveitis is a well known diagnostic criteria for *Neospora caninum* infections.

In this study in a five years old, female Terrier breed dog clinically followed as Panophthalmitis and prediagnosed as tumors, was etiologically detected as *N. caninum* and extremely rare observed signs of uveitis and systemic-enteroepithelial neosporosis results were reported. To the tissue sections, specific indirect immunoperoxidase technique were applied.

In a siliaris of corpus and choroida, neutrophil leukocyte and macrophages infiltration and intense edema found interstitial space and hyaline degeneration in connective tissue fibers, widespread necrosis were observed.

Pyogranulamatosis focused to the spreading to cornea and the periscleral tissue at the end and with corpus vitreum leukocytes in common and retinal degeneration and necrosis were observed.The optical disc and nerves were not affected.

All lesions identified in these area such as uvea in eye, sclera cornea and retina, intestinal villi and crypts epithelium, and rarely in proprial macrophages widespread and severe immunopositivity were found and *Neospora caninum* antibody in cardiac myocytes and hepatocytes and renal tubul and glomerulus, intense *N.caninum* immunoreactivity were of at most importance.

As a result, uveitis or panoftalmitis were not included in the clinical symptoms of *N.caninum* infection but they were characteristic findings for systemic toxoplasmosis.

However, for *N. caninum* infections, as both intermediate and final host, in dogs, so far in only one case Enteroepithelial development forms were defined as well as the intestine symptoms were drew attention.

In dogs, the subclinically of *N. caninum* infection could be converted into a systemic and lethal neosporosis form due to the pregnancy, immunosuppression, concurrent viral infection in the intestine form were suggested and in many cases could be shown simultaneously.

Keywords: Dog, *Neospora Caninum*,Systemic Infection, Uveitis

ORAL-96

ANTI-MÜLLERIAN HORMONE VARIATIONS IN DOMESTIC CAT

İLKNUR PİR YAĞCI[a], İBRAHİM MERT POLAT[a], MERT PEKCAN[b]

[a] Kırıkkale University, Faculty Of Veterinary Medicine, Department Of Obstetrics And Gyneacology, Kırıkkale, Turkey

[b] Ankara University, Faculty Of Veterinary Medicine, Department Of Biochemistry, Ankara, Turkey

ilknurpiryagci@gmail.com

Abstract:

Anti-Müllerian hormone (AMH) belongs to the Transforming Growth Factor-ß (TGF-ß) family and produces only in ovaries by the granulosa cells of growing follicles in females. The aim of this study was to evaluate the individual AMH levels before and after ovariohysterectomy (OHE), to demonstrate mean AMH alterations in the absence of ovaries with blood sampling in different days after OHE and to demonstrate the age-related changes in serum AMH levels in domestic cats. Totally 30 domestic cats were used for this study.The animals were allocated into 2 groups according to age; < 1 year old (Group 1, n=13) and > 1 year old (Group 2, n=17). Mean serum AMH concentrations of all cats at day 0 and day 3rd were found 3.15±2.25 ng/ml and 0.38±0.21 ng/ml, respectively. Ten days after surgery, AMH levels of all spayed cats were belows the minimum detectable concentration of the ELISA kit (< 0.08 ng/ml). According to the age classification, the age of cats were highly correlated with AMH levels at day 0 (r_s=0.293, $P< 0.05$) and at day 3 (r_s=0.410, $P< 0.01$). It can be concluded that measurement of serum AMH concentrations is adequate for assessing the functional ovarian tissue in cats.

Keywords: Cat, Anti-Müllerian Hormone, Ovary, Intact, Spayed

ORAL-97

IN VITRO ANTIFUNGAL ACTIVITY OF NANO BIOSILVER PARTICLES AGAINST *CANDIDA ALBICANS*

İBRAHİM MERT POLAT[a], İLKNUR PİR YAĞCI[a], NEBAHAT AYTUNA ÇERÇİ[b], MUSTAFA TÜRK[b], HAKAN ÇİFTÇİ[c], BUĞRAHAN BEKİR YAĞCI[d]

[a] Kırıkkale University, Faculty Of Veterinary Medicine, Department Of Obstetrics And Gyneacology, Kırıkkale, Turkey

[b] Kırıkkale University, Scientific And Technological Reseach Laboratories, Kırıkkale, Turkey

[c] Kırıkkale University, Vocational School, Department Of Chemistry And Chemical Process Technology, Kırıkkale, Turkey

[d] Kırıkkale University, Faculty Of Veterinary Medicine, Department Of Internal Medicine, Kırıkkale, Turkey Y

vethekmert@gmail.com

Abstract:

Fungal infections have become a major public health problem especially in hospital settings. *C.albicans* is considered the main pathogen in fungal urovaginal infections in women and female domestic animals. The objective of this study was to evaluate the in vitro antifungal effects of nano biosilver compound against *Candida albicans* in order to introduce new therapeutic strategies for candidiasis in future. For this purpose 80 *Candida albicans* fresh cultures were used. Antifungal activity tests of samples were performed according to modified ASTM E2149 standarts. 2 ppm of nano biosilver solution was taken into the sterile dishes for treatment. Subsequently, fresh culture (2.9x105 cells) and 50 mL of serial diluted inoculum were mixed into the dishes. The dishes were incubated in shaker-incubator at 35 ˚C for 24 hours and the inoculations were performed at 0,1 and 24 hours into the Plate Count Agar. Therefore, synchronous control inoculations were performed to compare the antifungal activity. One hour after treatment, colonies were decreased dramatically from 2.8x105 to 1.3x10 5 cfu/mL ($P<0.05$). Colony formation units of *C.albicans* could not be calculate 24 hours after in treatment group ($P<0.05$). In control group, mean colony formation unites was increased from 2.8x105 to 4.9x105 ($P<0.05$). Our results indicate that nano biosilver can be considered an excellent compound to eliminate *C.albicans* strains and we discuss it has a potential for using as a therapeutic drug. In vivo studies is required to elucidate the exact efficiency of this chemical in domestic animals.

Keywords: Nano Biosilver, *Candida Albicans*, Treatment, In Vitro

ORAL-98

ANTICANCER POTENTIAL OF CAPSAICIN

ÖĞÜNÇ MERAL[a]

[a] Ankara University, Faculty Of Veterinary Medicine, Department Of Biochemistry, Ankara, Turkey

oguncmeral@yahoo.com

Abstract:

Despite the enormous amount of research and developments, cancer is the second leading cause of death worldwide. Over the past several decades natural compounds have been popular subject area of chemoprevention since they displayed inhibitory effects against proliferation and metastasis of cancer cells. Capsaicin (trans-8-methyl-N-vanillyl-6-nonenamide) is the major pungent component in hot peppers and the effects of capsaicin on cancer have been studied extensively. The anticancer activity of capsaicin has been studied for different cancer types however its role in cancer still remains controversial. Many studies have shown that capsaicin has chemopreventive and chemotherapeutic effects. Also various in vivo studies have suggested that capsaicin has antitumorigenic activity. According to our findings capsaicin has potential chemosentizing effect against to chemotherapeutic agents on gastric cancer. Additionally we showed that this natural compound has anticancer activity on prostate cancer. Conversely, some researchers have concluded that capsaicin may act as a carcinogen or co-carcinogen. This review highlights the antitumor activity of capsaicin in various types of cancer.

Keywords: Cancer, Capsaicin, Chemoprevention, Natural Compounds

ORAL-99

LIVE WEIGHT AND SOME MORPHOLOGICAL CHARACTERISTICS OF ZAĞAR, ZERDAVA AND ÇATALBURUN DOGS

FATMA TÜLİN ÖZBAŞER[a], FATİH ATASOY[b], BANU YÜCEER ÖZKUL[b], BORA ÖZARSLAN[c]

[a] Ari Farma Limited Company, Ankara, Turkey
[b] Ankara University, Faculty Of Veterinary Medicine, Department Of Animal Husbandry, Ankara, Turkey
[c] Kırıkkale University, Faculty of Veterinary Medicine, Department of Animal Husbandry, Ankara, Turkey

ftulin@gmail.com

Abstract:

The aim of this study was to determine the live weight and some morphological characteristics (wither and rump height, body lenght, chest width, chesth depth and circumference, fore and hind wrist circumference, head length, muzzle length, ear length and width, distance between eyes and ears, nozzle circumference) 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 (Trakya region, Manisa, Burdur and Afyonkarahisar) and Zerdava (Trabzon and around)). The data were obtained from dogs at ages twelve month and older. The data for Zağar, Zerdava and Çatalburun dogs in the study means were, respectively 18.23±0.38, 15.95±0.36 and 19.69±0.41 kg for live weight, 50.51±0.40, 48.07±0.25 and 48.27±0.37cm for wither height, 50.28±0.40, 47.10±0.28 and 49.01±0.36 cm for rump height, 50.28±0.40, 52.18±0.31 and 53,95±0,49 cm for body lenght. It has been seen that the numbers of these dogs are in decline and the dogs were degenerated crossing with other dogs. In this study, measurements and live weights were taken for the dogs that have common or similar features determined previously. As a result, an important step has been taken with this study for the goals of Zağar, Zerdava and Çatalburun dogs to become registered, protected and increased in numbers as a new breed.

Keywords: Body Traits, Çatalburun, Dog, Live Weight, Zerdava, Zağar

ORAL-100

IS ACUTE PHASE REACTION, THE ALARM SYSTEM OF INFECTION AND INFLAMMATION IN VETERINARY MEDICINE?

OSMAN SAFA TERZİ[a], MEHMET ŞAHAL[a], ŞULE DÜZLÜ[a], DUYGU KAHRAMAN[a]

[a] Ankara University, Faculty Of Veterinary Medicine, Department Of Internal Medicine, Ankara, Turkey

osmansafaterzi@gmail.com

Abstract:

Acute phase reaction (APR) is the physiological response to infections and injuries includes regional inflammation and the starting point of events leading to a systemic response. Additionally, APR provides to reintegrate homeostasis and restrict microbial growth independently from antibodies. In human medicine acute phase proteins (APPs) have been used as biomarkers of infection, inflammation, trauma and stress for a long while but it has recently been utilized in the veterinary science. However, remarkable progression has been made about APPs as biomarkers in domestic animals over recent years. Haptoglobin (Hp) and α1 acid glycoprotein (AGP) and serum amyloid A (SAA) have proved as biomarkers in cats and cattle. SAA, Hp, AGP, C-reactive protein (CRP) have described as biomarkers in canine medicine. Most positive APPs are glycoproteins synthesized especially by hepatocytes and released into the bloodstream. The diagnostic use of APPs and their application in monitoring treatment; which can be considered one of the most interesting application during clinical practice, will be discussed in this review.

Keywords: Acute Phase Reaction, APR, Infection

ORAL-101

COMPARISON OF RESULTS OF THE SUPEROVULATION IN DAK COWS GROWN IN DIFFERENT LOCATIONS

TAHİR KARAŞAHİN[a], UMUT TAŞDEMİR[a], MUHARREM SATILMIŞ[b], SEDAT HAMDİ KIZIL[b], ORHAN AKMAN[c], ŞÜKRÜ DURSUN[a]

[a] Aksaray University, Faculty of Veterinary Medicine, Aksaray, Turkey
[b] Lalahan Livestock Central Research Institue, Ankara, Turkey
[c] Atatürk University, Faculty of Veterinary Medicine, Erzurum, Turkey

tahirkarasahin@gmail.com

Abstract:

The purpose of this study is to compare the results of the superovulation implementation between Eastern Anatolia Red (DAK) cows that are bred in their original location with the altitude of 2000 meters and a cold climate in Erzurum, and DAK cows bread in Ankara conditions with the altitude of 950 meters. The study used DAK cows brought from Erzurum and adapted to Ankara (Lalahan Livestock Central Institute), and DAK cows in the province of Erzurum (East Anatolian Agricultural Research Institute). Intravaginal CIDR (Pfizer İnc., New York, USA), containing 1.38 g of progesterone was applied to cows in both groups for 9 days without regards to their estrous cycle periods. A total of 400 units of FSH (Folltropin 400 mg NIH-FSH-P1, Bioniche Animal Health Inc., Ontario, CANADA), was intramuscularly applied to the cows in decreasing doses for four days following the 7th day of CIDR application, twice a day. 150 µg d-cloprostenol was given with the 5th FSH application, and CIDR was removed with the 6th CIDR application. Cows were inseminated 2 times in the 12th and 24th hours after the last FSH application. 7 days after the first insemination, their uterus irrigation was conducted and embryos were obtained. The differences between the groups were not found significant ($P>0.05$) in terms of the numbers and ratios of the obtained embryos, and unfertilized oocytes. A higher number of higher quality embryos were obtained from DAK cows in Erzurum, their natural breeding location. It was decided that the cows show higher reproduction performance in the natural breeding conditions they are adapted to.

Keywords: Dak, Erzurum, Ankara, Süperovulation

ORAL-102
ETHNOVETERINARY MEDICINAL PLANTS OF SIVAS REGION, TURKEY

ÇAĞRI ÇAĞLAR SİNMEZ[a]

[a] Erciyes University, Faculy Of Veterinary Medicine, Kayseri, Turkey

cagribey6038@hotmail.com

Abstract:

The study was conducted in Sivas region of Turkey, to collect, analyze and evaluate the ethnoveterinary knowledge about medicinal plants.

An ethnoveterinary survey was carried out in the Sivas region, Turkey. It is performed semi-structured interviews with 425 informants, mainly elderly breeders and farmers, identified the plant reported and analyzed the results, comparing them with those from other territories.

Fourty eight veterinary medicinal plant species belonging to 34 families were recorded. Their vernacular names, properties, preparations, mode and popular uses are presented. Of these families, Poaceae, Rosaceae, Solanaceae and Asteraceae are the most commonly represented, comprising 8.3, 8.3, 8.3 and 6.2%, respectively. The most frequently used plants were Pinus nigra, Allium sativum, Olium olivae and Juniperus oxycedrus. These remedies are mostly for cows, calves, sheep, horses, dogs and poultry. A total of 79 animal ailments were reported, of which Open Skin Wounds, Ruminal Tympania and Fracture were the most frequently reported ailments.

The ethnoveterinary knowledge about medicinal plant use is still alive in the studied region. In many cases, the use of these remedies in veterinary medicine is fully consistent with their use in human medicine. Additionally these indigenous knowledge and practices should be supplemented by scientific methods to evaluate the safety, efficacy and dosage of the common medicinal plants through phytochemical and antimicrobial experimentation to determine appropriate drug development and dosage in pharmacological laboratory.

Keywords: Ethnoveterinary, Medicinal Plants, Sivas, Traditional Knowledge, Turkey

ORAL-103

THE CASE OF *NYCTOTHERUS SP.* IN *CHAMAELEO CALYPTRATUS* IN TURKEY

NAFİYE KOÇ[a], AYŞE ÇAKMAK[a], SERPİL NALBANTOĞLU[a]

[a] Ankara University Faculty of Veterinary Medicine Department of Parasitology, Ankara, Turkey

nafiyekocc@gmail.com

Abstract:

Parasitic infections are quite common among exotic lizards and cause severe problems in both nature and private captive breeding. *Nyctotherus* is a ciliated protozoa found in fecal samples from a wide range of reptile gastrointestinal tracts. These protozoa also can be located on the lesions in the intestinal lumen.

In current case, *Nyctotherus* trophozoites and cysts have been determined in the stool of a 9 year old male Chamaeleo calyptratus by native and flotation methods in Ankara University Faculty of Veterinary Medicine. Related clinical symptoms was observed as diarrhoea, lack of appetite and depression. The average size of the trophozites was 142.8x79.3µm, and that of cysts was 79.3x55.5µm. Metronidazole was used for the treatment and it's observed that was efficient in this case.

This is the first report on *Nyctotherus of Chamaeleo calyptratus* in Turkey. It is concluded that *Nyctotherus* should be considered in reptiles especially in older ones and the cases of immune deficiency. Although pathogenicity is suspicious, the treatment may be essential in some cases.

Keywords: *Nyctotherus Sp*., Ciliated Protozoa, *Chamaeleo Calyptratus*, Metronidazole, Turkey

ORAL-104

USE OF THE SERUM AND MILK BIOCHEMISTRY PROFILE IN THE ASSESSMENT OF HEALTH STATUS IN DAIRY COWS WITH SUBCLINICAL MASTITIS

TEVHİDE SEL[a], GÜZİN ÇAMKERTEN[b]

[a] Ankara University, Faculty Of Veterinary Medicine, Department Of Biochemistry, Ankara, Turkey

[b] Aksaray University, Technical Sciences Vocational School, Aksaray

tevhidesel@gmail.com

Abstract:

Determination of biochemistry profile of biological materials, like serum, blood, milk or tissue, can provide valuable information in detection, prognosis and monitoring of diseases and planning therapeutic options and monitoring response to treatment and for establishing initial baseline parameters for a patient. Mastitis is one of the main disease problem in dairy cows. Subclinical mastitis is not easily recognized visually or by inspection and is characterized by milk that looks normal with high somatic cells and bacteria. Subclinical mastitis has a major impact on animal welfare, productivity performances and then economical losses to the dairy industry. In this study serum and milk biochemistry of dairy cows with subclinical mastitis have been reviewed, along with associated advantages and disadvantages.

Keywords: Key Words: Subclinical Mastitis, Biochemistry Profile, Dairy Cows

ORAL-105

THE EFFECTS OF DONKEY MILK AND KEFIR ON LIVER TISSUE MDA LEVELS IN EHRLICH ASCITES SOLID TUMOR IN MICE

BURCU MENEKŞE BALKAN[a], GÜZİN ÇAMKERTEN[b], ÖĞÜNÇ MERAL[c], ALİ BURAK BALKAN[c], TEVHİDE SEL[c]

[a] Mehmet Akif Ersoy University, Faculty Of Veterinary Medicine, Department Of Biochemistry, Burdur, Turkey

[b] Aksaray University, Faculty Of Veterinary Medicine, Department Of Biochemistry, Aksaray, Turkey

[c] Ankara University, Faculty Of Veterinary Medicine, Department Of Biochemistry, Ankara, Turkey

burcualpaslan@yahoo.com

Abstract:

Donkey milk has a very similar content to human milk and has been reported to show anti-tumor effect. Kefir is a fermented and cultured product that has beneficial properties including antitumor, hypoallergenic, antioxidant, antiinflammatory activities. Breast cancer is the leading cancer in women and Ehrlich ascites carcinoma (EAC) is one of the common experimental tumor which was originated from a spontaneous breast cancer in a female mouse. It is aimed to measure the effects of donkey milk and kefir on liver tissue malondialdehyde (MDA) levels in ehrlich ascites solid tumor in mice.

31 male mice aged and weight between 12-16 weeks and 25-40 g respectively were used. Mice were divided into four groups. Group 1 (negative control), group 2 (positive control), group 3 (study group) and, group 4 (study group). Ehrlich ascites carcinoma cells were inoculated subcutan (2.5 × 106 cells/Mouse) in group 2,3 and 4. Group I and group 2 were given 0.5 ml normal saline and served as and negative and positive control group. Group III administered 0,5 ml donkey milk while group IV received 0,5 ml of donkey milk kefir orally. Liver and kidney tissue MDA levels were measured spectrophotometrically according to the methods of Yoshioka et all.

MDA levels in liver tissue in grup 1, 2, 3, and 4 were measured 2,93 nmol/mg protein, 35, 97 nmol/mg protein, 27,62 nmol/mg protein and 7,64 nmol/mg protein respectively.

Donkey milk kefir decrease the MDA level in liver tissue (P0.05). Donkey's milk kefir has protective effect on Ehrlich Acites Tumor induced liver lipid peroxidation in mice.

Keywords: Key Words: Donkey Milk, Kefir, Malondialdehyte, Liver

ORAL-106

CLINICAL ASSESSMENT AND OPERATIVE TREATMENT OF ABDOMINAL WALL HERNIA IN A NEWBORN SIMMENTAL CALF

MUHARREM EROL[a], ALİ CESUR ONMAZ[b], GULTEKİN ATALAN[a], HANİFİ EROL[a], ZAFER DOĞAN[a]

[a] Erciyes University, Faculty of Veterinary Medicine, Department Of Surgery, Kayseri, Turkey
[b] Erciyes University, Veterinary Faculty, Department Of Internal Medicine, Kayseri, Turkey

aconmaz@erciyes.edu.tr

Abstract:

A one-week-old Simmental calf was admitted to the Large Animal Hospital of the Veterinary Faculty of Erciyes University with a story of an abnormal body posture that involves the entire abdomen. A lateral hernia due to a weakness or defects in the fibromuscular tissue (fascia and muscle) of the right abdominal wall, resulting in a protrusion of abdominal contents, was diagnosed by physical examination, ultrasonography and x-rays. It caused a noticeable bulging, while all the other clinical and laboratory parameters remained unchanged. Because the bulge could not be reduced, surgical repair was aimed. A polypropylene mesh sack of 10 x 10 cm is sewn around the abdominal wall hernia on the right side. After surgery, the intestines were not damaged and the newborn calf did not show any signs of digestion problems. This case indicates that abdominal wall hernia in calves can be surgically treated successfully.

Keywords: Calf, Abdominal Wall Hernia, Polypropylene Mesh, Surgery

ORAL-107

INFLUENCE OF SOME ENVIRONMENTAL FACTORS ON GROWTH TRAITS OF AKKARAMAN LAMBS IN BREEDER FLOCKS IN KAYSERI PROVINCE IN TURKEY

DAVUT BAYRAM[a], MESUT KIRBAŞ[b]

[a] Erciyes University, Facultyof Veterinary Medicine, Kayseri, Turkey
[b] Bahri Dağdaş International Agricultural Research Institute, Konya, Turkey

dbayram@erciyes.edu.tr

Abstract:

The aim of this study was carried out to determine the growth traits of Akkaraman ('White Karaman' in Turkish, WK) lambs in breeder flocks in Kayseri Province in Turkey. Data were collected from 24656 head lambs born between the years of 2012 and 2015 three different breeding region (İncesu, Kocasinan and Pinarbasi) of Kayseri Province. In this study, the effects of year of birth, breeding region, dam's age, birth type, lamb's sex, on the birth weight (BW), live weight at day 90 (LW) and average daily weight gain (ADWG) of lambs were investigated. Survival rates of lambs up to weaning were determined based on years. The overall BW, LW at day 90, ADWG, and survival rate of lambs were found as 4.36 kg, 27.63 kg, 258 g, and 86,5%, respectively. All of the investigated factors other than survival rate had significant effects on the BW, LW at day 90 and ADWG of lambs ($P < 0.001$). Differences between the survival rates of lambs were not significant ($P > 0.05$). The results of this study showed that birth year, sex of lamb, birth type, dam's age, and breeding region are highly important effects on the growth traits of WK lambs.

Keywords: Akkaraman (White Karaman), Average Daily Weight Gain, Breeding Region, Growth, Live Weight, Survival Rate

ORAL-108
INVESTIGATION AS CLINICAL AND LABORATORY OF BESNOITIOSIS IN CATTLE

NACİ ÖCAL[a], BUĞRAHAN BEKİR YAĞCI[a], SAMİ GÖKPINAR[a]

[a]Kırıkkale University, Faculty Of Veterinary Medicine, Kırıkkale, Turkey

drnaciocal@yahoo.com

Abstract:

Besnoitiosis in cattle is an important disease of the integument caused by a protozoan, *Besnoitia besnoiti*. The etiologic agent is an apicomplexian protozoon and morphologically resembles *Toxsoplasma* and *Sarcocystis*. The acute disease is clinically characterized by high fever, anorexia, erthymea in the nasal, periorbital and scrotal regions and common subcutaneous edema, anasarca. The chronic disease is clinically characterized by weight loss, skin lesions, including alopecia, and scleroderma characterized by skin thickening and wrinkling. The disease, especially in the chronic form, causes serious economical loss due to it consequences including low skin quality and its high spread among cattle farms.

Using a commercial Besnoitia-Antibody Detection ELISA test kit, we aimed to determine presence and titer of the antibody against of Besnoitia besnoiti in sera obtained from the blood samples of 360 cows located in farms in the province of Kırıkkale investigate was aimed. In addition, skin biopsy samples were collected from cows with lesions resembling those resulting from Besnoitiois and were examined histopathologically for presence of cysts induced by *Besnoitia besnoiti*.

According to the results of the present study, 123 local breed cows out of 300 examined and 43 imported cows out of 60 examined were seropositive for *Besnoitia besnoiti*. Thus, we can say that besnoitiosis is present in the counry with a rate of 26.6% prevalence in Kırıkkale region. Having determined a high prevalance rate (71.6%) among the imported cows, we can also argue that the import of animals is among the most important risk factors for the spread of the disease in the country.

Keywords: Cattle Besnoitiosis, Province Kırıkkale, Seroprevalance.

ORAL-109

THE CHEMICAL COMPOSITION AND NUTRITIVE VALUE OF ENSILED SUGAR BEET (BETA VULGARIS L.) LEAVES WITH VARIOUS ADDITIVES

İSMAİL ÜLGER[a], OSMAN KÜÇÜK[a]

[a]Erciyes University, Facultyof Veterinary Medicine, Kayseri, Turkey

i_ulger@hotmail.com

Abstract:

The aim of current experiment was to determine the chemical composition of sugar beet leaves silages that ensiled separately (SBL) or with 25% maize crop (25M), 50% maize crop (50M), 5% alfalfa (SBA), 5% wheat straw (SBW), 4% molasses (SBM), 0.8% LAB inoculants (SBLAB) and 5% ground barley grain (SBB) (weight basis). The pH of the SBA group was significantly higher than the other groups while 25M group had the lowest pH values ($P<0.05$). While dry matter content was highest in the 50M group, lowest values were obtained from SBL and SBLAB groups ($P<0.05$). The crude oil contents were not significant among the groups ($P>0.05$). While highest crude protein content obtained from SBL group, the crude protein content of 50M group was the lowest ($P<0.05$). The crude ash values in the SBL group significantly higher than those of other groups, however, crude ash contents of 25M and 50M groups were lower than those of others ($P<0.05$). Also cell wall components of the treatment groups were significantly different among the groups and the highest ADF and NDF values obtained from SBW group while SBB group had the lowest ADF and NDF contents ($P<0.05$). As a conclusion, sugar beet leaves can be ensiled without additives also molasses can be useful as a silage additive up to 4% when sugar beet leaves is ensiled.

Keywords: Sugar Beet Leaves, Silage Additive, Silage Quality, Nutritive Value, Cell Wall Components

ORAL-110

THE ESTABLISHMENT OF MALAKLI DOG REGIONAL GENE BANK

HİKMET ÜN[a], İLKER ÇAMKERTEN[a], OSMAN KARABULUT[a], SERHAT BÜYÜKLEBLEBİCİ[a], GÜZİN ÇAMKERTEN[b], GAYE BULUT[a]

[a] Aksaray University, Facultyof Veterinary Medicine, Aksaray, Turkey
[b] Aksaray University, Vocational School of Technical Sciences, Aksaray, Turkey

oguzalperen@hotmail.com

Abstract:

Livestock in Aksaray Province holds an important place in the social and economic fields. Malaklı dogs are integrated into the structure of the region's livestock, mostly grown as a shepherd dog. It is believed that this dogs specific to Aksaray province of Turkey.

Race preservation, breeding and registration should be required by the completed of studies on genetic characterization of the Malaklı dog, hereditary disease detection and screening, phylogenetic analysis, genealogical registration process with the DNA profile. In this study, a total of 155 genetic materials of Malaklı dogs were taken, synthesized, checked of health status, stored as banking purposes and opened to the use of genetic material issues with other stakeholders.

Keywords: Aksaray Malaklı Dog, Gene Bank, DNA

ORAL-111

RESIDUE ANALYSIS OF VETERINARY DRUGS IN ANIMAL FOOD PRODUCTS USING MOLECULARLY IMPRINTED POLYMERS

TÜLDEN İNANAN[a], NALAN TÜZMEN[b]

[a] Aksaray University, Vocational School Of Technical Sciences, Aksaray, Turkey
[b] Dokuz Eylul University, Faculty Of Science, Department Of Chemistry, İzmir, Turkey

tkalburcu@gmail.com

Abstract:

Veterinary drugs are applied extensively for therapeutic, metaphylactic, prophylactic and growth promotion purposes in livestock farming. These drugs are antibiotics such as aminoglycosides, ß-lactams, sulfonamides; antiparasitic agents such as ß-agonists and growth-promoting agents such as hormones. These chemical compounds can be administered via adding into feed or drinking water. Existence of the residues of these compounds or their metabolites in the animal origin food can result in adverse effects on consumers' health. Thus, sensitive, selective and reliable analytical methods are required for the detection and monitoring of veterinary drug residues to control the use of these drugs. Immunochemical methods such as radioimmunoassay (RIA), enzyme-linked immunosorbent assays (ELISA); microbial growth inhibition assays and chromatographic techniques such as high performance liquid chromatography (HPLC), liquid chromatography coupled with mass spectroscopy (LC-MS) are widely used for quantitative determination. Liquid-liquid and solid phase extractions are commonly used for analyte extraction before analysis. In the last 20 years, intensive researchers have developed new materials for selective extraction of analyte from several matrixes. Molecularly imprinted polymers (MIPs) are a new class of materials representing high selectivity and good affinity for target molecules predetermined specifity to the target molecule. MIPs with unique properties, such as physical, chemical, mechanical and thermal stabilities, can be performed in separations, sensors, immunoassay and catalysis or artificial enzymes.

Recently, food safety problems are one of the phenomena in livestock management. In many countries, governmental authorities have established monitoring programmes to determine antibiotic levels in the food of animal origin, especially milk, egg, meat, pork, chicken, fish, and yogurt, as well as the highest allowable residue levels. This study has reviewed the polymerization techniques and the performance of MIPs used for the determination of veterinary drug residues in animal origin of food samples.

Keywords: Molecularly Imprinted Polymers, Residue Analysis, Veterinary Drugs, Animal Origin Food.

ORAL-112

A RARE CASE OF UTERUS UNICORNIS WITH PYOMETRA IN A PEKINGESE BITCH

DUYGU BAKİ ACAR[a], MÜRŞİDE AYŞE DEMİREL[b]

[a] Afyon Kocatepe University, Faculty of Veterinary Medicine, Afyonkarahisar, Turkey
[b] Gazi University, Faculty Of Pharmacy, Laboratory Animals Breeding And Experimental Researches Center, Ankara, Turkey

dbakiacar@gmail.com

Abstract:

Müllerian duct abnormalities consist of a set of structural malformations that include various situations of agenesis or aplasia, and congenital anomalies of the uterus are rare (0.05%) in dogs (McIntyre et al., 2010; Colaço et al., 2012). In unicornuate uterus cases, only one uterine horn has a lumen, the other appearing as a narrow, flat band (Dharmaceelan et al., 2013). A 12 years old, sexually intact Pekingese bitch was presented to our clinic with a vaginal discharge going on more than 6 weeks. Transabdominal ultrasonography revealed enlarged uterus on the basis of the presence of an anechoic structure. Pyometra was diagnosed based on anamnesis, clinical and ultrasonographic examination. An ovariohysterectomy was performed from mid-line ventral abdominal wall under inhalation anesthesia (1.5%-3% isoflurane). The enlarged, pus filled right uterine horn was identified and exteriorized. However, it was noted that the left uterine horn was not present and appeared only as a serosa membrane. The left ovary was smaller than the right ovary. Histopathological examination of reproductive organs revealed unilateral cornual agenesis in the left uterine horn, and the cystic endometrial hyperplasia and pyometra in the right uterine horn.

In conclusion, uterus unicornis had not been realized until twelve-year-old in this bitch and was observed during ovariohysterectomy for pyometra. As in this case, uterus unicornis is accidentally diagnosed during ovariohysterectomy performed rutine or surgical approach of reproductive disease.

Keywords: Uterus Unicornis, Pyometra, Pekingese Bitch

ORAL-113

FREEZING OF INVIVO DERIVED SAANEN GOAT EMBRYOS WITH USE OF DIFFERENT CRYOPROTECTANTS DURING SLOW FREEZING

SAKİNE ÜLKÜM ÇİZMECİ[a], MEHMET GÜLER[a], MUSTAFA KAYMAZ[b]

[a] Selcuk Universty, Faculty Of Veterinary Medicine, Departmant Of Obstetrics And Gyneacology, Konya, Turkey

[b] Ankara Universty, Faculty Of Veterinary Medicine, Departmant Of Obstetrics And Gyneacology, Ankara, Turkey

wuklu@hotmail.com

Abstract:

In this study, aim was to determine effects of slow freezing method and some cryoprotectants on the viability of the Saanen goats embryos. Animal material of this Project was 15 Saanen goats, 3 bucks.Fifteen goats were synchronized with intravaginal sponges containing 20 mg of Fluorogeston acetate for 12 days. Decreasing doses of FSH (2,5; 1,5; 1 cc) were injected at 12 hour intervals on the last 3 days of sponge treatment. Twentyfour hours after sponge removal, goats were allowed to mate. Laparoscopic uterine washing and embryos collecting was performed on the seventh day after the mating. Embryos were assessed and embryos with good quality were frozen with a slow freezing method using different cryoprotectants. For this purpose ethyleneglycol, glyceroland DMSO were used. Embryos were stored in liquid nitrogen and then were thawed in 37 ° C waterbath. After tawing, the embryos were incubated at 38.5 º C and 5% CO2.Viability controls at 24, 48 and 72 hours were performed. Statistical analysis of data was performed using the Mann-Whitney U test.Estrus was observed in all animals. Superovulation response (4≥ CI) was found to be 93.3% and 84.6% for two seasons, respectively. Recovery rate is 61.8% and 72.3%. Early luteal regression was detected in 26.7% and 15.4% of animals respectively in two seasons. The rate of transferable embryos were 58% and 61.6%, respectively. Embryo development periodandits quality did not affect embryonic survival rate statistically with in groups after thawing (p>0,05). The survival rate of embryos frozen with ethyleneglycol were determined to be higher than with frozen other cryoprotectants. Consequently, ethyleneglycol during slow freezing method caused less damage for goat embryos and it can be used in subsequent studies and in the field.

Keywords: DMSO; Ethyleneglycol; Goat; Glycerol; Slowfreezing

ORAL-114

APPLICATION OF DRY PERIOD TREATMENT IN DAIRY COWS

SAKİNE ÜLKÜM ÇİZMECİ[a], DURSUN ALİ DİNÇ[a], ZAFER SAYIN[b], AYŞE MERVE KÖSE[c], İBRAHİM AYDIN[a]

[a] Selcuk Universty, Faculty Of Veterinary Medicine, Departmant OfObstetrics And Gyneacology, Konya, Turkey

[b] Selcuk Universty, Faculty Of Veterinary Medicine, Departmant Of Microbiology, Konya, Turkey

[c] Mustafa Kemal Universty, Faculty Of Veterinary Medicine Departmant Of Obstetrics And Gyneacology, Hatay, Turkey

wuklu@hotmail.com

Abstract:

Determination of the effect of antibiotic and non-antibiotics only and their combination on preventing mastitis during drying off was aimed in this study. One hundered Holstein cows were consisted study material. Somatic cells (SCC) were counted and bacteriologic culture was performed from the milk samples which collected from each mammary teat during drying off and 7. and 14. days of lactation. In first group, Cloxacillin +Ampicillin (CA) were administrated to mammary quarters (IM). As for second group, with CA and Spiramicin was administrated intramuscularly. As for third group, with CA of % 65 Bizmuth Subnitrate (BS) was admisnistrated IM. As for fourth group, only BS was administrated. It was observed that the animals' SCC in 1,3,4 groups had been increased with the begining of lactation than has been gone down and to be decreased in second group. Mastitis incidence between periods was found to be decreased in group 1 and 2, increased in 4. It was detected that Staphylococcus aureus was proliferated from %49 of samples and Koagulaz negatif Staphylococcus from %53 of samples. Mix infection was detected with the percentage of 35,1/40,0/ 34,6 in evaluation between periods. Curing rates were %25,5/ %37,9/ %43,5/ % 40,7 respectively while new infection rates were %9,8/ %17,28/ %34,8/ %53,6 in second samples. These rates were detected to be %29,3/ %41,4/ %47,8/ % 39,3 ve %25,9/ % 15/ % 50/ %50 respectively in third samples. Persistant infection rates were detected to be %5,3/ %7,3/ %10,7/ %7,6. Considering SCCs, mastitis incidence of second group that involves intramammary and intramusculary antibiotics was detected to be better than other groups. In treatment of existing infection the first group detected to be insufficient while best results were obtained from 3. group. Parenteral antibiotic administration additional to intramammary antibiotics thought to be more succesful among dry period treatment protocols.

Keywords: Dairy Cow, Dry Period, Hollstein, Somatic Cell Count

ORAL-115

EFFECT OF FLUNIXIN MEGLUMINE ON PREGNANCY RATE DURING AND AFTER EMBRYO TRANSFER IN ANGUS COW

HÜSEYİN ERDEM[a], TAHİR KARAŞAHİN[b], RAMAZAN TÜZEN[c], ALPER CENGİZ[d]

[a] Selcuk University, Faculty Of Veterinary Medicine, Departmant OfObstetrics And Gyneacology, Konya, Turkey

[b] Aksaray University, Faculty Of Veterinary Medicine, Departmant Of Physiology, Aksaray, Turkey

[c] ABH Holding, Turkey

[d] ABH Holding Panagro Tarım ve Hayvancılık A.Ş., Konya, Turkey

erdemh@selcuk.edu.tr

Abstract:

This study has been carried out within the scope of the AR-GE Project (Project number: 3130013) supported by TUBİTAK in Panagro Tarım ve Hayvancılık A.Ş. Angus livestock farm established in Konya/Turkey. Transferable (Good quality, compact morula /early blastocyst; grade I, stage 4/5) 85 embryos were recovered from Angus donor cows after superovulation and uterus flushings. The fresh embryos were transferred to the Angus cows. Firstly recipient animals which had hadn't any genital or general health problem and had cyclic, body condition score 3-4 had been synchronized with ovsynch estrus synchronization protocol for the purpose of embryo transfer. Corpus luteums were classified by examining ovaries by per rectum palpation in 7th days of recipient animals. Embryos were transferred to the animals which had had a CL ≥15mm size under epidural anesthesia. Embryos were transferred ipsilaterally to the uterine horn that was the same side with CL and preferentially to upper one-third of uterine horn. Recipients which embryo transfer had done divided into 3 groups. A dosage of 1.1 mg/kg flunixin meglumine administered intramuscularly to the first group (n=31) during transfer and any administration wasn't applied after transfer. As for the second group (n=29), A dosage of 1.1 mg/kg flunixin meglumine was applied intramuscularly during transfer and 8th and 9th days following transfer. As for third group (n=25), no administration was applied during or after transfer and assigned as a control. Pregnancy diagnosis was performed on the 23rd day by a real-time ultrasound after embryo transfer. After examination pregnancy rates were determined to be % 35.4 (11/34), 55.1 (16/29) and 40 (10/25) respectively. Groups were analysed with Khuruskal Wallis and no differences were found.

In conclusion, although it is not statistically significant, administration of flunixin meglumine 8th and 9th days following embryo transfer has a positive impact on pregnancy rates numerically.

Keywords: Embryo transfer, Flunixin meglumin, Angus cow

ORAL-116

THE INVESTIGATIONS ON HATCHABILITY IN GEESE IN AKSARAY REGION

OSMAN KARABULUT[a]

[a]Aksaray University, Faculty Of Veterinary Medicine, Aksaray, Turkey

okarabulut02@gmail.com

Abstract:

There is a great importance using egg incubator for the development of goose sector and the increased yield. For this purpose, 132 eggs were collected from individual geese in Aksaray that were breed in domestic farms and 121 of them were incubated. At the end of incubation period, 44 of them were infertile, 17 of them were died, 6 of them were infected, 41 of them were disorder of embryonic development and 13 of them were given chicks. It is required to raise awareness of geese breeders about herd management, using of egg incubator and storage of eggs.

In this study; it was studied that to establish contact with geese growers by collecting eggs, to create awareness about the geese breeding, to increase of the use of egg incubators.

Keywords: Aksaray, Geese, Hatchery, Eggs

ORAL-117

FIRST ISOLATION OF *VIBRIO FURNISSII* (EMERGING VIBRIO) FROM BIVALVE MOLLUSCS IN TURKEY

ADİL AKSOY[a], MERİÇ LÜTFİ AVSEVER[a], İLKER ÇAMKERTEN[b]

[a] Aksaray University, Eskil Vocational School, Aksaray, Turkey
[b]Aksaray University, Faculty Of Veterinary Medicine, Aksaray, Turkey

adilaksoy@aksaray.edu.tr

Abstract:

Vibrio furnissii is an emerging pathogen that can cause acute gastroenteritis in humans. In this work, 652 bivalve mollusc samples (*wedge shell-Donax trunculus*, L.1758, *oyster-Ostrea edulis*, L.1758, *cockle-Venus verrucosa*, L.1758, *clam-Tapes decussatus* ,L.1758, *bearded mussel-Modiolus barbatus*, L.1758, *Mediterranean mussel-Mytilus galloprovincialis* L.1819, *striped venus-Chamelea gallina* L.1753) sent to the laboratory from stations in Ayvalık and Balıkesir (Northern Aegean Region of Turkey) between 2007-2010 were researched with conventional microbiologic methods and 6 isolates were found to be *Vibrio furnisii*. Isolates were later confirmed with PCR using primers specific to toxR gene. Isolation rate of *V. furnisii* from bivalve molluscs were 2007 (2%), 2008 (0.43%), 2009 (1.29%) , 2010 (0%) for each year and for each shell fish species these were; mediterranean mussel (3.33%), bearded mussel (3.27%), oyster (3.27%), clam (0%), cockle (0%) , wedge shell (%0), striped venus (%0). In this work, *V. furnissi* was isolated from bivalve mollusc in Turkey first time and drawn attention to zoonotic importance of the agent.

Keywords: Bivalve Molluscs, Vibrio Furnissii, Emerging Vibrio

ORAL-118

HURDLE TECHNOLOGY

MUSTAFA ARDIÇ[a], H. İBRAHİM KAHVE[a]

[a]Aksaray University, Faculty Of Engineering, Aksaray, Turkey

mustafaardic69@hotmail.com

Abstract:

It is known that instead of using a single method for food preservation, use of multiple methods provides better results. These multiple methods are known as hurdle technology and incorporate many preservation methods. Hurdle technology was developed several years ago as a new concept for the production of safe, stable, nutritious, tasty and economical foods. The most important hurdles used in food preservation are temperature (high or low), water activity (aw), acidity (pH), redox potential (Eh), preservatives (e.g., nitrite, sorbate, sulfite), edible films, ultraviolet radiation and competitive microorganisms (e.g., lactic acid bacteria). However, more than 60 potential hurdles for foods, which improve the stability and/or quality of the products have been already described, and the list of possible hurdles for food preservation is by no means complete. As a result, the hurdle technology is a new perspective on food preservation and it has been used frequently in recent years.

Keywords: Hurdle, Technology, Preservation, Food

ORAL-119

CLINICAL PATHOLOGY FOR VETS 1 RED AND WHITE BLOOD CELL ABNORMALITIES IN THE PRAXIS

RENE VAN DEN HOVEN[a], VEHBİ GÜNEŞ[b], ALİ CESUR ONMAZ[b]

[a] Veterinary University of Vienna, Department of Small Animals and Horses, Equine Clinic, Section Internal Medicine and Infectious Diseases, Vienna, AUSTRIA

[b] Erciyes University, Faculty of Veterinary Medicine, Department of Internal Medicine, Kayseri, TURKEY

vgunes@erciyes.edu.tr

Abstract:

Haematology is the main help in the diagnosis of anaemia, active infection with blood parasites, response to viral and bacterial infections and occasionally in lymphoproliferative disease.

Due to the process of auto transfusion after blood loss, PCV changes become only evident 12-24 after the incident. PCV can be simply measured using a micro haematocrit centrifuge. Next to blood loss, or non-regenerative anaemia, haemolytic anaemia may occur. In these cases reddening of plasma may be seen. Jaundice is another feature of an acute haemolytic crisis. Babesiosis or Theilleriosis may be the cause. These organisms can be detected in a blood slide. Equine Infectious anaemia virus infection must be considered in all cases of chronic haemolytic anaemia. Infection with Ehrlichia granulacytophylia in granulocytes can often be detected at microscopy in horses with a few days lasting fever. Sever lymphopenia could suggest early viral infection, whereas sever granulopenia suggest bacterial infection.

Blood smears of EDTA-blood are easy to prepare and dying with Dif Quick dyes is a matter of a few minutes. With simple methods of PCV, WBC and blood smears many disorders can be quickly diagnosed in the praxis. Nevertheless confirmation of the finding by more sensitive laboratory test is advisable.

Keywords: Haematology, Anaemia, Blood Parameters

ORAL-120

CLINICAL PATHOLOGY FOR VETS 2: CASE DISCUSSIONS OF POLYDIPSIA AND POLYURIA

RENE VAN DEN HOVEN[a], VEHBİ GÜNEŞ[b], ALİ CESUR ONMAZ[b]

[a] VeterinarybUniversity of Vienna, Department of Small Animals and Horses, Equine Clinic, Section Internal Medicine and Infectious Diseases, Vienna, AUSTRIA
[b] Erciyes University, Faculty of Veterinary Medicine, Department of Internal Medicine, Kayseri, TURKEY

aconmaz@erciyes.edu.tr

Abstract:

Polydipsia (PD) very often is accompanied by polyuria (PU). Urinalysis using a simple dip stick and a gravity meter is a powerful, yet simple diagnostic tool to diagnose many disorders causing PU/PD.

PU/PD Cases will be discussed and a diagnostic algorithm will be applied to arrive at the diagnosis PPID, Diabetes insipidus and Psychogenic Drinker.

Furthermore, a case with a hidden streptococcus abscess will be discussed and the diagnostic value of plasma protein electrophoresis will be shown.

Keywords: Haematology, Polyuria, Polydipsia

ORAL-121
POLICIES FOR THE DEVELOPMENT OF CATTLE RAISING IN AKSARAY: IPARD APPLICATIONS

VOLKAN HAN[a], ERŞAN SEVER[a]

[a]Aksaray University, Aksaray, Turkey

volkanhan38@gmail.com

Abstract:

A significant portion of red meat and milk production is supplied from cattle in Turkey. In this context the livestock species in Turkey and major structural changes and developments have occurred in the shelter environment.

Turkey's territorial diversity, terrain, livestock diversity and potential has a significant advantage, although We can say it is still not at the desired level. Economic gains an important role in agriculture and livestock are important developments in the sector cattle-raising in the last period of time it has been mentioned in Aksaray. However, we can say, gradually gained momentum the developments in the livestock sector in recent years. This progress has a significant effect of policies for the development of the livestock sector. IPARD implementation comes at the beginning of this policy.

The EU candidate country status of the countries that have won the provision of Agriculture and Rural Development and aims at raising community standards to provide financial support and grants. TKDK, prior to EU accession to the IP (the Instrument for Pre-Accession Assistance) which financial assistance instrument is the 5th component of the Rural Development was established as an agency to implement in 2008. TKDK, with the funds generated of the Rural Development by the Turkey and the EU supports development investments are in the form of project-based grants.

In this study has tried to put forward of the TKDK for the development of cattle raising in Aksaray supports to be provided by the IPARD-I and the contributions planned with IPARD-II.

Keywords: Cattle Raising, Economy Policy, Ipard-I And Ipard-Ii

POSTER PRESENTATIONS

POSTER-1
OVERWINTERING AND GREENHOUSE TECHNICS IN AQUACULTURE

SUAT DİKEL[a]

[a] Çukurova University, Faculty of Fisheries, Adana, Turkey

dikel@cu.edu.tr

Abstract :

Word of Overwintering is probably translation of Norwegian overvintre in 1890-95; over- + winter. It's meaning that is the process by which some organisms pass through or waits out the winter season, or passes through that period of the year when "winter" conditions (cold or sub-zero temperatures, ice, snow) make normal activity or even survival difficult or near impossible. It used in aquaculture for many years. Water temperature is one of the most important factors in aquaculture. Various significant activity like development of ovarian and egg, organization of immunity system, living creatures' gaining weight are realized under effect of water temperature. Fish growth can be optimized in a controlled environment. Control of water and environmental temperature is so important for a successfully aquaculture operation. Especially culture of warm water species like tilapia and cat fish can be carried out that on condition using greenhouse technics in relatively cold regions like Turkey.

Keywords: Overwintering, Greenhouse, Auxiliary Culture Systems, Warm Water Aquaculture

POSTER-2

USE OF GEOTHERMAL SOURCES IN AQUACULTURE

SUAT DİKEL[a], MUSTAFA ÖZ[b]

[a] Çukurova University, Faculty of Fisheries, Adana, Turkey

[b] Aksaray University, Faculty of Veterinary Medicine, Aksaray, Turkey

dikel@cu.edu.tr

Abstract:

Geothermal energy is often defined as thermal energy stored in the Earth. In most places around the globe, geothermal energy is merely solar energy stored in the earth's crust or in the vast waters that cover the earth. In fact, half of all solar energy that reaches the earth is stored in the surface of the earth. Geothermal energy is one of the most important energy resources for electricity generation and is also used directly in heating, food and agriculture, aquaculture and some industrial processes. Aquaculture pond and raceway heating is one of the most common uses of geothermal resources. Because of the significant heating requirements of these facilities and their ability to use low-temperature fluids (30 0C and above), they are a natural application. This use of geothermal resources allows aquaculture operations to be sited in colder climates or closer to markets where conventional heating may not be economical. Geothermal hot water is used to heat freshwater in heat exchangers or is mixed with fresh water to obtain suitable temperatures for fish farming. Aquaculture pond and raceway heating are among the most common applications of geothermal energy. The use of geothermal energy in fish farming protects the fish stock against cold weather and increases fish production. It is used mainly at the fish hatchery stage. The breeding of different species of fish in water heated with geothermal energy makes production cheap and profitable all year round. The main species raised are carp, catfish, tilapia, frogs, mullet, eels, salmon, sturgeon, shrimps, lobsters, crayfish, crabs, oysters, clams, scallops, alligators, mussels and abalone. The use of geothermal energy in fish farming is expanding rapidly in France, Greece, Hungary, Iceland, New Zealand and the United States of America.

Keywords: Geothermal, Aquaculture, Green Energy

POSTER-3

MUCIN PROFILES OF THE ABOMASUM IN BULL AND RAM: A COMPARATIVE STUDY

HAKAN SAĞSÖZ[a], ZELAL KARAKOÇ[b], M. AYDIN KETANİ[a]

[a] Dicle University, Faculty Of Veterinary Medicine, Diyarbakır, Turkey
[b] Siirt University, Faculty Of Veterinary Medicine, Siirt, Turkey

hakansagsoz@hotmail.com

Abstract:

Many pathogens require direct binding to mucosal cells to cause an infection. The mucosal epithelium of the digestive tract, which is covered by a mucin layer, fulfils several protective functions that are essential to maintaining the health of the digestive tract. Mucins are glycoproteins, which are found on membranes and in mucus gels and protect the underlying mucosal cells. Both membrane-associated mucins and secreted mucins are critical components of mucosal defense. The aim of this study was to determine the localisation and expression of mucin profile of the abomasum via histochemistry and immunohistochemistry. The abomasums of twenty bull and ram were evaluated. Histochemical examination showed that neutral and acidic mucins were present in the mucosa and the glands of the cardia, fundus and pylorus of the abomasums of both bull and ram. However, the expression of acidic mucins was weak in the superficial glands and strong in the deep glands of the abomasum of rams. In both bull and ram, MUC1, MUC5AC and MUC6 were expressed in the glandular epithelial cells in all regions of the abomasum. Interestingly, while MUC2 was not expressed in the cardia and fundus, it was weakly expressed in the parietal cells of the pylorus in both species. In conclusion, the presence of neutral and acidic mucins and MUC1, MUC2, MUC5AC and MUC6 proteins in luminal epithelial and glandular cells of abomasum in the bull and ram support the hypothesis that mucins play a key role in the protection of the abomasal mucosa against infectious agents.

Keywords: Histochemistry, Immunohistochemistry, Mucosal Barrier, Ruminant, Stomach

POSTER-4

THE CELL PROLIFERATION IN DISTAL ILEUM OF SHEEP FETUSES DURING PRENATAL PERIOD

MEHMET ÖZBEK[a], EMEL ERGÜN[a], FEYZULLAH BEYAZ[b], AHMET CEYLAN[a], LEVENT ERGÜN[a], NUH YILDIRIM[a], FÜSUN ERHAN[a], ÖZGE ÖZGENÇ[a]

[a]Ankara University, Faculty Of Vet. Med. Dept. Of Histology And Embryology, Ankara, Turkey
[b] Erciyes University, Faculty Of Vet. Med. Dept. Of Histology And Embryology, Kayseri, Turkey

fbeyaz@erciyes.edu.tr

Abstract:

Proliferating cell nuclear antigen (PCNA) is expressed in the nuclei of cells during the DNA synthesis phase of the cell cycle, and PCNA is also involved in the DNA damage tolerance pathway known as post-replication repair. This study was performed to investigate the cell proliferation in the distal ileum tissues of sheep fetuses during prenatal period. In this study, the distal ileums from ten sheep fetuses with gestational ages varying between 63 and 147 days were used as a material. At 63 days of gestation, a positive reaction for PCNA was observed in some cells covering rudimentary villi and crypts, and in mesenchymal cells of lamina propria. At 79 days of gestation, we found a strongly positive staining in nearly all of cells lining distal villi and crypts. As from this stage to birth, we detected a similar reaction in the cells lining tip and downstream of villi like those covering distal villi and crypts. Moreover, after 88 days of gestation, an intensely positive reaction for PCNA was found in the centers of aggregated primordial lymphoid follicles indicating dome-follicle structure, but not follicle associated epithelium (FAE). At 114 days of gestation, we determined a positive labelling for PCNA in the majority of cells in follicles of Peyer's patches (PP) whereas in minority of cells in dome and interfollicular regions. At 147 days of gestation, showing germinal centers in follicles of PP, a strongly positive reaction was seen in the cells of follicles and some cells in dome and interfollicular regions, but no reaction in FAE. In this study, we observed intense proliferation in follicles which are B cell areas but not interfollicular regions which are T cell areas suggest that B cells proliferation is more intensive than T cell proliferation in ileum of sheep fetuses during prenatal period.

Keywords: PCNA, Ileum, Peyer's Patches, Prenatal Period, Proliferation.

POSTER-5

A SEROLOGICAL AND VIROLOGICAL INVESTIGATION OF THE *PESTIVIRUS* INFECTIONS IN SHEEP AND GOATS IN THE AYDIN AND İZMİR PROVINCES OF TURKEY*

ZAFER EMİN URAL[a], NURAL EROL[a]

[a] Adnan Menderes University, Faculty Of Veterinary Medicine, Department Of Virology, Aydın, Turkey

nuralerol@adu.edu.tr

Abstract:

The objective of this study was serological and virological investigation of *Pestivirus* infections in sheep and goats in the Aydin and Izmir provinces. In the study, 460 serum samples were collected from 128 goats and 332 sheep. The presence of antibodies in the blood serum samples was investigated using NADL, the reference strain for *Bovine viral diarrhea virus (BVDV)* in Virus Neutralization Tests. In total, 348 whole blood samples collected from 116 goats and 232 sheep were tested for the presence of the *Pestivirus* specific antigens using commercially available Enzyme Linked Immunosorbent Assays (ELISA) (Serelisa® BVD p80ag Mono Indirect, Synbiotics, Europe, Lyon, France). 41.40% (53/128) of the goat and 47.59% (158/332) of the sheep samples were found to be seropositive. SN50 values were 1/5 in 37.44%, 1/10 in 34.12%, 1/20 in 14.21%, 1/40 in 5.21%, 1/80 in 5.68% and 1/160 in 3.31%a of the 221 seropositive serum samples. The whole blood samples tested were negative for the antigen.

Although no viremia was detected in any of the sheep and goat tested in this study, the 45.87% (211/460) rate of seropositivity shows that *Pestiviruses* may be circulating in the region and may cause significant economic losses.

*This work supported by Adnan Menderes University Scientific Research Coordination Unit.

Keywords: *Pestivirus*, Antigen, Antibody, Goat, Sheep

POSTER-6
POSSIBLE EFFECTS OF VITAMIN D ON TESTICULAR DAMAGE CREATED WITH BISPHENOL A IN ADULT MALE RATS

FÜSUN ERHAN[a], LEYLA CANPOLAT KOYUTÜRK[b]

[a] Ankara University, Faculty of Veterinary Medicine, Ankara, Turkey
[b] Fırat University, Faculty of Medicine, Elazığ, Turkey

fusunerhan@cumhuriyet.edu.tr

Abstract:

Bisphenol A (BPA) is a toxic compound from alkylphenols which can be taken into living body through the food chain, drinking water and inhalation. Vitamin D is a steroid hormone which is generated photochemically in the epidermis and which has positive effects on sperm quality and reproductive fertility. In this study, it was targeted to examine the testicular damage that may be caused on adult rats by BFA with the environmental estrogens and possible effects of Vitamin D on this damage.

30 *Wistar Albino* species 8 week old male rats were used in the study. The rates were divided into 5 groups. The rats in Group I were identified as the control group. The rats in Group II were administered Bisphenol A solved in olive oil for 4 weeks. The rats in Group III were administered Bisphenol A solved in olive oil for 4 weeks and then Vitamin D3 for 2 weeks. The rats in Group IV were administered Vitamin D3 for 2 weeks. The rats in Group V were administered olive oil for 4 weeks. After completion of implementation, alterations in testicle tissues were examined histochemically with the light microscope.

Our review of the group treated with BPA (Group II) concluded that BPA caused significant degenerations, atrophy, edema, impairment in basal lamina and generation of a limited number of apoptotic cells in the testicle tissue. Vitamin D, used to treat toxic effects of BPA in Group III, exhibited a similar histological structure in general in the testicle tissue to the control group. Group IV and Group V had normal testicular tissues.

Considering all the histological data, we observed that BPA causes certain histopathological changes. We observed that Vitamin D applied after BPA could bring the testicular morphology to levels close to the control group.

Keywords: Bisphenol A, Vitamin D, Testes, Histology

POSTER-7

NOVEL TRENDS IN DEVELOPMENT OF DIETARY FIBER RICH MEAT PRODUCTS

ÖZEN ÖZBOY ÖZBAŞ[a], MUSTAFA ARDIÇ[a]

[a]Aksaray University, Faculty of Engineering, Aksaray,Turkey

mustafaardic69@hotmail.com

Abstract:

Meat and meat products are generally recognized as good sources of high biological value proteins, fat-soluble vitamins, minerals, trace elements and bioactive compounds. However, most of the meat products are deficient in complex carbohydrates like dietary fiber. Dietary fiber (DF) is defined as the remnant of edible part of plants and analogous carbohydrates that are resistant to digestion and absorption in human small intestine. Numerous studies have demonstrated the beneficial effects of DF consumption in protection against heart disease and cancer, normalization of blood lipids, regulation of glucose absorption and prevention of constipation and diverticular disease. Functional foods might be defined as those that in addition to acting as nutrients may positively affect specific biological functions, improving our general state of health and/or reducing the risk of specific diseases. DF is one of the ingredients that have been identified as having potentially functional effects for human health. Processed foods and fast foods have become mainstay of typical diets in modern society. Fiber incorporation in frequently consumed foods (meat, dairy and baked products) could help to overcome the fiber deficit. Fibers can also be introduced into meat products to reduce the caloric content by fat substitution and to improve the texture and stability of meat products. Various types of DF (sugarbeet fiber, wheat bran, lemon albedo, brewer's spent grain etc.) have been studied for formulation of reduced-fat and/or DF-rich meat products. In this review, various DF sources and their applications in meat products (sausages, meatballs, frankfurters etc.) have been reviewed.

Keywords: Dietary Fiber, Functional Food, Meat Products

POSTER-8

THE PRESENCE OF *LISTERIA SPECIES* IN CORN SILAGE AND RAW MILK PRODUCED IN SOUTHEAST REGION OF TURKEY

HİSAMETTİN DURMAZ[a], MEHMET AVCI[b], OSMAN AYGÜN[c]

[a] Yüzüncü Yıl University, Faculty of Veterinary Medicine, Van, Turkey
[b] Harran University, Faculty Of Veterinary Medicine, Şanlıurfa, Turkey
[c] Fırat University, Keban Vocational School, Elazığ, Turkey

hdurmaz@gmail.com

Abstract:

The objective of this study was to investigate the presence of *Listeria* species in the corn silage and raw milk samples obtained from animals fed with corn silage. A total of 140 raw milk samples obtained from cows, sheeps and goats fed with 90 corn silage samples collected from 10 dairy farms in South-Eastern Region of Turkey were analyzed for Listeria spp. Listeria spp. in samples were isolated according to the method recommended by Food and Drug Administration. *L. monocytogenes* were isolated from 2 (2.2%) silage samples and from 3 (2.1%) raw milk samples. The isolation of *L. monocytogenes* from corn silages and raw milk samples examined by our study indicates that these are a potential risk for animals and public health. Prevention of growth of *L. monocytogenes* in silage will contribute also to reduction of *Listeria spp.* in milk.

Keywords: *Listeria Spp., L. Monocytogenes*, Raw Milk, Silage

POSTER-9

THERMAL DESTRUCTION OF *LISTERIA MONOCYTOGENES* DURING MANUFACTURE OF KUNEFE, A TRADITIONAL TURKISH DESSERT

HİSAMETTİN DURMAZ[a], ŞERAFETTİN ÇELİK[b], OSMAN AYGÜN[c]

[a] Yüzüncü Yıl University, Faculty Of Veterinary Medicine,Van, Turkey
[b] Harran University, Faculty Of Veterinary Medicine, Şanlıurfa, Turkey
[c] Fırat University, Keban Vocational School, Elazığ, Turkey

hdurmaz@gmail.com

Abstract:

This study was carried out to determine the thermal destruction norms (D and z-values) of *Listeria monocytogenes* during manufacture of Kunefe, a traditional Turkish dessert. Uncooked Kunefe samples were baked by holding the samples at 58.5, 62.5, 66.5 or 70.5 ºC in an oven, and survivors of the cells were encountered for 2, 4 and 6 min at each baking temperature. Thermal death times (D-values) determined by linear regression, of *L. monocytogenes* 1/2b serotype in Kunefe were 26.41, 5.37, 2.18 and 1.08 min at 58.5, 62.5, 66.5 and 70.5 ºC, where those values for serotype 4b were calculated as 27.19, 8.13, 3.12 and 1.19 min at tested temperatures, respectively. On the other hand, thermal resistance values (z-values) of *L. monocytogenes* serotypes 1/2b and 4b in Kunefe were determined as 8.77 and 8.93 ºC, respectively. As a result, thermal inactivation of *L. monocytogenes* serotypes, holding Kunefe for approximately 8-10 min at 70 ^{0}C ensure the complete destruction of the pathogen bacteria at a level of 106 CFU/g. D and z-values in this study will assist the retail food industry to design baking regimes that ensure consumer health and safety of Kunefe contaminated with *L. monocytogenes.*

Keywords: *Listeria Monocytogenes*, Künefe, Thermal Destruction

POSTER-10
ULTRASTRUCTURE OF THE TONGUE AND HISTOCHEMICAL FEATURES OF LINGUAL SALIVARY GLANDS IN BUZZARDS*

EMİNE UMRAN BOZKURT[a], DİNÇER YILDIZ[a], M.ERDEM GÜLTİKEN[b], DURMUŞ BOLAT[a]

[a] Kırıkkale University, Faculty Of Veterinary Medicine, Kırıkkale, Turkey
[b] Ondokuz Mayıs University, Faculty Of Veterinary Medicine, Samsun, Turkey

dincer_yildiz@hotmail.com

Abstract:

In the present study, the tongues of 8 long-legged buzzards from different gender were used. In addition to the macroscopic characteristics of the tongue, SEM was used to examine the epithelial tissue covering the tongue's surface.Crossman's triple staining method and Hematoxylin & Eosin dye were used to determine localizations and general histological features of lingual salivary glands. Following PAS, AB pH 1.0, AB pH 2.5, PAS-AB pH 1.0, and diastase enzyme, which were performed to identify histochemical features, PAS staining and weak, moderate and strong methylation procedures were performed by sialidase and hyaluronidase applications. The facts that there is no salivary gland in the apex of the tongue, anterior lingual salivary glands (*glandula lingualis anteriores*) are localized close to the tongue base and there are numerous openings of the channels in the tongue base, as well as the absence of taste papillae in the epithelium of the tongue and absence of a specific structure for taste and warmth sensations suggest that the tongue in the buzzards enables the food to contact with saliva and to move backwards in the shortest time, and that acidic salivary glands of the tongue not only have antimicrobial effect but also facilitate swallowing process and may have effect on digestion process in the further parts of the alimentary tract.

*This work was supported by the grant from Kırıkkale University Scientific Research Project Coordination Unit,Turkey (Project Number:20011-36).

Keywords: Tonque, Salivary Glands, Buzzards, Histochemstry

POSTER-11

THE EFFECTS OF EXTRACELLULAR TRAPS FORMATIONS ON HOST CELL INVASION BY TOXOPLASMA GONDII TACHYZOITES AFTER CONFRONTED WITH SHEEP POLYMORPH NUCLEAR NEUTROPHILS*

KADER YILDIZ[a], SAMİ GÖKPINAR[a], NESLİHAN SÜRSAL[b], CAHİT BABUR[c]

[a] Kırıkkale University, Faculty Of Veterinary Medicine, Department Of Parasitology, Kırıkkale, Turkey

[b] Ankara University, Faculty Of Veterinary Medicine, Department Of Parasitology, Ankara, Turkey

[c] Turkish Public Health Institutions, Ankara, Turkey

kaderyildiz@hotmail.com

Abstract:

Toxoplasma gondii is one of the most prevalent parasites in the world. Innate immune system is a primary defence mechanism of multicellular organisms. Neutrophil is one of the major component of innate immune system and fight pathogens with different strategies including phagocytosis, degranulation and netosis. During netosis; nuclear, cytoplasmic and granular content mix with each other in neutrophil after encounter with parasite, extracellular traps formations (NETs) develop and then excrete to outside of the neutrophil. The parasites become physically entrapped by NETs in extracellular areas. Host cell invasion is an unavoidable requirement for survival and replication of obligate intracellular parasites including *T.gondii*. Netosis may lead to diminish of initial parasite load during acute infection in host.

The aim of the study was to detect host cell invasion by *T.gondii* tachyzoites after confronted with sheep polymorph nuclear neutrophils (PMN) in vitro.

Vero cell line used to determine the effect NETs on host cell invasion of tachyzoites in the present study. PMN was isolated from clinically health sheep blood. Tachyzoites from the virulent RH strain of *T. gondii* and sheep PMN co-culture were incubated at three hours (37 C, 5% CO2). Then, the co-cultures were seed in confluent monolayer of Vero cells in cell culture flasks. The ratio of infected cells with tachyzoites were evaluated quantitatively in ten randomly selected cell areas after incubated 24 hours. Equal numbers of tachyzoites not cultured with PMN were seed as negative control.

Tachyzoites were physically ensnared by NETs released from sheep PMN after confronted with *T.gondii*. Also NETs prevent to host cell invasion by *T.gondii* tachyzoites compared to the control group. Netosis give organism a change for reducing infective stages of *T.gondii* in extracellular area during acute infection.

*This work was supported by the grand from TUBITAK (Project no: TOVAG 214O288)

Keywords: *Toxoplasma Gondii*, Neutrophil, Netosis, Nets, Cell Invasion, *In Vitro*, Sheep

POSTER-12

REPRODUCTIVE PERFORMANCE OF SAANEN GOATS UNDER DIFFERENT MANAGEMENT SYSTEMS IN TURKEY

YAŞAR AKAR[a], YUNUS EMRE ATAY[a], KAAN ERKEK[a]

[a]Erciyes University, Faculty of Veterinary Medicine, Kayseri, Turkey

yasakar@yahoo.com

Abstract:

This study was carried out to compare the reproductive performance of Saanen goats under rural (n:75) and intensive (n:206) management systems in Elazığ region. Single and multiple births, stillbirth, dystocia, abortion and kids survival rates were determined in both the goat flocks between February 1 and April 30 2011. Percentages of single and multiple births, stillbirth, dystocia and abortion were not statistically different between the flocks (Rural System; 37.09%, 63.91%, 14.51%, 16.12%, 17.33% - Intensive System; 47.81%, 52.19%, 18.68%, 10.98%, 11.65%, respectively). However, the kids survival rates of intensive management system (74.05%) were lower than rural management system (88.88%), ($P<0.003$). Overall percentage of single and multiple births, stillbirth, dystocia, abortion and kids survival in all goats were 45.08, 54.92, 17.62, 12.29, 13.16 and 78.40%, respectively. Our results show that rural and intensive management systems do not have an important effect on reproductive performance of Saanen goats.

Keywords: Abortion, Dystocia, Fertility, Saanen, Stillbirth, Survival Rate.

POSTER-13

LEVELS OF SOME TRACE ELEMENTS IN BLOOD SAMPLES COLLECTED FROM PIGEONS IN ŞANLIURFA PROVINCE OF TURKEY

PELİN FATOŞ POLAT[a], FÜSUN TEMAMOĞULLARI[b], GÜRBÜZ AKSOY[a]

[a] Harran University, Faculty Of Veterinary Medicine, Department Of Of Internal Medicine, Şanlıurfa, Turkey

[b] Harran University, Faculty Of Veterinary Medicine, Department Of Pharmacology and Toxicology, Şanlıurfa, Turkey

pelin_polat@harran.edu.tr

Abstract:

Along rapidly increasing world population unplanned urbanization, the use of chemicals and industrialization cause air, water and soil pollution. Leading causes of air pollution are warming due to unplanned urbanization, fossil fuel usage in transport vehicles (land, sea, air) and industry, increasing mining waste. In determination of air pollution birds are important bioindicators.In this study, amounts of some heavy metals were determined in blood samples taken for therapeutic purposes from pigeons (n=39) situated in Şanlıurfa, Turkey. Blood samples (n=39) which were collected in the study were analyzed by Inductive Coupling Plasma Optical Emission Spectrometer (ICP-OES) method. Heavy metals were detected in all blood samples. Cu; Cr; Fe; Mn; Ni; Pb; Zn levels were determined as 0.71 ± 0.52, 0.64 ± 0.13, 153.28 ± 7.77, 2.24 ± 4.2, 0.43 ± 0.08 ;0.71 ± 0.22, 3.24 ± 0.31 (Mean ± standard deviation; mg / L) respectively. In conclusion various amounts of Fe>; Zn> Mn> Cu=Pb> Cr >Ni were found in blood samples taken from pigeons situated in Şanıiurfa province, Turkey. This is the unique study investigated heavy metal levels in pigeons in Turkey.

Keywords: Heavy Metals, Pigeon, ICP-Oes

POSTER-14

THE ANATOMICAL AND HISTOLOGICAL STUDIES ON TESTIS OF 80 DAYS OLD WILD PIG FETAL SIBLINGS

FEYZA BAŞAK[a], TOLUNAY KOZLU[a], YEŞİM AKAYDIN BOZKURT[a], LUTFİ TAKÇI[a], SEVİNÇ ATEŞ[a]

[a]Mustafa Kemal University, Faculty of Veterinary Medicine, Hatay, Turkey

sevinc_ates2006@hotmail.com

Abstract:

The aim of this study was to investigate the anatomical and histological structure of testis in 80 days old wild pig fetuses.

In the study eight testis both from left and right sides which belong to four male fetuses were fixated with 10% formalin solution were examined macroscopically. Following the routine histological procedure, 5µm thick sections were taken from the paraffin blocks and they were stained with Mallory's Modified Triple Stain to show the general histologic view.

In the macroscopic examination, it was determined that though testis moved through the inguinal canal and left the abdominal cavity, yet descensus of the testis was not completed. It was also observed that testis were located inside the proximal part of the *collum vaginalis of tunica vaginalis*. Testis were shaped oval and they were 7-9 mm in lenght, 3-4 mm in width and about 2 mm thick. During histological examination, it was observed that both testis and epididymis completed their general structure but not in cell-structure level. Goniogenesis was completed (spermatogonium was seen), spermatocytogenesis was began but not completed, only the cells in primer spermatocyte level were seen. Sertoli cells were not seen. Leydig-like cells among the tubulus seminiferus contortus were seen. It was possible to distinguish different tubules, but the epithelial cells covering the tubule walls were not characteristically apparent. Therewere a huge amount of differentiating connective tissue surrounding ductus epididymidis and ductus deferens.

This study is the first one to define morphological features of testis in 80 days old wild pig fetal siblings. It concluted that this study will be benefical for the future studies.

Keywords: Anatomy, Light Microscopy, Testis, Wild Pig Fetus

POSTER-15

THE EFFECT OF CEFQUINOME ON HEMATOLOGICAL AND BIOCHEMICAL PARAMETERS FOLLOWING REPEATED SUBCUTANEOUS ADMINISTRATIONS IN SHEEP

ORHAN ÇORUM[a], KAMİL UNEY[a], AYSE ER[a], DUYGU ÇORUM[b]

[a] Selcuk University, Faculty Of Veterinary Medicine, Department Of Pharmacology And Toxicology, Konya, Turkey

[b] Kastamonu University, Arac Rafet Vergili Vocational School, Kastamonu, Turkey

kuney@selcuk.edu.tr

Abstract:

Cefquinome is a fourth-generation cephalosporin, which was developed solely for veterinary use. Although cefquinome is not approved for use in sheep, it is in common use for the treatment of infections in sheep caused by susceptible pathogens. However, there is a little knowledge about side effects resulting from the use of cefquinome in sheep. The objective of this study was to evaluate the effect of cefquinome on blood hematological and biochemical parameters following repeated subcutaneous administrations in sheep. The study was conducted with six clinically healthy Merino sheep with age and body weight of 1.5±0.2 years and 39±2.7 kg (mean±SD), respectively. Cefquinome (Cobactan 2.5%) was administered subcutaneously at a dose of 2.5 mg/kg into the axillary region of each sheep once daily for five consecutive days. Blood samples were collected by jugular venipuncture prior to drug administration and at 48h and 120h following the first drug administration. Blood samples were analyzed to determine hematological (red blood cells, hemoglobin, hematocrit, mean corpuscular volume, mean corpuscular hemoglobin volume, mean corpuscular hemoglobin, white blood cells, lymphocyte, monocytes, granulocytes, platelets) and biochemical (albumin, aspartate aminotransferase, alanine aminotransferase, gamma-glutamyl transpeptidase, alkaline phosphatase, blood urea nitrogen, cholesterol, creatinine, creatine kinase, total protein, triglyceride, urea) parameters. Biochemical and hematological parameters did not alter significantly following repeated subcutaneous administrations in comparison to the corresponding control values (day 0). These results indicate that cefquinome could be safe and well tolerated following repeated subcutaneous administrations of 2.5 mg/kg once daily for five consecutive days in sheep. However, further studies involving a larger number of animals are necessary to determine the safety margin of cefquinome for different dose levels.

Keywords: Cefquinome, Blood Biochemistry, Hematology, Sheep

POSTER-16

THE EFFECTS OF INDUCIBLE NITRIC OXIDE SYNTHASE ON BOVINE ENZOOTIC HEMATURIA-ASSOCIATED URINARY BLADDER TUMORS

HİKMET KELEŞ[a], M. FATİH BOZKURT[a], AYKUT ULUCAN[b], H. HÜSEYİN DEMİREL[c], HAYATİ YÜKSEL[d], ERKAN KARADAŞ[a], İ. AYHAN ÖZKUL[e]

[a] Afyon Kocatepe University, Faculty of Veterinary Medicine, Department of Pathology, Afyonkarahisar, Turkey

[b] Bingol University, Vocational School of Health Services, Department of Medical Services and Techniques, Bingöl, Turkey

[c]Afyon Kocatepe University, Bayat Junior Technical College, Department of Laboratory and Veterinary Health, Afyonkarahisar, Turkey

[d]Bingol University, Faculty of Veterinary Medicine, Department of Pathology, Bingöl, Turkey

[e] Ankara University, Faculty of Veterinary Medicine, Department of Pathology, Ankara, Turkey

hkeles@aku.edu.tr

Abstract:

Chronic ingestion of bracken fern (*Pteridium aquilinum*) by cattle produces urinary bladder tumors causing a syndrome called bovine enzootic hematuria (EH). Multiple tumors, more than one type (epithelial, mesenchymal, or a mixture of both), may be present in bladder. Nitric oxide (NO) is a free radical (FR) and contains unpaired electron its structure. Reactions of this molecule are important for organism. Oncogenesis occur by the way of oncogene activation, tumor suppressor gene inactivation, and cell proliferation when the reactions of NO get out of the control. There is any study about the effects of NO on the EH-associated urinary bladder oncogenesis.

In this study, existence of inducible nitric oxide synthase (iNOS) and its effects on the EH-associated oncogenesis were examined on some critical tumor markers. Protein p53 (p53), Proliferating Cell Nuclear Antigen (PCNA), 8-hydroxy-2'-deoxyguanosine (8-OHdG), and Vascular Endothelial Growth Factor (VEGF) were examined for tumor suppression, cell proliferation, oxidative DNA damage, and angiogenesis, respectively. Apoptosis were investigated both Caspase-3 (CASP3), and BCL2-associated X protein (BAX). In cases, iNOS react as negative in the Uroplakin 3 (UP3) positive normal urothelium which preserves the structure of asymmetric unit membrane (AUM), but positive reaction were seen at the AUM modified and UP3 negative urothelium. In addition, 8-OHdG positivity was observed at the iNOS positive, and UP3 negative areas. Moreover, intracytoplasmic p53 disorganization was obtained in the iNOS positive regions. Intracytoplasmic p53 disorganization specifies the functional loss of p53 due to endoplasmic reticulum (ER) stress. Functional loss of p53 can cause inhibition of both CASP3, and BAX-associated apoptosis. Thus, active role of iNOS, as a FR derivative, was showed in the EH cases of cattle.

Keywords: iNOS, 8-OHdG, UP3, CASP3, BAX, p53, VEGF, bladder; enzootic hematuria

POSTER-17

SARCOCYSTOSIS IN THE CREMASTER MUSCLE OF AN INFERTILE BULL, SPERMIOSTASIS AND ORCHITIS

KAMİL SAĞLAM[a], HİKMET KELEŞ[b]

[a] Ondokuz Mayıs University, Faculty of Veterinary Medicine, Department of Surgery, Samsun, Turkey

[b] Afyon Kocatepe University, Faculty of Veterinary Medicine, Department of Pathology, Afyonkarahisar, Turkey

hkeles@aku.edu.tr

Abstract:

In this report, macroscobical and microscobical findings of an infrequent sarcocystosis, located in the Musculus cremaster, and its possible effects on the fertility by external genital organs in a bull were described.

The case was detected in a slaughtered bull in a slaughterhouse. During inspection, thickened M. cremaster drew attention in a bull. In addition, slight increased testes and epididymides, and inconsiderable proliferative lesions on the caput epididymides were detected. In microscobical examination, Sarcocystis cysts in the cremaster muscle, spermiostasis and extravasation of spermatozoa in the epididymides, and weak intratubular orchitis in the testes were observed.

Keywords: Bull, Sarcocystosis, M. cremaster, Spermiostasis, Orchitis

POSTER-18

DETERMINATION OF LEAD AND CADMIUM MIGRATION FROM CERAMIC CUPS SOLD IN AFYONKARAHISAR, TURKEY

A. FATİH FİDAN[a], YASEMİN KARABULUT[a], MÜRÜVVET DÜZ[b]

[a] Afyon Kocatepe University, Faculty Of Medicine, Department of Biochemistry, Afyonkarahisar, Turkey

[b] Afyon Kocatepe University, Faculty of Science and Arts, Department of Chemistry, Afyonkarahisar, TURKEY

ffidan@aku.edu.tr

Abstract:

Ceramic kitchenwares has long been recognized as important a source of lead and cadmium poisoning. Lead, cadmium and other heavy metals are found to leach from ceramic kitchenwares in concentrations high enough to result serious health hazards.

The aim of the this study was to determine the migration of lead and cadmium from ceramic cups sold in Afyonkarahisar. A total of 25 ceramic cups were purchased from different sources in Afyonkarahisar. These products were applied for 24 hours in 4% acetic acid test as directed in "Turkish Food Codex –Communiqué on Materials and Articles that are in Contact with the Foodstuffs (2002/32)" and lead and cadmium concentrations were determined by ICP-MS.

The results of 4% acetic acid tests was found lower than legal limits of ABD, Japanese, European Union and Turkey policy. However, the future new legislation on this issue is coming with lower acceptable limits for aforementioned countries.

Keywords: Ceramic, Cups, Cadmium, Lead, Migration

POSTER-19

DETERMINING THE CONSUMPTION HABITS RELATED TO PROBIOTIC PRODUCTS

SAVAŞ ASLAN[a], RECEP KARA[b], HİLMİ YAMAN[c]

[a] Afyon Kocatepe University, Faculty Of Medicine, Blood Bank, Afyonkarahisar, Turkey
[b] Afyon Kocatepe University, Faculty Of Veterinary Medicine, Department Of Food Hygiene And Technology, Afyonkarahisar, Turkey
[c]Adnan Menderes University, School Of Health Science, Department Of Nutrition And Dietetics, Aydın, Turkey

savasaslan.aku@gmail.com

Abstract:

Probiotic foods are those foods covering the live microorganisms that assist the functioning of the digestive system. Consumption of such foods contributes to the protection of our health and strengthening of the immune system. Studies that determine the consumption status of the probiotic products in our country and level of knowledge are limited in number. With the purpose of determining the consumption status of probiotic products and level of knowledge in Afyonkarahisar, Turkey, a survey study was carried out on 864 participants between March 2011 and July 2013. It was found in this survey that 51.7% of the participants were females, and 48.1% were males, and ages ranged between 18 and 65. It was also found that while 31.4% of males were informed about probiotic products, 61.1% of females were informed. As regards the educational statuses, it was seen that level of knowledge about probiotic products significantly increased with increasing educational level from primary school level to higher levels. Likewise, level of knowledge about probiotic products increases with the increasing economic income. While the rate of individuals consuming probiotic products is 26.0%, the ratio of individuals believing that they benefit from such consumption among those consuming them was found as 79.1%. Together with this, 72.4% of individuals with digestive problems have the opinion that they benefit from probiotic products. Furthermore, 77.3% of those consuming probiotic products think that these products are natural.

Although probiotic products make positive contributions to our health, their consumption and level of knowledge about them are not in sufficient levels. Probiotic product consumption and level of knowledge increase with the educational levels and economic well-being of individuals. Therefore, it is recommended that studies aiming at measuring the knowledge of public similar to this study must be carried out periodically.

Keywords: Nutrition, Probiotics, Survey

POSTER-20

PRELIMINARY AG AND CU PARTICLE TREATMENT OF CHRONIC OSTEOMYELITIS

CRISTIN COMAN[a], CARMEN CRISTINA SURDU-BOB[b], ENE VLASE[a], FLORICA BARBUCEANU[c], DANUT TURCU[d], MARIUS BADULESCU[b]

[a] Cantacuzino Institute, Bucharest, Romania

[b] Low Temperature Plasma Laboratory, National Institute For Lasers, Plasma And Radiation Physics, Magurele, Romania

[c] Institute For Diagnosis And Animal Health, Morphopathology Department, Bucharest, Romania

[d] Spiru Haret University, Faculty of Veterinary Medicine, Bucharest, Romania

comancristin@yahoo.com

Abstract :

Treatment of chronic osteomyelitis is still an open issue, as no significant success is currently registered. A combination of debridement, bone resection and administration of antibiotics is the most frequent treatment procedure.

The study aimed at observing the effectiveness of a local treatment consisting of Cu and Ag particles in treating chronic osteomyelitis.

Chronic bone infection was induced by inoculation of *Staphylococcus aureus* ATCC 6538 strain, culture of 106 CFU/ml into drilled holes of New Zealand rabbit tibia. Cotton meshes soaked in the microbial culture were used as infection promoters and were inoculated into the holes. The treatment consisting of sub-millimeter Cu and Ag spherical particles (4xCu and 2xAg) was administered 60 days after bacterial inoculation and animal health was monitored for further 30 days. The particles were 0.5 mm diameter. The presence of infection, inflammation as well as signs of bone regeneration were observed by periodic clinical, radiological, microbiological, radiological and histological analysis. A number of 17 rabbits, 4 in the positive reference group, 10 treated and 3 in the positive group (not treated) were involved in this experiment.

No significant changes in body weight between the inoculated rabbits were observed during the observation time interval. Radiological signs of the presence of neoformation tissue were observed in half of the rabbits fifteen days after treatment and in all treated rabbits at the end of experiment. No neoformation tissue was observed in the positive reference group.

The Cu and Ag particle treatment proved to be effective against chronic osteomyelitis. Regenerative processes were observed in all particle treated rabbits. This promising preliminary study is the basis for new experiments where a higher animal health monitoring time interval will be used. This will allow further assessment of efficacy and toxicity.

Keywords: Animal Model, Osteomyelitis, *Staphylococcus Aureus*, Ag And Cu Particles

POSTER-21

TRAUMATIC MEMBRANOUS URETHRAL RUPTURE IN A FOAL

İBRAHİM AKIN[a], CAHİT GÜRSEL BELLEK[a], BURAK BULUT[a], NUH KILIÇ[a]

[a]Adnan Menderes University, Faculty Of Veterinary Medicine, Department Of Surgery, Aydin, Turkey

ibraak@adu.edu.tr

Abstract :

Although urethral problems have seen in various animal species, authors have not been encountered a report on traumatic urethral rupture in foals.

This report describes membranous urethral rupture in a 15 days old, 30 kg Ambling male foal after a wild animal attack and treatment process.

In history, the foal had exposed to wild animal attack 9 days before, and despite receiving treatment getting worse was mentioned.

The foal was exhausted and recumbent. Temperature, heart and respiratory rates were low and capillary refill time was 4 seconds. Several wounds were determined on pubical and inguinal regions. Two of them were fistulae and slightly yellow. One of them was almost 12 cm long, parallel to the penis and had urine collections. Meanwhile, urine discharge was revealed from one of these wounds. Lymphopenia, eisonopenia and mild anemia were detected. Partial oxygen pressure was also low and blood pH was slightly acidic.

After induction, anesthesia was maintained by isoflorane. A Foley catheter was applied and routine surgical procedure was performed for wound care. Ruptured urethra was simple sutured via absorbable material. Subcutaneous tissues and skin were closed in a routine procedure. Gauzes were inserted as a drain through some wounds. Penicillin-streptomycin, ether iodoform were prescribed.

Postoperatively wound care and treatment were maintained. In 5th day night owner reported via telephone call that, inability to defecate and straining. Simultaneously, olive oil was suggested via rectal way. In second call in the same night, urine discharge from operation area was reported and foal was called to reoperation for next day. At the end of the second operation, absence of heartbeat was noticed. Despite the emergency aid, foal couldn't be saved.

As a conclusion, constipation may be a risk for urethral ruptures after surgery in foals. Gastrointestinal features must be examined and laxatives should be prescribed.

Keywords: Foal, Horse, Urethra, Rupture

POSTER-22

CHANGES IN HEMATOLOGICAL AND BIOCHEMICAL PARAMETERS FOLLOWING SINGLE-ASCENDING-DOSE ADMINISTRATIONS OF CEFTRIAXONE IN SHEEP

ORHAN ÇORUM[a], AYŞE ER[a], HATİCE ESER[a], EMRE BAHÇIVAN[a], DUYGU ÇORUM[b], KAMİL ÜNEY[a]

[a] Selcuk University, Faculty Of Veterinary Medicine, Department Of Pharmacology And Toxicology, Konya, Turkey

[e] Kastamonu University, Araç Rafet Vergili Vocational High School, Kastamonu, Turkey

orhancorum@selcuk.edu.tr

Abstract :

Ceftriaxone, a third-generation cephalosporin, is effective for treating infections caused by a wide variety of Gram-positive and Gram-negative microorganisms. Ceftriaxone has a time-dependent effect but high doses are recommended to provide maximal bactericidal activity, to hasten the clinical cure, to prevent the emergence of resistant subpopulations, and to increase antibiotic concentrations in tissue. Although ceftriaxone may be used at different dose levels to treat infections caused by susceptible pathogens in sheep, there is no information available that advises effective clinical use of ceftriaxone. This study aimed to determine the effect of ceftriaxone on hematological (red blood cells, hemoglobin, hematocrit, mean corpuscular volume, mean corpuscular hemoglobin volume, mean corpuscular hemoglobin, white blood cells, lymphocyte, monocytes, granulocytes, platelets) and biochemical (albumin, aspartate aminotransferase, alanine aminotransferase, gamma-glutamyl transpeptidase, alkaline phosphatase, blood urea nitrogen, cholesterol, creatinine, creatine kinase, total protein, triglyceride, urea) parameters following the administration of single-ascending doses in sheep. In this study, six clinically healthy Akkaraman sheep (aged 2-3 years with 51.5 ± 4.2 kg body weight) were used. The study followed a crossover design with a washout period of 15 days between three phases. Ceftriaxone was administered intravenously to each sheep at dose levels of 20, 40 and 80 mg/kg. Blood samples to analyze hematological and biochemical parameters were taken by jugular venipuncture before ceftriaxone administration and 24 hours after the administration of ceftriaxone at each dose level. Hematocrit levels following the administration at the dose of 20 mg/kg were significantly lower than control values (day 0) ($p<0.05$). However, these levels were within normal ranges in sheep. Other hematological and biochemical parameters following the administration of ceftriaxone at each dose level were not significantly different than those of the control values (day 0) ($p>0.05$). These results indicate that the administration of ceftriaxone at single-ascending doses does not change the hematological and biochemical parameters in sheep. However, further research is needed to determine effects of multiple doses in sheep.

Keywords: Ceftriaxone, Sheep, Biochemistry, Hematology

POSTER-23

SEROLOGICAL EVIDENCE OF MAEDI-VISNA INFECTION AMONG INDIGENOUS SHEEP FLOCKS IN VAN PROVINCE OF TURKEY

MEHMET ÇABALAR[a], SÜLEYMAN KOZAT[b]

[a] Harran University, Faculty Of Veterinary Medicine, Department Of Virology, Şanliurfa, Turkey

[b] Yüzüncü Yıl University, Faculty Of Veterinary Medicine, Department Of Internal Medicine, Van, Turkey

mcabalar@harran.edu.tr

Abstract:

Maedi-visna is a multisystemic disease of sheep caused by a *lentivirus* belonging to the *retrovirus* family. This disease is also called as "slow virus infection" and cause of significant economic losses incurred by the sheep industries. The objective of this study was to describe the serological prevalence of *maedi-visna virus* infection in indigenous sheep flocks of Van province, Turkey. For this purpose, 725 serum samples collected from 17 flocks were tested for maedi-visna antibodies by agar gel immunodiffusion test. Of the 725 serum samples tested, 466 were taken from ewes, 10 rams and 249 lambs. As a conclusion, total 30 specimens (4.1%) were found to be seropositive. Of 17 sheeep flocks, in the 10 (58.8%) were detected to be seropositive animals for maedi-visna virus. Positive rates were varied between 1.0% - 15.0% in these flocks. According to sex and age, antibodies were demonstrated in 26 sera (5.5%) of the ewes, one (10.0%) of the rams and 3 (1.2%) of the lambs. These results provide evidence the presence of maedi-visna infection among indigenous sheep flocks in Van province of Turkey.

Keywords: Maedi-Visna, Sheep, Turkey.

POSTER-24
ACUTE TOXICITY OF ABAMECTIN (INSECTICIDE) ON *DAPHNIA MAGNA* (STRAUS, 1820)

CANSEV AZGIN[a], MÜNİR ZİYA LUGAL GÖKSU[a]

[a]Çukurova University, Faculty of Fisheries, Adana, Turkey

mzlg1952@cu.edu.tr

Abstract:

Abamectin is used for the insect and mite pests control cotton, citrus fruit, vegetables, potatoes and other crops. Abamectin is not directly used in aquatic ecosystems, but it may have adverse impact on aquatic environment. The aim of this study was to determine the acute toxicity of Abamectin (Insecticide) on *Daphnia magna* (Straus, 1820) (*Cladocera, Crustacea*).

D. magna were obtained from the Çukurova University Fisheries Faculty Freshwater Fish Research and Application Station. In the experiment, five different concentrations and one control group have been used. Each experiment was repeated two times. In this research, the static test method of acute toxicity test was used. The experiments were conducted under laboratory conditions at 20±2 ^{o}C.

The results have been estimated with the dose-response data and were fitted with a log-logistic model by using R 3.0 statistical computation environment and DRC library. The 24-h and 48-h acute LC50 values were determined.

According to the results, acute toxic effects researched Abamectin, the 24-h and 48-h LC50 acute toxic lethal concentration values for *D. magna* were calculated to be 0.020 µgl-1 and 0.0043 µgl-1.

Keywords: Bioassay, Insecticide, Abamectin, *Daphnia Magna*, LC50

POSTER-25

A STUMP PYOMETRA CASE COMPLICATED WITH STUMP GRANULOMA IN A SPAYED QUEEN

MEHMET BUĞRA KIVRAK[a], İBRAHİM AYDIN[a], FATMA SATILMIŞ[a], HASAN ALKAN[a]

[a]Selcuk University, Faculty Of Veterinary Medicine, Department Of Obstetrics And Gynecology, Konya, Turkey

fatmasatilmis@selcuk.edu.tr

Abstract:

Residual corpus uteri can be infected as a consequence of not removing all corpus uteri during ovariohysterectomy. These cases are called with stump pyometra. On the other hand Stump granuloma occurs because of cutting a far distance from the ligation which exists cranial of cervix. At the same time, it can be occur because of using inappropriate suture material.

A 4 years old mix breed queen that referred to our clinic with the complaint of unhealed vaginal discharge consisted the material of the study presented. It was learnt during anamnesis that the queen passed an OHE 3 years ago.Also it was stated by owner that vaginal discharge reduces partially with the treatment of antibiotic and corticosteroid but after a while it increases again.

An bad odour, green, vaginal discharge in clinical examination and an anechogenic, well demarcated mass cranial of bladder during ultrasound examination was detected. Operation was performed through a ventral midline incision under general anesthesia. A mass adhered to the bladder was detected during laparotomy and after examination, it was decided to be residual uterus part. Adhered bladder and residual uterus were separated and fluid-filled uterus part was removed. Unabsorbable surgical suture was not detected in the residual uterus. During post-operative follow-up, it was determined that vaginal discharge ceased totally.

The results suggest that complication occurred during OHE because of inappropriate operation technique. Operations are so safe as long as it performs appropriately.

Keywords: Queen, Ovariohysterectomy, Stump Pyometra, Stump Granuloma.

POSTER-26

EFFECTS OF NANOEMULSIONS ON FOOD-BORNE PATHOGENS

MUSTAFA DURMUŞ[a], YEŞİM ÖZOĞUL[a], YILMAZ UÇAR[a], ALİ RIZA KÖŞKER[a], MUSTAFA ÖZ[b]

[a] Çukurova University, Faculty of Fisheries, Adana, Turkey
[b] Aksaray University, Faculty of Veterinary Medicine, Aksaray, Turkey

mdurmus@cu.edu.tr

Abstract:

The use of nanotechnology in the food area is still at a very limited scale despite the high potential benefit from nanotechnology in the food industry. However, in recent years international food companies have paid attention to benefit from this technology and nanotechnology-based techniques have been introduced to the food industry to provide solutions to the problems associated with food safety. The antimicrobial properties of nanoparticles extending the shelf life of food without causing changes in the flavour and colour are of great importance. Among nanoparticles, nanoemulsions are dispersions of one liquid phase in another immiscible liquid phase and their size varies from 100 to 600 nm. This nanoemulsions droplets play a vital role on microorganisms and influence of nanoemulsion droplet size on antimicrobial properties are known. Nanoemulsions are also known as antimicrobial preservatives. In many research it has been reported to have bactericidal activity against pathogen bacteria such as Staphylococcus aureus, Pseudomonas aeruginosa, Escherichia coli and Listeria monocytogenes in food products. The reason is that they connect the structure of water and thereby limiting the access to water of microorganisms. These components are lightweight and biologically reliable. They also have a negative effect on pathogens (prokaryotic) while nanoemulsions do not cause an adverse effect on eukaryotic cells. This non-specific mechanism of action of nanoemulsions do not lead to the development of resistant strain. This study reviews the effects of nanoemulsion on food-borne pathogens.

Keywords: Nanoemulsion, Food-Borne Pathogens

POSTER-27

THE SIGNIFICANCE OF THE BACTERIOCINS AND THEIR HEALTH BENEFITS

FATİH ÖZOĞUL[a], IMEN HAMED[a], A. RIZA KÖŞKER[a]

[a]Çukurova University, Faculty of Fisheries, Adana, Turkey

akosker@cu.edu.tr

Abstract:

Bacteriocins are proteinaceous substances with bacteriocidal activity. Numerous bacteriocins are produced by different Gram-positive (lactic acid bacteria especially *Lactobacilli*) and Gram-negative (*Enterobacteriaceae*) bacteria. Bacteriocins are classified in four different classes along with their properties, structure, molecular weight, and antibacterial spectrum. Nisin is well-known example of bacteriocin. Bacteriocins are ribosomally synthesized and produced during the primary phase of growth. They are considered safe additives, prevent the growth of pathogens and spoiling microorganisms including *Clostridium perfringens, Campylobacter jejuni, Escherichia coli* O157:H7, *Listeria monocytogenes, Salmonella, and Staphylococcus aureus*. Thus bacteriocins could enhance food quality and safety as well as prolong the self-life. Those antimicrobial peptides could provide health benefits and be more acceptable to consumers as alternative to chemical preservatives which reduce counts of bacteria in the gut. The only bacteriocin which has been approved in the food industry by the World Health Organization is nisin. Nisin has a wide spectrum of activity especially against Gram-positive bacteria. However, it has a limited spectrum of activity against Gram negative bacteria or fungi. It was admitted into the European food additive list with the number of E234.

Bacteriocins can be used instead of antibiotic as they are natural low-toxic peptides sensitive to proteases which has a solution to the problem of multiple drug resistance caused by the overuse of antibiotics. Besides they show significant effect against antibiotic-resistant bacteria. Bacteriocins is able to be also formed in situ in the gut by probiotic bacteria to fight intestinal infections and help maintaining a healthy gut microflora. Other health benefits have been reported such as prevention of inflammation, respiratory infection, cancer and influence the host immune system.

Keywords: Bacteriocins, Health Benefits, Antibiotic Properties, Lantibiotics, Nisin, Probiotic Bacteria

POSTER-28

THE POTENTIAL BENEFITS AND HARMS OF TETRODOTOXIN

A. RIZA KÖŞKER[a], FATİH ÖZOĞUL[a], YILMAZ UÇAR[a], MUSTAFA DURMUŞ[a], DENİZ AYAS[b], YEŞİM ÖZOĞUL[a]

[a]Çukurova University, Faculty of Fisheries, Adana, Turkey

[b]Mersin University, Faculty of Fisheries, Mersin, Turkey

akosker@cu.edu.tr

Abstract:

Biological toxins have been used in medical disciplines all over the history of human beings. They can be lethal to other creatures as well as they can be life-saving due to the medical functions. One of the most important biological toxins is Tetrodotoxin (TTX), which can be found in marine and some terrestrial organism.

TTX is extremely potent and oldest known as marine toxin and it is a non-protein toxin that is weakly basic, odorless and colorless. There is no known antidote for TTX which is an effective sodium channel inhibitor. TTX is thermostable and also cannot be removed by washing, cooking as well as irradiation. Some scientists have reported that TTX has different activity in different medical fields including analgesic in extreme pain and more effective than morphine in an anesthetic effect for surgery. Additionally, TTX has been shown to reduce activity of heroin craving and associated anxiety. Researchers are also working antitumor activity of TTX on cancer patients.

TTX, a deadly toxin, most commonly found in pufferfish that is regarded as one of the “worst alien fishes” of the entire the Mediterranean Sea. The increasing number of alien species in the Mediterranean Sea has had ecological and economical effects especially on the Eastern Mediterranean Sea in recent years. Pufferfish, members of Tetraodontidae family, has many negative effects on local species, fishery industries and public health. If the usage of TTX increase in the medical discipline, the Mediterranean Sea will be as a good source of biological toxins. Therefore, the general properties and medical usage of TTX have been focused in order to understand potential benefits and harms of TTX.

Keywords: Biological toxins, Tetrodotoxin, Pufferfish, Analgesic

POSTER-29

INVESTIGATION OF *TOXOPLASMA GONDII* TISSUE CYSTS IN CHICKEN BRAIN TISSUE*

SAMİ GÖKPINAR[a], KADER YILDIZ[a]

[a] Kırıkkale University, Faculty Of Veterinary Medicine, Department Of Parasitology, Kırıkkale, Turkey

samigokpinar@hotmail.com

Abstract:

Toxoplasma gondii is an obligate intracellular parasitic protozoon that can cause infections in humans, mammalians and avian. Chicken, especially free-range, has a great importance in the life cycle of *T. gondii* due to their contribution of transmission to the last host cats. In this study investigation of *T. gondii* tissue cyst by percoll gradient and nested-PCR in brain tissues of free-range chicken bred publically.

For this purpose, 140 skulls of chicken slaughtered at public bazaars of Kirikkale was collected and brought to laboratory under cold chain. Following the craniotomy, brain tissues was homogenised and investigated microscopically for the presence of tissue cysts after processing with percoll gradient. Remaining homogenates was used for extraction of DNA and analyzed by nested-PCR.

Toxoplasma gondii tissue cyst containing bradyzoites was determined 15.7% in Percoll gradient method. In the nested PCR it was determined the presence of the DNA of the parasite rate of 34.2%. Although tissue cysts has not seen by percoll gradient at 29 samples, positive results has observed by nested-PCR.

This study investigated the *T. gondii* tissue cysts in free-range chickens in Turkey and for this purpose this is the first study used Percoll gradient and nested- PCR. Free-range chickens are an important source of infection for the cats as final host and the results of this study showed that people should not consume chicken meat raw or undercooked.

*This work was supported by a grant from Kırıkkale University Scientific Research Coordination Unit of, Turkey (Project number; 2014/118)

Keywords: *Toxoplasma Gondii*, Nested-PCR, Percoll Gradient, Tissue Cyst, Chicken

POTER-30

COMPARISON OF LOW FREQUENCY LAZER AND SCATRICIAN POMMADE APPLICATION ON BURN HEALING IN RABBITS

NAZLI DEMİRCAN[a], GÜLTEKİN ATALAN[b], AYHAN ATASEVER[b], GÖRKEM EGEBAŞ[b]

[a] Provincial Directorate of Ministry of Food Agriculture and Livestock, Bitlis, Turkey
[b] Erciyes Üniversity, Faculty of Veterinary Medicine, Kayseri, Turkey

Gulty@hotmail.com

Abstract:

In this study, as an alternative treatment to conventional methods, the effects of low frequency of lazer on second degree of burn skin was investigated and compared with scatrician pommade according to healing status.

30 New Zelland adult rabbits allocated to three group, each had 10 rabbits were included into study. A 2x2 cm brass plate was heated by beck fire for one minute and applied on the skin for 10 second and a second degree of wound created. Physological solution was only applied for the first group of rabbits for 15 days period. A mixture of scatrican and antibiyotic pommade was leaded for the second group of rabbits. A type of Galyum arsenice low frequency of lazer device, 830 nm and 640 mili wold in power was contacted to skin of group III by elipsoidal pattern locally for 10 minutes once a day.

All rabbits were controlled makroscopically for possible wound healing daily. Rabbits in all groups were euthanised at 15 days following wound creation and the area dissected for histopathologic examination.

There was no skin scatrication for the rabbits in Group I and the wound tended to heal as shell formation. Epithelial tissue formation missed and granultion tissue formed recently with a few number of blood vessel.

6 rabbits had wound with shell formation and the other two had granulation tissue formaiton. Granulation tissue and vessel formation in Group II was more intensive compared to Group I. Collgen tissue formation was also apparent.

Granulation tissue with intensive blood vessel formation were detected intensively for the rabbits in Group III, which were significantly higher than those of the the other groups.

Keywords: Wound, Lazer, Skatrician, Pommade.

POSTER-31

EFFECTS OF XYLAZINE-KETAMINE, XYLAZINE-PROPOFOL, XYLAZINE-KETAMINE-PROPOFOL ADMINISTRATION ON BLOOD GASES IN SHEEPS

ESRA GÖKALP[a], SEMA GÜRGÖZE[b], SEMİH ALTAN[c]

[a] Provincial Directorate of the Ministry Of Food Agriculture And Livestock, Şanlıurfa, Turkey
[b] Dicle University, Faculty Of Veterinary Medicine, Department Of Biochemistry, Diyarbakır, Turkey
[c] Dicle University, Faculty Of Veterinary Medicine, Department Of Surgery, Diyarbakır, Turkey

esragokalp2009@hotmail.com

Abstract:

This study was aimed at the investigation of the impact of xylazine-ketamine, xylazine-propofol and xylazine-ketamine-propofol combinations on blood gases in sheep.

The study was conducted on 28 clinically healthy one-year-old nulliparous Zom ewes, which were of an average live weight of 43.27±4.76 kg.The animals were randomly allocated to four equal groups (n= 7), one of which was maintained as the control group. Apart from the control group, the animals in Group 1, Group 2 and Group 3 were administered intravenous xylazine-ketamine, xylazine-propofol and xylazine-ketamine-propofol combinations, respectively. Blood samples were taken from the jugular vein in all animals before the administration of the anaesthetic agents (minute 0) and at the 15th, 30th, 60th and 120th minutes post-administration.

When each of the three groups were compared to the control group in terms of blood gas and electrolyte levels, decreases in the level of pO2 in Group 1 at the 15th, 30th and 120th minutes, at only the 30th minute in Group 2 and Group 3, decrease in the level of cSO2 in Group 1 at the 15th, 60th and 120th minutes and at only the 60th minutes in Group 2 were found to be significant.

In the present study, it was determined that xylazine-ketamine, xylazine-propofol and xylazine-ketamine-propofol combinations caused decreases in blood gases. This situation may require being cautious when administering such combinations to animals with respiratory and cardiovascular system disorders.

Keywords: Propofol, Ketamine, Xylazine, Sheep, Blood Gases

POSTER-32

EFFECTS OF XYLAZINE-KETAMINE, XYLAZINE-PROPOFOL, XYLAZINE-KETAMINE-PROPOFOL ADMINISTRATOIN ON OXIDATIVE STRESS IN SHEEPS

ESRA GÖKALP[a], SEMA GÜRGÖZE[b], SEMİH ALTAN[c]

[a] Provincial Directorate of the Ministry Of Food Agriculture And Livestock, Şanlıurfa, Turkey
[b] Dicle University, Faculty Of Veterinary Medicine, Department Of Biochemistry, Diyarbakır, Turkey
[c] Dicle University, Faculty Of Veterinary Medicine, Department Of Surgery, Diyarbakır, Turkey

esragokalp2009@hotmail.com

Abstract:

This study was aimed at the determination of the effects of xylazine-ketamine, xylazine-propofol and xylazine-ketamine-propofol combinations on oxidant-antioxidant levels in sheep.

The study was conducted on 28 clinically healthy one-year-old nulliparous Zom ewes, which were of an average live weight of 43.27±4.76 kg.The animals were randomly allocated to four equal groups (n= 7), one of which was maintained as the control group. Apart from the control group, the animals in Group 1, Group 2 and Group 3 were administered intravenous xylazine-ketamine, xylazine-propofol and xylazine-ketamine-propofol combinations, respectively. Blood samples were taken from the jugular vein in all animals before the administration of the anaesthetic agents (minute 0) and at the 15th, 30th, 60th and 120th minutes post-administration. Blood samples were taken for the detection of total antioxidant capacity (TAS), total oxidant capacity (TOS), plasma malondialdehyde (MDA) and erythrocyte catalase (CAT) activities.

The results obtained in this study demonstrated that, when compared to the control group, no significant difference occurred in serum TAS, TOS, plasma MDA or erythrocyte CAT levels with the use of the different anaesthetic combinations in sheep.

It was ascertained that the anaesthetic combinations of xylazine-ketamine, xylazine-propofol and xylazine-ketamine-propofol had no adverse effect on blood MDA levels or the measured levels of the antioxidant parameters investigated in Zom sheep.

Keywords: Propofol, Ketamine, Xylazine, Sheep, Antioxidants

POSTER-33

THE INFLUENCES OF LAVENDER AND LEMON BALM EXTRACTS ON QUALITY PROPERTIES OF ANCHOVY (*ENGRAULIS ENCRASICOLUS*) STORED UNDER VACUUM PACK AT 2±1ºC

FATİH ÖZOĞUL[a], RANA ÖZTEKİN[a],ELİF TUĞÇE AKSUN[a]

[a]Çukurova University, Faculty of Fisheries, Adana, Turkey

etaksun@cu.edu.tr

Abstract:

The effects of French lavender (*Lavandula stoechas*) and lemon balm (*Melissa officinalis*) plant extracts on sensory and chemical quality parameters of anchovy (*Engraulis encrasicolus*) fillets stored vacuum pack at 2±1oC were investigated for eleven days. Fish was individually headed, gutted, filleted and washed after arriving on the laboratory. Then the fillets divided into three groups, which were immersed in French lavender (FL), lemon balm (LB) at level of 1 %, and the control without plant extract (C). Sensory and chemical analyses (TVB-N, PV, FFA and TBA) were performed for all groups on days 0, 4, 7, 9 and 11. According to sensory analysis, when fish was rejected by panelist, shelf-life of were found as 7 days for control and 11 days for both treated groups. In conjunction with chemical analysis, fish treated with French lavender extract had lower TVB-N content than other groups. At the limit of acceptability, TVB-N values reached 41.17 mg/100 g for control (7 days), 37.42 and 42.86 mg/100 g for treated with lavender and lemon balm extract (9 days), respectively. PV and TBA content of all fish samples were below 6 meq O2/kg and 0.3 MA/kg, respectively throughout storage period. LB was the most effective on preventing the FFA accumulation while some fluctuations was observed for FFA values among the control and treated groups (P>0.05). Subsequently, the results showed that treatments of fish with French lavender and lemon balm at level of 1% increased shelf life and enhanced the fish quality compared to control.

Keywords: Anchovy,French Lavender,Lemon Balm,Antioxidant Effect

POSTER-34
EFFECTS OF DIFFERENT EXTRACTION METHODS ON THE FATTY ACID COMPOSITIONS OF FISH SILAGE

YEŞİM ÖZOĞUL[a], MUSTAFA DURMUŞ[a], ALİ SERHAT ÖZKÜTÜK[a], GÜLSÜN ÖZYURT[a]

[a]Çukurova University, Faculty of Fisheries, Adana, Turkey

yozogul@cu.edu.tr

Abstract:

Fish which is not suitable for human consumption is used for the production of fish meal and fish silage. Fish silage is regarded as liquid product which results from the action of enzymes naturally present in the fish. This process is accelerated by organic acid which provides favorable conditions for enzymes to break down tissues and inhibits growth of spoilage bacteria and thus allows long-term storage of the raw material. Silage oil obtained from fish processing waste can be used as feed ingredient in the aquaculture industry and even as a food supplement for human consumption due to lower production costs. The n-3 fatty acids has been paid attention because of the prevention of cardiovascular disease (CVD), especially eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) which are found predominantly in fish and fish oils. Therefore, the current study aims to investigate the efficiency of trans-methylation method in fish silage oils extracted by methods of alcohol and centrifuge and also to observe the effects of extraction methods on the contents of fatty acids (especially EPA and DHA) in fish silage made from Equulites klunzingeri (Klunzinger's ponyfish), Carassius gibelio (common carp) and also Dicentrachus labrax (sea bass) processing waste. This project was supported by the Scientific and Technological Research Council of Turkey (TÜBİTAK, TOVAG-213O166). The results of this study showed that alcohol extraction method was more efficient than centrifuge method and also prevented losses of PUFAs by a reduction in the oxidation. The levels of EPA and DHA showed fluctuations for the two extraction methods for each species. Centrifuge extraction gave higher SFAs content than alcohol method whereas there were no significant differences in MUFAs content except sea bass waste..

Keywords: Fatty Acid, Fish Silage

POSTER-35

BIOPRESERVATIVE PROPERTIES (BACTERIOCINS) OF LACTIC ACID BACTERIA

YILMAZ UÇAR[a], ALİ RIZA KÖŞKER[a], MUSTAFA DURMUŞ[a], FATİH ÖZOĞUL[a]

[a]Çukurova University, Faculty of Fisheries, Adana, Turkey

ucarylmz@gmail.com

Abstract:

Nowadays, considerable attentions have been given for the natural additive compounds affecting health in positive aspect, which lead to increase usage of lactic acid bacteria (LAB) as preservatives for food quality and consumer's health. Many strains of LAB that produce bacteriocin can be used as a probiotic or bio-protective agents in different types of fermented food. Bacteriocins are natural antimicrobial substances synthesized by LAB bacteria, which usually produce short-chain and low molecular weight compounds such as organic acids, ethanol, hydrogen peroxide and bacteriocins.

Most of bacteriocins have high heat stability, show an activity in acidic pH foods and can become fragmented with the proteolytic enzymes of the digestive system. Bacteriocins are usually active against only a restricted range of species, mainly Gram positive bacteria. Their biochemical properties and antimicrobial affect spectra are depending on synthesizing microorganisms. Bacteriocins are commonly produced by *Lactococcus, Pediococcus, Leoconostoc and Staphylococcus* species and used as bio-preservative in different food applications. Due to their inhibitory activities against food-borne pathogenic bacteria such as *Listeria monocytogenes, Staphylococcus aureus, Clostridium botulinum and Salmonella spp*., their potential usage has significantly increased for fermented foods. However, usage possibility of bacteriocins together with some antimicrobial substances and other protective substances and processes increase for preservation of foods. Therefore, this review is an update of the communication extracted from recent investigations of the use of LAB as bio-preservative in food are discussed.

Keywords: Lactic Acid Bacteria, Probiotic, Bacteriocin, *Lactococcus, Pediococcus, Leoconostoc, Staphylococcus*

POSTER-36

BIOCHEMICAL AND HEMATOLOGICAL CHANGES IN RESPONSE TO SINGLE-ASCENDIND DOSES OF PENTOXYFILLINE IN SHEEP

DUYGU ÇORUM[a], ORHAN ÇORUM[b], AYSE ER[b], KAMİL UNEY[b]

[a] Kastamonu University, Arac Rafet Vergili Vocational School, Kastamonu, Turkey
[b] Selcuk University, , Faculty Of Veterinary Medicine, Department Of Pharmacology And Toxicology, Konya, Turkey

orhancorum@selcuk.edu.tr

Abstract:

Pentoxifylline, a methylxanthine derivative, has anti-inflammatory, hemorrheologic, and immunomodulatory properties. Pentoxifylline has been suggested for the treatment of several diseases in sheep, such as endotoxemia, septic shock, bronchopulmonary injury, and pre-eclampsia; however, the safety of using this compound in sheep is unknown. The aim of the study was to determine hematological and biochemical changes after single pentoxifylline administrations at increased doses in sheep. Six clinically healthy Merino sheep (1.6±0.24 years and 57±4.2 kg body weight) were used in this investigation. Each sheep received pentoxifylline intravenously at doses of 10, 20, and 40 mg/kg in a crossover design with a 15-day washout period. Blood samples were collected from the jugular vein before (0 day) drug administration and 12 h after drug administration. Each blood sample was evaluated by whole blood examination (red blood cells, hemoglobin, hematocrit, mean corpuscular volume, mean corpuscular hemoglobin volume, mean corpuscular hemoglobin, white blood cells, lymphocyte, monocytes, granulocytes, platelets) and via biochemical parameters (albumin, aspartate aminotransferase, alanine aminotransferase, gamma-glutamyl transpeptidase, alkaline phosphatase, blood urea nitrogen, cholesterol, creatinine, creatine kinase, total protein, triglyceride, urea). Although mean corpuscular volume, mean corpuscular hemoglobin volume, mean corpuscular hemoglobin, hematocrit, and monocyte levels were significantly different from control values at the dose of 20 mg/kg and monocytes levels at the dose of 10 mg/kg, all of values were situated within the reference intervals previously reported for sheep. No significant changes in biochemical parameters were observed following drug administration at all dose levels. These results indicate that pentoxifylline, following single intravenous administrations at 10, 20 and 40 mg/kg, do not produce significant changes in hematological and biochemical parameters in sheep. However, a multiple-ascending dose study is needed to further support the safe use of pentoxifylline

Keywords: Pentoxifylline, Sheep, Biochemistry, Hematology

POSTER-37

CASPASE-3 EXPRESSION AND DETERMINATION OF APOPTOTIC CELL IN RAT TESTIS DURING POSTNATAL PERIOD

MEHMET ÖZBEK[a], EMEL ERGÜN[a], AHMET CEYLAN[a], FEYZULLAH BEYAZ[b], NUH YILDIRIM[a], FÜSUN ERHAN[a], ÖZGE ÖZGENÇ[a], LEVENT ERGÜN[a]

[a] Ankara University, Faculty Of Veterinary Medicine, Department Of Histology-Embryology, Ankara, Turkey

[b] Erciyes University, Faculty Of Vet. Med. Dept. Of Histology And Embryology, Kayseri, Turkey

fsn.erhn@gmail.com

Abstract:

Apoptosis is a programmed cell death. Caspases are one of important components for death mechanisms. Caspases are synthesized inside cell and named as procaspases. These inactive procaspase enzymes are activated with taking apoptosis signalling. DNA breakages are formed at last stage of apoptosis and they could be determined in situ by TUNEL method.

We aimed to demonstrate the expression of caspase-3 and periodic alteration of apoptosis in rat testis during postnatal period. We used anti-caspase primary antibody with Strept-ABC method. TUNEL method was applied for demonstrating of DNA breakages.

At five days old rats, procaspase-3 reactivity was only seen in Leydig cells. At 20 days old rats, an immunoreaction for procaspase-3 was determined in the cytoplasm of Leydig cells and spermatids in center of seminiferous tubules (ST). At 50 and 70 days old rats, we observed a positive reaction for primary spermatocytes in pachytene stage. But there was no positive immunoreaction for spermatogonia.

Using TUNEL method, we rarely determined positive cells in centre of ST at 5 days old rats. At 20 days old rats, the positive cells numbers remarkably increased in ST. At 50 and 70 days old rats, positive cells were sporadically seen in ST. These positive cells were composed of spermatogonia, spermatocytes and spermatids. The spermatids shown as positive were observed in 12th stages of cycles.

During postnatal period, procaspase-3 expression and apoptotic cell number didn't show parallelism. That condition could be explained that apoptotic process has many pathways or procaspase-3 does not turn into its active form. The numeric ratio of Sertoli/germ cells is very important for normal spermatogenesis. With puberty, proliferative activity was done but the proliferation was increased in spermatogonia. The reason of observing intensive apoptosis could be considered as the protecting of numeric ratio of Sertoli/germ cells at the first spermatogenis wave.

Keywords: Apoptosis, Caspase 3, Rat,Testis, Tunnel,

POSTER-38

FATAL OUTCOME OF RETAINED SURGICAL SPONGE (GAUZOMA) IN A DOG

CEREN DİNLER[a], GÜLTEN EMEK TUNA[a], RAHİME YAYGINGÜL[a], HÜSEYİN VOYVODA[a]

[a]Adnan Menderes University, Faculty of Veterinary Medicine, Aydın, Turkey

ceren.dinler@adu.edu.tr

Abstract:

Retained surgical sponge, so called gauzoma, in the abdominal cavity following surgical operation is a rare but potentially life threatening complication. Its estimated incidence is approximately 1 per 1000-1500 surgical operations in humans. In comparison to the human literature, few reports about this complication in the veterinary literature exist. In this report, we present a case of gauzoma after ovariohysterectomy in a dog. A 2.5-year-old neutered female crossbred dog was referred to the Veterinary Teaching Hospital, Adnan Menderes University, with a seven-day history of abdominal pain, vomiting, inappetence, weakness, and soft foul-smelling stool. One week prior to the presentation, attempt to treat the dog for exocrine pancreatic insufficiency in a private clinic was unsuccessful. On referral, physical examination revealed the dog to be alert and responsive. She had subfebrile fever of 39.2 ºC, painful cranial abdomen, and suspicion of a mass lesion on abdomen palpation. Complete blood count and serum biochemical analysis were within normal limits. Radiography showed a suspicious abdominal mass in the ventrolateral aspect of the cranial abdominal cavity. Based on history and the clinical and radiographical findings, acute pancreatitis and/or an abdominal tumor were suspected and symptomatic and supportive treatment were carried out for 3 days. The control physical and radiographical examination showed no improvement in the findings of the dog. Abdominal ultrasonography also showed a round mass with fluid echogenicity in one area. Under the impression of an intra-abdominal mass, gauzoma and localised peritonitis were finally diagnosed after an exploratory laparotomy. Unfortunately the dog died during laparotomy. According to the owner report, the dog was neutered 1.5 years previously and until recently her health condition was uneventful. In conclusion, when a history of previous ovariohysterectomy is presented, gazuoma should be considered in the differential diagnosis of bitch with an intraabdominal mass.

Keywords: Gauzoma, Retained Surgical Sponge, Ovariohysterectomy Complications, Dog

POSTER-39

PREVALENCE OF COCCIDIAL INFECTION OF SAANEN GOATS IN AFYONKARAHISAR PROVINCE

HATİCE ÇİÇEK[a], FERİDE SEVİMLİ[a], MUSTAFA ESER[b], ABUZER ACAR[c]

[a] Afyon Kocatepe University, Faculty Of Veterinary Medicine, Department Of Parasitology, Afyonkarahisar, Turkey

[b] Anadolu University, Faculty Of Open Education, Health Programs, Eskisehir,Turkey

[c] Afyon Kocatepe University, Faculty Of Veterinary Medicine, Department Of Internal Medicine, Afyonkarahisar, Turkey

hcicek@aku.edu.tr

Abstract:

Fecal samples from 187 Saanen goats in Afyonkarahisar province examined to determine the prevalence and intensity of the multiple species of Eimeria that infect the goats in this region. The number of oocysts per gram of feces (OPG) was determined by the modified McMaster technique. The mean coccidia oocyst counts were found range 2-1276. Oocysts in fecal samples were detected using a flotation technique, sporulated and identified to species based on morphological features of the sporulated oocysts. *Eimeria* oocysts were found in 39.6 % of the fecal samples. Eight species of *Eimeria* were identified. *E. caprina* (43.2 %) and *E. ninakohlyakimovae* (33.8 %) were the most prevalent species. Other species present were *E. aspheronica* (25.7 %), *E. caprovina* (21.6 %), E. alijevi (18.9 %), *E.jolchijevi* (5.4 %), *E. christenseni* (2.7 %), E. arloingi (2.7 %), and unidentified *Eimeria* species (12.2 %). However, no clinical symptoms were observed in the examined goats. The results of the present investigation have implications for the control of coccidial infections in goats in Afyonkarahisar province of Turkey.

Keywords: Coccidiosis, *Eimeria*, Saanen Goats

POSTER-40

THE NUTRITIONAL COMPOSITION AND THE CHANGES IN QUALITY PARAMETRES OF SMOKED EUROPEAN EEL (Anguilla anguilla) STORED AT +4°C

YEŞİM ÖZOĞUL[a], ALİ SERHAT ÖZKÜTÜK[b], ABDURRRAHMAN POLAT[a], GÜLSÜN ÖZYURT[a]

[a]Çukurova University, Faculty of Fisheries, Adana, Turkey
[b]Çukurova University, Yumurtalık Vocational Scholl, Adana, Turkey

yozogul@cu.edu.tr

Abstract:

Freshness assessment of smoked European eel (*Anguilla anguilla*) stored in refrigerated conditions (+4 oC) was assessed by proximate composition, fatty acid composition, sensory and chemical methods for up to 24 days. The proximate composition of the smoked European eel was determined as 58.78 % for moisture, 2.1 % for ash, 22.49% for crude protein and 15.42 % for lipid. After the smoking process, the SFA, MUFA and PUFA values were found as 26.78 %, 45.06 % and 13.84 %, respectively. During storage, pH, TVB-N, PV, FFA, and TBA values started as 6.45, 38.50 mg N/100 g, 4.71 meq O2/kg, 1.62 (% oleic acid) and 0.3648 mg malonaldehyde/kg respectively and at the end of the storage period by showing a significant difference ($P<0.05$), they reached to 6.26, 28.59 mg N/100 g, 6.04 meq O2/kg, 0.58 (% oleic acid) and 1.7033 mg malonaldehyde/kg, respectively. According to the sensory evaluation, the consumption limit for smoked European eel stored in +4 oC was observed to be 21 days. It was determined that even if some significant changes for the chemical indices occur during the storage period, the values did not reach to an unacceptable level at the end.

Keywords: European eel, *Anguilla anguilla*, smoking, proximate composition, fatty acid composition, peroxide value, free fatty acids, TBA

POSTER-41

DIETARY FIBER AND WATER-HOLDING CAPACITY IN HORSE PERFORMANCE

OSMAN KÜÇÜK[a]

[a]Erciyes University, Faculty of Veterinary Medicine, Kayseri, Turkey

osmankucukwy@yahoo.com

Abstract:

Dietary fiber has several health and digestive benefits in domestic animals as well in humans. Soluble fibers such as fructans and pectin dissolve in water while insoluble fibers such as cellulose and hemicellulose are slow fermenting and do not dissolve in water. Water-holding or hydration capacity (WHC) of fiber refers to ability of fiber in feedstuffs to bind water molecules as g water/g dry feed. Fiber moves forward to the intestinal track as it soaks up water and intestinal juice. Soluble fiber is highly fermentable and also has a greater WHC, increasing water content of the gut and perhaps being of benefit to horses subjected to prolonged exercise and resulting dehydration. Furthermore, an additional fermentation of soluble fibers should result in increased VFA production which may also be of benefit to the animal as an energy source. For endurance horses, consumption of forage 4-6h before an event can be beneficial. Forage holds water and electrolytes in the large intestines which would be available for absorption during prolonged exercise, helping offset fluid and electrolyte losses in sweat. However, the racehorses will not benefit from consumption of a high-fiber meal in the hours preceding competition (negative effect on performance). High fiber in racehorses would slow the speed of the horse due to increased total weight carried. Therefore, it is a common practice in racehorses to limit or eliminate hay feeding on the day of the race. This review will highlight the importance of dietary fiber along with water-holding capacity in horse performance.

Keywords: Fiber, Water-Holding Capacity, Horse Performance

POSTER-42
A MORPHOMETRIC STUDY ON THE SKULL OF THE HEMŞİN SHEEP

SEMİNE DALĞA[a], KADİR ASLAN[b], YALÇIN AKBULUT[c]

[a] Kafkas University, Institute Of Health Sciences, Kars, Turkey
[b] Kafkas University, Faculty Of Veterinary Medicine, Kars, Turkey
[c] Kafkas University, Faculty Of Medicine, Kars, Turkey

azygos_1453@hotmail.com

Abstract:

In this study, male Hemşin skulls, which are commonly bred for meat and milk consumption in the provinces of Artvin and Rize in the Eastern Black Sea Region, were used. It is mainly raised in Eastern Black Sea region. Hemşin sheep has adapted to the rainy and humid climate of the region. In addition, both sexes of Hemşin sheep may not have horn. If a male Hemşin sheep has horn, it mostly becomes big and spiraling.

Ten adult male Hemşin sheep skulls procured from the slaughterhouse of Ardanuç municipality of Artvin province have been used. Furthermore, skin and glutei on the skull have been scraped off, and then macerated in hydrogen peroxide for 25-30 minutes. The skulls have been measured in line with the literature by reading measurement data from the measurements conducted at 39 different measurement points. Later on, the skulls have been photographed. After the pictures have been computerized, the mean, standard deviation and correlation values were identified on SPSS (18.0) software. The craniofacial indices were also calculated.

The statistical analysis results compared with previously performed similar studies of the obtained value which determined that Hemşin sheep skull is generally higher than the value of Tuj and Morkaraman sheep. It was reported that the least breadth or Tuj sheep is between the orbits of 66.58±2.6 while it is 70.4±2.538 mm for Morkaraman sheep. This rate is defined as 77.07±4.1 for Hemşin sheep. We have concluded that this study will be helpful in future anatomical studies such a study was not conducted.

Keywords: Hemşin, Skull, Morphometric

POSTER-43

EFFECT OF SPECIMEN STORAGE ON SOME BLOOD PARAMETERS IN HEALTHY CATS

NEJRA HADZIMUSIC[a]

[a] University Of Sarajevo, Faculty of Veterinary Medicine, Sarejevo, Bosnia and Herzegovina

hnejra@bih.net.ba

Abstract:

The objective of this study was to compare and investigate differences upon specimen storage on some blood parameters in healthy cats. Although a blood samples should be analyzed shortly upon collection, sometimes a delay might occur, especially if specimens are collected at the end of the work-week or couriered to the laboratory. Regard to that, in twelve healthy cats we investigated changes that occur in the red blood cell (RBC) count, white blood cell (WBC) count, hemoglobin concentration and packed cell volume (PCV), due to different storage conditions such as temperature and time. Blood samples were stored at refrigerator (4°C) and water bath (21°C) temperatures during a storage period of 48 hours. Based on our research results we conclude following: blood samples obtained from cats stored up to 48 hours at 4°C are reliable for RBC count, WBC count, hemoglobin concentration and PCV value. Blood samples provide legitimate results for hemoglobin concentration stored up to 48 hours at 21°C.

Keywords: Blood Parameters, Cat, Duration Of Storage, Storage Temperature

POSTER-44

AMOEBIASIS

MUSTAFA KABU[a]

[a] Afyon Kocatepe University, Faculty of Veterinary Medicine, Afyonkarahisar, Turkey

mustafakabu@hotmail.com

Abstract:

Amebiasis is a parasitery illness as a result of *Entamoeba histolytica's (E. histolytica)* emplacement inside or outside the intestine. Amebiasis is an colitis, characterized by persistent diarrhea, which is prevalent worldwide. It is widespread in people and nonhuman primates, occasionally seen in dogs and cats, and uncommon in other mammals. Mammals become infected by ingesting food or water contaminated with feces containing infective cysts. The outcome of an *E. histolytica* exposure may be diarrhea, dysentery, or amebic liver abscess, the latter occurs mainly in mammals. Although it is estimated that nearly 40-100.000 people die because of Amebiasis around the world, it is known that %90 of people don't have its symptoms. What is the reason of that why the symtops aren't seemed clearly? What is exactly the mechanism between host and parasit? What is the ratio of Amebiasis as a result of *E.histolytica* in animals comparison to other diarrhea cases? What is the ratio of possible Amebiasis at livestock the people consume? What is the role of livestock at the contamination of that parasitery? How does *E.histolytica* go around with the animals and what are the syptoms of that? As a result of that for sure the effects and results of amibioz over all the mammals should be clearified in detail. Furthermore as a result of all these evaluations we suppose that it will be possible both the interaction of host-parasitery and the activity of protection-treatment reconstruction to be understood more clearly.

Keywords: Amoebiasis, *Entamoeba Histolytica*, Farm Animal

POSTER-45

LOCALISATION OF SOME IMMUNE ACCESSORY CELLS IN THE BULL AND RAM TESTIS AND EPIDIDIYMIS

HAKAN SAĞSÖZ[a], BERNA GÜNEY SARUHAN[a], M. ERDEM AKBALIK[a], SERKAN ERDOĞAN[b], M. AYDIN KETANİ[a]

[a] Dicle University, Faculty Of Veterinary Medicine, Diyarbakır, Turkey
[b] Namik Kemal University, Faculty Of Veterinary Medicine, Tekirdağ, Turkey

hakansagsoz@hotmail.com

Abstract:

Testicular immune cells are important contributors to the response of the testis to infection, as well as the regulation of spermatogenesis, steroidogenesis and other homeostatic functions of the testis. The purposes of the present studies were to determine the existence and localization of immune cells in bull and ram testis and epididiymis by using immunohistochemistry. The testis and epididimis patterns taken from fifteen healthy, adult bull and ram were obtained from a local slaughterhouse. For the immunohistochemical determination, tissue samples were fixed in Bouine solution for 12 h at room temperature, washed in tap water, dehydrated, cleared and embedded in paraplast. A strept-ABC immunohistochemical staining procedure was applied to serial sections were cut at 5 µm thickness for the determination of the localization of macrophages. Our immunohistochemical findings is shown, CD68, CD8, MHCI and MHCII staining appeared as reddish- brown granular cytoplasmic and nuclear reactivity. The positive immunolabeling CD68, CD8, MHCI and MHCII were present in the testes characterized by both bull and ram, and were positioned in the interstitium, close to leydig cells, and sertoli cell nuclei. CD68, CD8, MHCI and MHCII positive cells in the proximity of blood vessels were also recorded. Intraepithelial immunostaning positive CD68 were found in overall ductus epididiymis of caput, corpus and cauda epididiymis. In addition these observations, CD68, CD8, MHCI and MHCII positively immunoreaction was seen in basal cells of the epididymal epithelium. These results demonstrate that, the distribution and localization of testicular CD68, CD8, MHCI and MHCII to be similar to each other in the bull and ram; however cell count of bulls higer. It is concluded that macrophages,T-cytotoxic lymphocytes, MHCI and MHCII seem to be the most important immunological cell type in the bull and ram testes and epididymis.

Keywords: Testes, Epididiymis, CD68, CD8, MHCI, Mhcii

POSTER-46

THE FINGERPRINTS OF BIODIVERSITY "DNA BARCODING"

MAKBULE BAYLAN[a], GAMZE MAZI[a], ÖZGEN ARZU ÇAM[a]

[a]Çukurova University, Adana, Turkey

gmazi@cu.edu.tr

Abstract:

3/4ths of the planet we live on is covered with water, and Turkey is a peninsula bound on three sides with sea. In light of this information, it is clear that water-based life has a wide spread and rich biodiversity. Considering these facts, it is obvious that there are still many undiscovered species, and in recent years, "DNA barcoding" is a term that is often heard for the purposes of making the identification of these species more convenient and reliable. At this time, with the increase of popularity of the aquacultural resources on the market, and development of scientific technologies, DNA barcoding is used in the aquaculture industry as well. In this compilation, we intend to provide information about the fields DNA barcoding is used and the work flow and the ways it is applied.

Keywords: COI, DNA Barcoding, Mitochondrial DNA, Species Identification

POSTER-47
COMPARISON OF REPRODUCTIVE PERFORMANCE AND MILK YIELD OF DAIRY BUFFALO AND DAIRY CATTLE IN TURKEY

HASAN ÇİÇEK[a], MURAT TANDOĞAN[a], CANGİR UYARLAR[a], ÜMİT ÖZÇINAR[a]

[a]Afyon Kocatepe University, Faculty Of Veterinary Medicine, Afyonkarahisar, Turkey

hascicek@hotmail.com

Abstract:

In this study, reproductive performances and milk yields of dairy buffaloes and cattle were compared in Turkey. Study materials are reproduction features which is belonging to Anatolian Buffaloes, Holstein and Brown Swiss cattle. Age at first calving, calving interval, gestation length and service period were evaluated as reproductive performance. Taking into account the findings of the research conducted in Turkey, the differences in reproductive performance and milk yield of buffalo and cattle that were examined its impact on the profitability. In this study, it was determined that the dairy buffaloes have some disadvantages in reproductive performance and milk yield comparing to cattle. Although buffalo milk has better quality in terms of fat and protein, lactation period and low milk yield comparing to cattle which caused by reducing the profitability in buffalo breeding. Especially, the Anatolian Buffalo's both of reproductive performance and milk yield values remain below the other races (Murrah, Nili-Ravi), the difference increases between buffalo and cattle in Turkey. As a result, when the racial characteristics are improving in terms of reproductive performance and milk yield of Anatolian Buffaloes in Turkey, it can be said that alternative investment opportunity will provide to dairy cattle.

Keywords: Buffalo, Cattle, Reproductive Performance, Milk Yield, Turkey

POSTER-48

THE ABOMASUM DISEASES WITHOUT TRANSPOSITION IN CATTLE AND CALVES*

OSMAN SAFA TERZİ[a], MEHMET ŞAHAL[a], ŞULE DÜZLÜ[a], DUYGU KAHRAMAN[a]

[a]Ankara University, Faculty of Veterinary Medicine, Ankara, Turkey

osmansafaterzi@gmail.com

Abstract:

Abomasal disease in cattle of all ages are frequently be encountered. Altough some of these cases have certain diagnosis most of them have still uncertain diagnosis because of the lack of obvious clinical signs. Especially abomasal ulcers often occur in cattle and there is not prominent symptoms along time. However, in the abomasal ulcers which has significant intraruminal blood loss or generalized peritonitis due to perforation on abomasal wall; significant clinical sypmtoms occur and these diseases are fatal. In this review, it is aimed to reveal the exact diagnosis by determining significant clinical symptoms of abomasal disease that emerged in cattle and calves. Prognostic evaluation of cases that has long time treatment period and effective treatment option in some cases, the evaluation of the economic losses and related expenses unnecessary for the prevention and treatment is also reported.

*This review is published in Turkiye Klinikleri Journal of Veterinary Sciences in 2014. (Turkiye Klinikleri J Vet Sci 2014;5(3):61-71)

Keywords: Cattle And Calf; Abomasum; Abomasal Dilatation; Abomasitis; Abomasal Ulcer

POSTER-49

MORPHOMETRIC FEATURES OF MALAKAN HORSE SKULL ACCORDING TO GENDER

İFTAR GÜRBÜZ[a], ÖMER GÜRKAN DİLEK[a], YASİN DEMİRASLAN[a], KADİR ASLAN[b]

[a] Mehmet Akif Ersoy University, Faculty Of Veterinary Medicine, Department Of Anatomy, Burdur, Turkey

[b] Kafkas University, Faculty Of Veterinary Medicine, Department Of Anatomy, Kars, Turkey

ogdilek@mehmetakif.edu.tr

Abstract:

The morphological characteristics acquired by craniometry and it may be the key to sex determination and enable us to detect and identify unknown animals in somewhere of the world. Sex determination from skull morphology is substantial in medico-legal cases and archaeology. The study was aimed to determine in terms of gender morphometric values of Malakan Horse skull.

In the study 5 male, 5 female, total 10 adult Malakan Horse skulls were used After dissecting skin and superficial muscles of Malakan Horse head, it was maceration by boiling. Sixty-one measurements were obtained from cranium by digital caliper. The measurements were analized SPSS (20.0 version) programme.

In the study the average of lenght of male Malakan Horse skull was calculated as 518.28 mm, the average of skull breadth 192.81 mm, the average of length of female Malakan Horse skull 515.19, the average of skull breadth 184.29 mm. The neurocranium length was found as the average of 224.27 mm in male, 244.80 mm in female. It was seen that the differences in U27, U24a and U49 was significant in statistical analysis presented between the genders.

As a result, the measurements of Malakan Horse skull which possess to endemic raised area in Turkey was determined. It is expected that this knowledge will be basic data source about horse skull in zooarchaeological excavation especially in Eastern Anatolian Region.

Keywords: Gender, Malakan Horse, Morphometry, Skull

POSTER-50

THE EFFECTS OF PREGNANCY ON THE PLASMA LEVELS OF CK, AST, ALT AND ALP ENZYMES IN ARABIC HORSES

TEVHİDE SEL[a], SERKAN ÇOŞKUN[a], GÜZİN ÇAMKERTEN[b]

[a] Ankara University, Faculty of Veterinary Medicine, Ankara, Turkey
[b] Aksaray University, Faculty of Veterinary Medicine, Aksaray, Turkey

tevhidesel@gmail.com

Abstract:

Serum biochemical parameters are important tools for assessment of the health status of animals and these have been shown to vary even in healthy animals due to differences such as; sex, season, oestrous cycle and reproductive status. Serum enzymes have also a particular application in judging the status of performance in horses.

In this study, the effects of pregnancy on the plasma levels of CK, AST, ALT and ALP were studied in Arabic race horses. For this purpose, 5 to 8 years old 16 throughbreed Arabic mares were used as research materials. In the first group (n:8) mares were up to the 5th month of pregnancy. In the control group (n:8) are non pregnant mares. The blood for analysis were taken once time during study. Plasma enzyme activities were determined using automated analysers.

Average of ALP, AST, ALT and CK activities in pregnant and nonpregnant mares were found within the referance ranges. It was found that in pregnant mares, the average of CK levels were significantly higher than in nonpregnant mares levels. The activities of ALT, ALP and AST were not significantly altered in pregnant mares compare to nonpregnant mares.

In conclusion that, serum AST, ALT and ALP levels were not altered during pregnancy, significant differences were observed in CK levels of pregnant mares. However, the number of animlas in this study was not high enough for estimating physiological status but the values obtained in this study may serve as preliminary data in pregnant mares.

Keywords: Arabian Horse, Pregnant Mares, Plasma Enzymes, Ck

POSTER-51

HISTOLOGICAL and IMMUNOHISTOCHEMICAL FEATURES of a PLURIVISCERAL METASTATIC MAMMARY CARCINOSARCOMA in a DOG

LATİFE ÇAKIR BAYRAM[a], FRANCESCA MILLANTA[b], ARZU TAŞDEMİR[c], GUIDO ROCCHIGIANI[b],HATİCE KARAMAN[c], VEHBİ GÜNEŞ[a], GÖRKEM EKEBAŞ[a], GENCAY EKİNCİ[a]

[a] Erciyes University, Faculty of Veterinary Medicine, Kayseri, Turkey
[b] Pisa University, Faculty of Veterinary Science, Italy
[c] Kayseri Research And Training Hospital, Department Of Pathology, Kayseri, Turkey

lcakir@erciyes.edu.tr

Abstract:

Carcinosarcoma of the mammary gland (MG) in dog is an extremely rare condition, accounting for %0.6 of all mammary malignancie. In order to gain insight into the similar and different characterizing aspects of MG tumor diagnosed cases should be reported with a literature review.

A case of mammary carcinosarcoma is reported in a 11-year-old, Terrier crossbreed dog, which was mastectomy operation had been performed 2 years ago. The patient presented extensive and coalescent nodules in all MG. Thoracic X-Ray was performed and multiple opaque areas was seen in the lung. The patient's health condition deteriorated despite all medical supports. As a result of this patient was euthanized.

Microscopically, the neoplasm had infiltrative growth with a solid pattern and was composed of a cell population. There were also neoplastic areas with a myxoide matrix differentiated chondroid, osteoid, or adipose tissue.

The mammary masses showed strongly and diffusely positive immunolabeling for anti-cytokeratin and anti-vimentin. All the metastatic lesions that mesenchimal component predominates were positive for vimentin. As opposed to the no cytokeratin-positive cells were observed in this areas. These findings were considered compatible with metastatic osteosarcomatous component of a primary mammary tumor.

Carcinosarcoma of the MG is a biphasic and its nature must be confirmed using immunohistochemistry. Metaplastic changes may have malignant potential but should not be considered as malignant lesions. The most significant histopathological parameter is the identification of transitional zones between the epithelial and mesenchymal cells. Primary carcinosarcoma of the MG is a rare tumor with aggressive biological behavior and sarcomatous component of this present tumor has a high metastatic potential. The patients should be closely monitored due to the unknown or unpredictable biological behavior of this tumor.

Keywords: Dog, Carcinosarcoma, Mammary Gland, Immunohistochemistry,Metastasis

POSTER-52

THE EFFECTS BODY CONDITION SCORE CHANGES ON EMBRYONIC DEATH RATES IN LACTATING KWPN MARES

SERHAN DURMA[a], İBRAHİM MERT POLAT[b], ÖMER KORKMAZ[c], İLKNUR PİR YAĞCI[b], ESER AKAL[a], MUZAFFER ÇELEBİ[a]

[a] Ondokuz Mayis University, Faculty Of Veterinary Medicine, Department Of Reproduction And Artificial Insemination, Samsun, Turkey

[b] Kırıkkale University, Faculty Of Veterinary Medicine, Department Of Obstetrics And Gyneacology, Kırıkkale, Turkey

[c] Harran University, Faculty Of Veterinary Medicine, Department Of Obstetrics And Gyneacology, Şanlıurfa, Turkey

vethekmert@gmail.com

Abstract:

Embriyonic deaths (ED) are one of the most important economic losses in breeding mares. Energy deficit and hormonal changes in the lactating mare is expected to increase the incidence of embriyonic deaths. In this study, it was aimed to investigate the liability of ED from lactation and body condition score changes during breeding season in KWPN (Koninklijk Warmbloed Paard Nederland) mares. At the onset of reproductive activity inception in lactation, average body condition score (BCS) was 7.44 ± 0.24, until the second estrous cycle postpartum it was decreased (6.89 ± 0.20), and by the end of the breeding season an upward tendency (6.96 ± 0.18) was observed. In the non-lactating mares the average BCS was (6.33 ± 0.21) rising continuously until the end of the breeding season (7.17 ± 0.31). The rate of embryonic deaths were 25.58% in lactating mares (11 of 43 pregnancy). In the non-lactating mares, total of 16 pregnancies were recorded with no embryonic mortality was observed. As a result, the decrease in embryonic death affected from body weight and BCS, depending on the energy loss in lactating KWPN mares was concluded to be remarkable factors with increasing incidence. Therefore the reproductive status of the mares in the generative approach has been demonstrated that a strategy should be kept in mind strongly.

Keywords: KWPN, Mare, Embriyonic Death, Lactation, Body Condition Score

POSTER-53

THE INVESTIGATION OF THE STATUS OF *FELINE IMMUNODEFICIENCY VIRUS (FIV)* AND *FELINE LEUKEMIA VIRUS (FELV)* IN NATURAL INFECTED DOMESTIC CATS IN TURKEY

B. TAYLAN KOÇ[a], SERHAT ÖZGERMEN[b], T. ÇİĞDEM OĞUZOĞLU[b]

[a] Adnan Menderes University, Faculty Of Veterinary Medicine, Department Of Virology, Aydın, Turkey

[b] Ankara University, Faculty Of Veterinary Medicine, Department Of Virology, Ankara, Turkey

s.ozgermen@gmail.com

Abstract:

Feline Immunodeficiency Virus (FIV) and *Feline Leukemia Virus (FeLV)* are the most significant viral agents which affect negatively to especially immune system in both healthy and clinically infected domestic cats. *FIV* and *FeLV* have been investigated during three years in domestic cats in Turkey. Breed, age, gender and vaccination status have been recorded for each sampled cat in our study. Despite of 21 of 170 (12.5%) samples were detected as positive for *FIV,* any samples were not observed against to *FeLV*. Multivariate assessment was done according to informations belong to *FIV* infected cats. In conclusion, *FIV* has indicated increasing contagiousness rates compared to previous studies in Turkey and was seemed that being widespread among the male and unvaccinated cats.

Keywords: *FIV*, *FeLV*, Cats, Turkey

POSTER-54

ACARINE HYPOPI (SARCOPTIFORMES: ACARIDAE) ON *ALPHITOBIUS DIAPERINUS (COLEOPTERA: TENEBRIONIDAE)* LARVAE FROM BROILER LITTER IN TURKEY

CANBERK TİFTİKÇİOĞLU[a], NAFİYE KOÇ[a], AYŞE ÇAKMAK[a], ZAFER KARAER[a], SERPİL NALBANTOĞLU[a]

[a] Ankara University, Faculty of Veterinary Medicine, Department of Parasitology, Ankara, Turkey

nafiyekocc@gmail.com

Abstract:

Alphitobius diaperinus is a common insect pest of poultry houses, in particular broiler litter and is capable of transmitting a large number of poultry diseases and parasites. We collected samples broiler house which produces broiler for poultry integration (Special Company) because of detecting the presence Arthropod in poultry litter from Ankara area. Samples were examine under the Stereo microscope and mites were found on these larvae, we prepared them with balsam to identify. *Phoretic deutonymphs (hypopi)* of an *Acaridae* mites were detected on *A. diaperinus* larvae during examination of poultry litter were collected from Ankara and around. Hypopus is a form of resistant deutonymph of acarid mites to environmental condition and they are different from normal deutonymphs in morphology. Mites hold on to insects to transport by it from an inconvenience to convenience environment. The first reported *Acarine hypopi* on *A. diaperinus* in Turkey.

Keywords: *Hypopus*, *Alphitobius Diaperinus*, Poultry Litter, *Acaridae*, Turkey

POSTER-55

THE INVESTIGATION OF THE EFFECTS OF APITOXIN ON SOME HEMATOLOGIC PARAMETERS, FASTING BLOOD GLUCOSE, BODY WEIGHT, FOOD AND WATER CONSUMPTION OF EXPERIMENTALLY INDUCED DIABETIC RATS

BARIŞ DENK[a], FATİH FİDAN[a]

[a]Afyon Kocatepe University, Faculty of Veterinary Medicine, Afyonkarahisar, Turkey

bdenk@aku.edu.tr

Abstract:

Diabetes mellitus is a metabolic disease resulting from disorder of insulin excretion, insulin activity or both. Hyperglycemia and hyperglycemia induced chronic seconder disorders reduces the quality of life in patients with diabetes. We have got an experiment with streptozotocin induced experimental diabetes model of 40 male Wistar-Albino rats to find out if apitoxin therapy method which is an important branch of apitherapy have effects on fasting blood glucose, body weight, food and water consumption. As a result, we have observed an amelioration in hyperglycemic effect of diabetes to some extent and a decline in food and water consumption, differencies in body weight and some hematologic parameters. All of these parameters are important for assessing the prognosis of diabetes.

Keywords: Apitherapy, Apitoxin, Diabetes Mellitus, Streptozotocin

POSTER-56
ANALYSIS OF SERUM AMYLOID A AND HAPTOGLOBIN IN CALVES

MUSTAFA KABU[a]

[a]Afyon Kocatepe University, Faculty of Veterinary Medicine, Afyonkarahisar, Turkey

mustafakabu@hotmail.com

Abstract:

Acute phase proteins are the proteins that changes are observed in their plasma concentrations in cases of tissue damage and various diseases. The increased hepatic synthesis of Serum amyloid A (SAA) and Haptoglobin (Hp), conjointly called acute phase proteins, is among the major segments of this response. Thanks to the discovery of these new biomarkers, the clinical monitoring of various diseases has become more available and their clinical application has commonly been examined in human medicine to optimize the diagnosis, evaluation, treatment, prognosis and therapeutics of many diseases. Numerous studies have been undertaken in order to figure out the benefits of acute phase proteins in several diseases in calves as well; however, they still need to be utilized more in veterinary medicine, especially for farm animals. This article has reviewed the acute phase response and clinical application of Serum amyloid A and Haptoglobin in calves along with their diagnostic use in clinical practice and application in the monitoring of treatment that are believed to be one of the most rewarding practical uses of the mentioned proteins.

Keywords: Acute phase proteins, Clinical practice, Calves

POSTER-57

THE EFFECTS OF LACTATION ON REPRODUCTIVE PARAMETERS IN MARES

İBRAHİM MERT POLAT[a], SERHAN DURMAZ[b], İLKNUR PİR YAĞCI[a], ÖMER KORKMAZ[c]

[a] Kırıkkale University, Faculty Of Veterinary Medicine, Department of Reproduction and Artificial Insemination, Kırıkkale, Turkey

[b] Ondokuz Mayıs University, Faculty of Veterinary Medicine, Department of Reproduction and Artificial Insemination, Samsun, Turkey

[c]Harran University, Faculty of Veterinary Medicine, Department of Obstetrics and Gyneacology, Şanlıurfa, Turkey

ilknurpiryagci@gmail.com

Abstract:

The similar production management approaches on lactating and non-lactating mares might be resulted in some reproductive problems. In this study, it was aimed to eluciate the effects of hormonal variations on reproductive system in lactating and non-lactating mares and to gain a different perspective of production methods will be included reproductive status in equine industry. The study was carried out during breeding season on 34 Thoroughbred mares. No artificial lightening was performed and no hormonal application was conducted in order to activate the ovarian activity during the study. Rectal palpation and B–Mode real time, 5 MHz linear probe transrectal ultrasonography and teasing method were performed daily in mares following foal heat and in non-lactating mares starting from the seven days after the preceding ovulation until the next ovulation for oestrous cycle follow-up. Jugular vein blood samples were collected in EDTA tubes two days interval between 8:00 AM and 08:30 AM. At the follicular phase of cycle, largest follicle diameter of lactating mares (43,75±0,45 mm) was found higher than non-lactating ones (41,79±0,69 mm) ($P<0,05$). Serum estradiol levels of lactating mares (23.29 ±1.18 pg/mL) during the follicular phase of cycle was found lower than non-lactating mares (28.87±1.42 pg/mL) ($P<0,01$). At the first 60 days of pregnancy, mean serum progesterone levels was significantly lower ($P<0,001$) in lactating (9.84±0.59 ng/mL) than non-lactating mares (14.48±0.93 ng/mL). The results showed that largest follicle sizes could be affected from the tonic effects of parturition on folliculogenesis and premature follicular deviation, in addition to lactational status. These data demonstrate that veterinary practitioners should consider the lactational status of mare during breeding managements. It can be concluded that, evaluation of detailed intrafollicular factors that affect the follicle growing are strongly required to eluciate the exact effects of lactation on reproductive performance in mares.

Keywords: Mare, Estradiol, Progesterone, Lactation, Pregnancy Rate

POSTER-58

LIPID BASED CHITOSAN FILMS

H. İBRAHİM KAHVE[a], MUSTAFA ARDIÇ[a]

[a]Aksaray University, Faculty Of Engineering, Aksaray, Turkey

hibrahimkahve@gmail.com

Abstract :

Recently, food and packaging industries have been joining efforts to reduce the amount of food packaging materials. Edible food and coatings have become popular in the food industry, because they produce less waste, are cost effective, and offer protection after the package has been opened. The use of edible films in food products seems new, but food products were first covered by edible films and coatings many years ago. Chitosan films are examined under four headings. These are carbohydrate films, lipid films, protein films and complex films. Lipid compounds contain neutral lipids of glycerides.Lipids are commonly added to food coatings to impart hydrophobicity. Lipids are mainly used for their efficiently as a water-vapor barrier in edible films. The structure, degree of saturation, chain length, physical state, shape and dimension of crystal and distribution of lipids into the film influence the functional properties of the film. Wax and glycerides are examples of lipid based films.

Keywords: Chitosan, Films, Lipid, Wax, Gleycerides

FULL TEXT SUBMISIONS

FULL TEXT SUBMISSIONS-1

APPLICATIONS OF DIFFERENT COMET ASSAY (THE SINGLE CELL GEL ELECTROPHORESIS) METHODS FOR DETECTING DNA DAMAGE IN CRYOPRESERVED FISH SPERM

BURAK EVREN İNANAN[a], NAZLI YILDIRIM[b], EKİN DEMİRKAYA[c]

[a] Aksaray University, Eskil Vocational School, Aksaray, Turkey

[b] Sıtkı Koçman University, Graduate School of Natural and Applied Sciences, Department of Biology, Muğla, Turkey

[c] Sıtkı Koçman University, Graduate School of Natural and Applied Sciences, Department of Fisheries, Muğla, Turkey

ABSTRACT

Cryopreservation as an assisted reproduction method is commonly used for successful long-term storage of not only human but also animal gametes, even their embryos. Moreover, cryopreservation of sperm offers many advantages. In fish, for instance, it is useful for improving artificial reproduction, facilitating genetic manipulation, and reducing the amount of male breeder's stocks. However, after cryopreservation, sperm cell could have some problems such as loss in motility and DNA damage, leading to lower fertilization and hatching rates. The comet assay is a simple, but sensitive tool for detecting strand breaks in DNA in single sperm cells. In this study, three comet assay methods which contain different chemical agents and have different application times were carried out on fish sperm. The mixed sperm samples obtained from mature carp (Cyprinus carpio) males were used in the experiments. Firstly, using fresh sperm samples, DNA damage is classified by means of lysis solutions of each used method without H2O2 and with 12, 25 and 50 µM H2O2. Thus, DNA damage is visually scored by measuring the DNA tail of each sperm cell in fluorescent microscope images as positive control (undamaged DNA), 1, 2, and 3 classes of damage, referring from the less to more damaged sperm cells. Secondly, after thawing, cryopreserved sperm samples were applied by the comet assay methods. The results of three methods have shown no significant differences among the percentages of undamaged DNA (67.7±2.0 %, 69. 3±1.8 % and 68.2±2.8 %) and total damaged DNA (32.3±2.0 %, 30.7±1.8 % and 31.8±2.8 %) of sperm cells as. On the contrary, there were some statistical differences among the classes of damage. Consequently, all methods have been found successful in detection of undamaged and total damaged DNA but not in the recognition of the damage classes.

Keywords: Cryopreservation, Comet Assay, DNA Damage, Fish Sperm, Single Cell Gel Electrophoresis.

Corresponding author:
BURAK EVREN İNANAN
Aksaray University, Eskil Vocational School, Department of Veterinary Science, 68100, Aksaray, Turkey.
burakinanan@aksaray.edu.tr

INTRODUCTION

In reproductive biology, cryopreservation is a common method to preserve sperm cells, and has been applied in sperm of different animal groups as well as in fish sperm (Barbas&Mascarenhas, 2009; Diwan et al., 2010). The cryopreservation of sperm offers many benefits. In fish, for instance, the cryopreservationcould be used in conservation of endangered fish species, acquiringdesired genotype through cross-breeding, easy transportation of genetic material,broodstock protection, optimal sperm utilization in hatchery production and laboratory experiments, easy transportation of genetic material among hatcheries, economically and effectively maintenance of breeders in hatcheries, experimental material for advanced studies (Chao et al., 1987; Chao& Liao, 2001).

Conceptually, the procedure of cryopreservationcould be divided into two main processes; the freezing and the thawing. These processes have potential to damage sperm cells associated with loss of motility and accordingly fertility rate, loss of plasma membrane, the integrity mitochondria and DNA (Cabrita et al., 1998; Suquet et al., 1998).Damages in DNA as a result of the cryopreservation procedure were determined not just in human sperm also in boar, ram, and equine spermby comet assay (Hughes et al.,1997; Baumber et al., 2003; Soliman et al., 2004; Fraser &Strzeżek, 2005). Similar damages in DNA have been found in different fish species such as rainbow trout (Oncorhynchusmykiss), gilthead sea bream (Sparusaurata), loach (Misgurnusfosilis), sea bass (Dicentrarchuslabrax) (Zilli et al., 2003;Kopeikaet al., 2003;Cabritaet al., 2005;).

The comet assay, or also known as single-cell gel electrophoresis, is one of thecommon methods for assessing DNA damage at individual cell level (Ostling&Johanson, 1984). There are several different types of comet assays which mostly vary based on the pH lysis and electrophoresis solutions (Nossoni, 2008). The procedure of comet assay demonstrated in Fig. 1 has seven main steps; isolation of cells, preparation of slides, lysis, unwinding of DNA strands, electrophoresis, neutralization, fluorescent staining and microscopic evaluation.

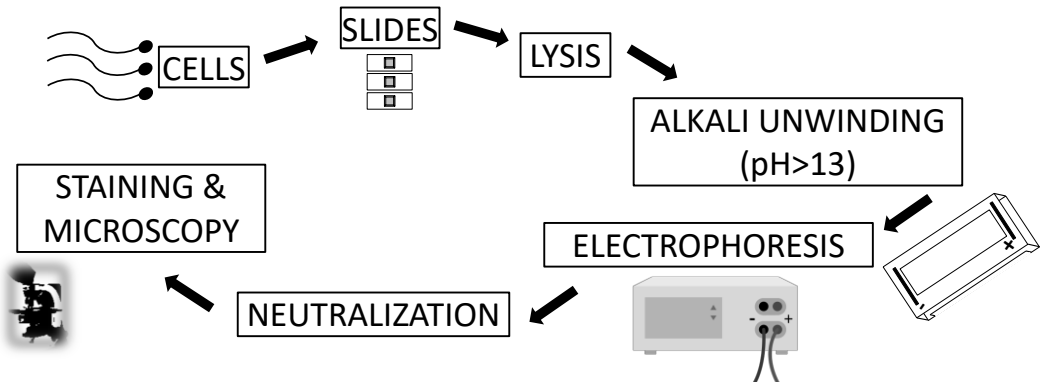

Figure 1. The basic flow diagram of the alkaline comet assay procedure, indicating main steps associated with the assay (modified from Tice et al. 2008).

In this study, three comet assay methods, Singh et al. (1988), Cabrita et al. (2005), Shen & Ong, (2000), which contain different chemical agents and have different application times were

carried out on fish sperm. These three methods have been compared with regards to their detection capacity in DNA damage scores.

MATERIALS AND METHODS

In this study, the mixed sperm samples that obtained from mature carp (*Cyprinuscarpio*) malesmanual abdominalstripping while avoiding any contamination from water, blood, urine, or faeces were used in the experiments. The experiments were carried out in two steps. Firstly, using fresh sperm samples, DNA damage is classified by means of lysis solutions of each used method without H_2O_2 and with 12, 25 and 50 µM H_2O_2. Thus, DNA damage is visually scored by measuring the DNA tail of each sperm cell in fluorescent microscope images as positive control (undamaged DNA), 1, 2, and 3 classes of damage, referring from the less to more damaged sperm cells. Secondly, after thawing, the comet assay methods were applied by the cryopreserved sperm samples.

Fresh and frozen/thawed sperm were rinsed with phosphate buffer saline (PBS) solution, and diluted until a final concentration of 8–10 $x10^6$ sperm per ml. Slides were prepared one day before the experiments applying a thin layer of normal melting point agarose, eliminating agarose in excess.The slides were stored at room temperature and protected from dust and light. Low melting point agarose was prepared next day for the second layer. This agarose was mixed with 30 µl sperm suspension in an Eppendorf tube. The agarose:sperm suspension was added to the slides covering with a coverslip. After that, the coverslip was removed and slides were left to solidify at 4 °C for 10min. For each sample, three slides were prepared and examined. Then, three comet assay methods, Singh et al. (1988), Cabrita et al. (2005), Shen & Ong, (2000), are applied to the sample, which main differences are summarized in Table 1. In all methods, for comet visualization 40 µl ethidium bromide at final concentration 0.5 µg/ml were pipetted into the sample, and the slides were examined with a system combining a fluorescence Zeiss Axio Scope A1 (Germany)microscope with AxioCamICc 5 camera.100 cells were scored per slidein triplicate.

In cryopreservation procedure, the semen samples were mixed in a ratio of 1:9 (v/v)with an extender composed of modified Kurokurasolution (62 mMNaCl, 134 mMKCl, 2 mM $CaCl_2$,1 mM $MgCl_2$, and 2 mM $NaHCO_3$, pH 8.2),10% DMSO, and 10% egg yolk (Magyary et al., 1996).After dilution, the samples were drawn into 0.25 mlstraws (IMV, France) and sealed with polyvinyl alcohol. The straws were placed on a rack 2.5 cm above a liquidnitrogen surface for 10 min and then plunged directly intothe liquid nitrogen. At least seven straws per a sperm sample were frozen. After a week of storage in liquid nitrogen,the samples were thawed in a 20°C water bath for 30 s (Öğretmen&İnanan, 2014).The results are shown as the means ± the standard deviation (SD). Non-parametric Mann–Whitney U tests followed by Kruskall–Wallis test were used, and $\alpha<0.05$ were taken to indicate a significant difference between the treatments in terms of percentages of DNA damages.

Table 1. The main differences in the steps of among the comet assay methods used in this study (Si;Singh et al., 1998: Ca;Cabrita et al., 2005: Sh;Shen&Ong, 2000).

The steps	Si	Ca	Sh
Gel setting on slides	*Bottom layer;* 0.5% NMA[1] *Top layer;* Sample mixed with 0.5% LMA[2]	*Bottom layer;* 0.5% NMA *Top layer;* Sample mixed with 0.5% LMA	*Bottom layer;* 0.75% NMA *Middle layer;* Sample mixed with 0.75% LMA *Top layer;* 0.75% LMA
Lysis solution ***DNA decondensation***	2.5 M NaCl, 100 mM Na_2-EDTA, 10 mMTris, 1% N-Lauroylsarcosine 1% Triton X-100. pH 10, for 1 h at 4 °C	2.5 M NaCl, 100 mMNa_2-EDTA, 10mM Tris, 1% N-Lauroylsarcosine 1% Triton X-100. pH 10, for 1 h at 4 °C + 10 mMdithiothreitol for 30 min at 4 °C. + 4 mMlithium diiodosalicylate for 90min	2.5 M NaCl, 100 mM Na_2-EDTA, 10 mMTris, 1% N-Lauroylsarcosine, 1% Triton X-100. pH 10, for 1 h at 4 °C + RNase treatment[3] for 4 h + proteinase K[4]treatment for 15 h
Electrophoresis solution ***Unwinding of DNA*** ***Electrophoresis running***	1 mM N_2-EDTA, 300 mMNaOH pH >13 for 20min at 4 °C for 20 min at 25 V,4 °C.	1mM Na_2–EDTA, 300 mMNaOH pH 12 for 20min at 4 °C for 10min at 25 V, 300 mA, 4 °C.	100 mMTris, 300mM sodium acetate pH 10 for 20min at 4 °C for1 h at 12 V, 100 mA, 4°C
Neutralization ***Drying of slides***	0.4 M Tris, pH 7.5 for 5 min at 4 °C.	0.4M Tris, pH 7.5 for 5min at 4 °C. methanol for 3min.	0.4 M Tris-HCl pH 7.4 for at least 5 min.

[1]NMA: normal melting agarose; [2]LMA; low melting temperature agarose; [3]RNase solution:2.5 M NaCl, 5 mMTris, 0.05% N-Lauroylsarcosine, pH 7.4, with 10 mg/mlRNase A; [4]proteinase K solution:2.5 M NaCl, 5 mMTris, 0.05%N-Lauroylsarcosine, pH 7.4, with 200mg/ml proteinase K.

RESULTS AND DISCUSSION

The classification of DNA damaged cells were representative in Fig. 1. To obtain this classification, fresh samples were treated by the different concentrations of H_2O_2 in lysis solution. Under the fluorescence microscope, the sperm samples treated with lysis solution with H_2O_2free were observed spherical in diameter between 24-30 µm. DNA of sperm samples exposed by lysis solution with the different concentrations of H_2O_2 were tailed, and length of the tail DNA increased with the higher concentrationsof H_2O_2. Thus, the sperm samples exposed by12 µM H_2O_2 were visualized as an olive tail in 30-40 µm, and scored as grade 1 mild damaged DNA. Similarly, the sperm treatments with 25 and 50 µM H_2O_2 have image formations in the fluorescence microscope grade 2 moderate damaged DNA (length between 40-50 µm) and grade 3 severe damaged DNA (length between >50 µm), respectively.

The three different comet assay methods were applied with the different concentrations of H_2O_2 in lysis solution to reveal that there is any difference in their scaling or classification of DNA damaged (Fig. 3). There were no significant differences between the percentageof both DNA undamaged and damaged cell among the three methods ($P>0.05$). Each H_2O_2 treatments were reflected a grade of DNA damaged. The percentages of undamaged DNA were found 98.8±0.8 %, 98.8±0.6 %, and 98.8±0.8 % with three comet assay methods, Singh et al. (1988), Cabrita et al. (2005), Shen & Ong, (2000), respectively. In the same samples, also the percentages of Grade 1 damaged DNA were detected by all methods as < 2%. In the samples treated with 12 µM H_2O_2, According to the methods, the percentages of Grade 1damaged DNA were scored as 78.7±0.8 %, 21.3±0.8 %, and 78.7±1.8%. In the same samples, the percentages of Grade 2damaged DNA were determined as 21.3±1.8 %, 78.8±1.8 %, and 21.2±1.8 %. In the samples treated with 25 µM H_2O_2, mainly the percentages of Grade 2 damaged DNA was determined as 83.8±1.5 %, 85.3±3.3 %, and 85.0±2.3%. In the same samples, the percentages of Grade 1 and Grade 3 damaged DNA were also found as < 10 %. In the samples treated with 50 µM H_2O_2, the percentages of Grade 3 damaged DNA were scored as 92.0±1.3 %, 93.5±1.3% and 92.8±1.0% with three methods (Fig. 3).

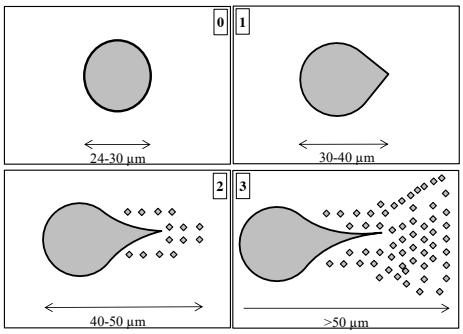

Figure 2.The figuration of comet images showing different levels of damage according to different-sized tails in visual scoring; score 0 (undamaged DNA);grade 1 (mild damaged DNA); grade 2 (moderate damaged DNA); grade 3 (severe damaged DNA).

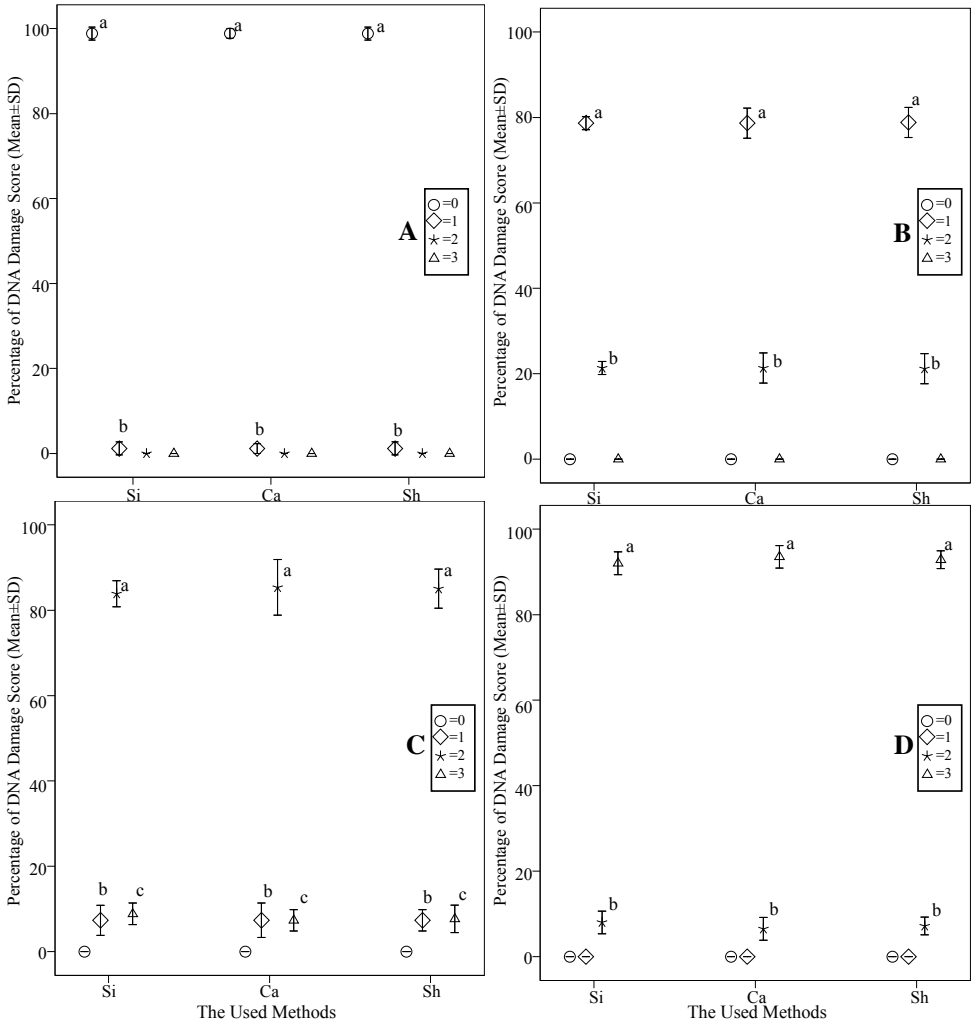

Figure 3.The classification of DNA damage scores (0; undamaged and various degrees of damage from minor to severe, 1, 2, and 3). To obtain this scale, the different concentrations of H_2O_2 added to lysis solution (A; lysis solution with H_2O_2 free, B; lysis solution with 12 µM H_2O_2, C; lysis solution with 25 µM H_2O_2, D; lysis solution with 50 µM H_2O_2) using different methods (Si;Singh et al., 1998:Ca;Cabrita et al., 2005: Sh;Shen&Ong, 2000). The letters show significancy at α= 0.05.

The results of the applications of three methods to cryopreserved sperm were shown in Table 2. According to the methods, the percentages of undamaged DNA were calculated as 67.67±2.0 %, 69.33±1.8 % and 68.17±2.8 % in thecryopreserved sperm. On the other hand, the percentage of total damaged DNA was found as around 30 % with all methods. The only significant differences were observed in the grading of total damaged DNA (P<0.05)

Table 2.The percentages of DNA damages of cryopreserved fish sperm obtained from different methods (Si;Singh et al., 1998: Ca;Cabrita et al., 2005: Sh;Shen&Ong, 2000). Grade 1;mild undamaged DNA, Grade 2;moderate undamaged DNA, Grade 3; severe undamaged DNA.The same letter shows no significanceat the 5% level.

Methods	undamaged DNA	Total damaged DNA	Grade 1	Grade 2	Grade 3
Si	67.67±2.0[a]	32.3±2.0[a]	15.0±2.0[a]	13.0±1.8[a]	4.3±2.5[a]

Ca	69.33±1.8[a]	30.7±1.8[a]	7.8±1.8[b]	11.8±2.4[a]	11.0±1.0[b]
Sh	68.17±2.8[a]	31.8±2.8[a]	4.3±1.3[b]	12.2±1.3[a]	15.3±0.3[c]

Eventually, the remarkable difference among the methods was appeared the pH of electrophoresis solutions. The electrophoresis solution of the method used in Singh *et al.* (1988) was >13, while the others were less tan this value. According to experience gained in the current study, the final cell number and the thickness of agarose gel added to the slides are very critical points in comet assay application of sperm cells. These two factors are directly responsible for the clear visualizing of DNA fragments to be scored in the fluorescent microscope.

It is obvious that DNA damage as a cryoinjury can be detected by different comet assay procedures. Also, both sperm samples treated by H_2O_2 and cryopreserved have shown different resistance behaviors at cell level in terms of DNA damages. The relationships between DNA damages and fertility, and also hatching ratios and malfunctions in offspring should be investigated in the further studies. Recently, with the popularity of gene and sperm banking of animal species, cryopreservation and the detection of cryoinjuries like DNA have become more important. Especially, for this kind of banking, it should be clearly viewed that effects of the different DNA damage grades on next progeny.

CONCLUSIONS

Even though the advantages of usage of cryopreserved sperm in artificial insemination, detection of DNA damages in sperm could turn out to be a critical factor. In this study, three comet assay applicationssuggested by previously studies have been compared. All methods have been found successful in detection of undamaged and total damaged DNA but not in the recognition of the damage classes. Consequently, the comet assay method suggested by Singh *et al.*(1988) is useful than the methods suggested by Cabrita*et al.* (2005) and Shen & Ong, (2000) in terms of consuming less chemical agent and having a shorter application time.

REFERENCES

Barbas, J.P. & Mascarenhas, R.D. (2009). Cryopreservation of domestic animal sperm cells.*Cell Tissue Bank* 10(1), 49-62.

Baumber, J.B., Barry A., Jennifer, J., Stuart A. (2003). Reactive Oxygen Species and Cryopreservation Promote DNA Fragmentation in Equine Spermatozoa. *J Androl* 24(4), 621-628.

Cabrita, E., Alvarez, R., Anel, L., Rana, K.J., Herráez. , M.P. (1998). Sublethal damage during cryopreservation of rainbow trout sperm, Cryobiology 37, 245-253.

Cabrita, E., Robles, V., Rebordinos, L.,Sarasquete, C., Herráez, M.P.(2005). Evaluation of DNA damage in rainbow trout (*Oncorhynchusmykiss*) and gilthead sea bream (*Sparusaurata*) cryopreserved sperm. Cryobiology50, 144-153.

Chao, N. &Liao, I.C. (2001). Cryopreservation of finfish and shellfish gametes and embryos.*Aquaculture* 197, 161-189.

Chao, N.H., Chao, W.C., Liu, K.C., Liao, I.C. (1987).The properties of tilapiasperm and its cryopreservation, *J Fish Biol* 30, 107-118.

Diwan, A.D., Ayyappan, S., Lal, K.K., Lakra, W.S. (2010). Cryopreservation of fish gametes and embryos.*Indian Journal of Animal Sciences* 80(4), 109-124.

Fraser, L. & Strzeżek, J. (2005). Effects of Freezing–Thawing on DNA Integrity of Boar Spermatozoa Assessed by the Neutral Comet Assay.*ReprodDomestAnim* 40, 530-536.

Hughes, C.M., Lewis, S.E.M., McKelvey-Martin,V.J., Thompson, W. (1997). Reproducibility of human sperm DNA measurements using the alkaline single cell gel electrophoresis assay, Mutat.Res. 374, 261-268.

Kopeika, J., Kopeika, E., Zhang, T., Rawson, D.M., Holt,W.V. (2003). Detrimental effects of cryopreservation of loach (*Misgurnusfosilis*) sperm on subsequent embryo development are reversed by incubating fertilised eggs in caffeine, Cryobiology 46, 43-52.

Magyary, I., Urbanyi, B., Horvath, L., (1996). Cryopreservation of commoncarp (*Cyprinuscarpio* L.) sperm II. Optimal conditions for fertilization.*JApplIchthyol* 12, 117-119.

NossoniF. (2008). Single-Cell Gel Electrophoresis (Comet Assay): Methodology, Potential Applications, and Limitations in Cancer Research*. MMG 445 Basic Biotechnology eJournal*4, 30-35.

Öğretmen, F., İnanan, B.E. (2014). Effect of butylatedhydroxytoluene (BHT) on thecryopreservation of common carp (*Cyprinuscarpio*)spermatozoa.*AnimReprodSci*151,269-274.

Ostling, O. & Johanson, K.J. (1984). Microelectrophoretic study on radiation-induced DNA migration from individual cells.*BiochemBiophys Res Commun* 123, 291-298.

Peris, S. I., Morrier, A., Dufour, M., Janice, L. (2004). Bailey Cryopreservation of Ram Semen Facilitates Sperm DNA Damage: Relationship Between Sperm Andrological Parameters and the Sperm Chromatin Structure Assay.*J Androl* 25(2), 224-233.

Shen, H.M. & Ong, C.(2000). Detection of oxidative DNA damage in human sperm and its association with sperm function and male infertility. Free RadicBiol Med **15**, 529-536.

Singh, N.P., McCoy, M.T., Tice, R.R., Schneider, E.L. (1988). A simple technique for quantitation of low levels of DNA damage in individual cells.Exp Cell Res 175(1), 184-191.

Suquet, M., Dreanno, C., Petton, B., Normant,Y., Omnes,M.H., Billard, R. (1998). Long term effects of the cryopreservation of turbot (*Psetta maxima*) spermatozoa. *Aquat. Living Resour* 11, 45-48.

Tice, R.R., Agurell, E., Anderson, D., Burlinson, B., Hartmann, A., Kobayashi, H., Miyamae, Y., Rojas, E., Ryu, J.C, Sasaki, Y.F.(2008). Single cell gel/comet assay: guidelines for in vitro and in vivo genetic toxicology testing. *Environ Mol Mutagen* 35, 206-221.

Zilli, L., Schiavone, R., Zonno,V., Storelli,C., Vilella, S.(2003). Evaluation of DNA damage in *Dicentrarchuslabrax* sperm following cryopreservation.*Cryobiology*47,227-235.

FULL TEXT SUBMISSIONS-2

NUTRITION AND GENDER EFFECT ON BODY COMPOSITION OF RAINBOW TROUT (*ONCORHYNCHUS MYKISS*)

MUSTAFA ÖZ*[a]

[a]Aksaray University, Faculty Of Veterinary Medicine, Aksaray, Turkey

ABSTRACT

In this study, body composition was compared between farmed female, farmed male, wild female and wild male rainbow trouts; the latter escaped from farms to nature and fed natural food. The total crude protein, lipid, ash and moisture of fish meat were determined in analyses. It was found that there were big differences between body composition of cultured rainbow trout and wild rainbow trout and their male and female. While in cultured female trouts; crude protein, crude ash moisture and lipid ratios were found respectively as 19.41%, 1.78%, 73.62% and 3.73%; in cultured male trouts crude protein, crude ash moisture and lipid ratios were found respectively as 18.73%, 1.52%, 75.23% and 3.36% in wild female trouts; crude protein, crude ash moisture and lipid ratios were found respectively as 19.65%, 1.61%, 73.83% and 2.97% in wild male trouts; 19.11%, 1.39%, 75.09% and 2.53%.

In the result of this research; it was found that crude protein and lipid content of female rainbow trout were higher; but, moisture content was lower. In addition, it was determined that the body composition of rainbow trout varies according to sex and habitat.

Keywords: Wild Rainbow Trout, Farmed Rainbow Trout, Body Composition

*Corresponding author:

Dr. Mustafa ÖZ

Aksaray University,Faculty of Veterinary Medicine, Department of Fisheries and Diseases, Aksaray, Turkey

Tel: (90) 541 459 8027; Fax: (90) 382 288 29 48

E-mail: ozmustafa@aksaray.edu.tr

INTRODUCTION

Rainbow trout is native to the Pacific drainages of North America, ranging from Alaska to Mexico. Since 1874 it has been introduced to waters on all continents except Antarctica, for recreational angling and aquaculture purposes. Production greatly expanding in the 1950s as pelleted feeds were developed. Trout fisheries are maintained, or culture practised, in the upland catchments of many tropical and sub-tropical countries of Asia, East Africa and South America (FAO, 2016). The rainbow trout (*Onchorhychus mykiss*) has been cultured since the early 1970s and Turkey has become one of the top trout producing countries in Europe with an annual production. On the other hand, it is also widely used as a farmed fish in many countries because of its rapid growth and high value as a food. It is economically important in the U.S.A., Japan, Europe, the Russian Federation and Canada (Yasmin et al. 2004).

Rainbow trout, part of the Salmonidae family (*Oncorhynchus mykiss*), is a commercially significant species consumed widely in Europe (Çaklı et al., 2006). It is a species of fish with an exceptionally fast growth rate and high nutritional value, leading to widespread cultivation in a variety of countries.

Due to the rich nutritional content, fish is an important food source in both developed and developing countries. Fish oils contain essential fatty acids and poly unsaturated fatty acids (PUFA), which are important for human health. This is an increasing demand from consumers for healthy, high quality, natural and fresh fish products.

The composition of the diet determines, to a large extent, the fat content of fish. The higher the ratio between the metabolizable energy and protein in the diets, the higher the fat content in the tissue. Whole-body composition was also affected by season, water temperature and sexual maturation (Hepher, 1988).

Rainbow trout is one of the most commonly raised species in Turkey and around the world. Moreover, Turkey is one of the foremost trout producers of Europe. Rainbow trouts are being raised at almost every region of Turkey. Natural populations of trout which escape from farms to nature occur in these regions, It is important to investigate differences in proximate composition between wild and farmed fish due to variations in feeding conditions.

Thus, the aim of the study was to investigate compare body composition of male and female rainbow trout living under natural and cultural conditions.

MATERIALS AND METHODS

Fish and sampling

Wild *Oncorhynchus mykiss*(male and female), which escaped from fish farms to nature were caught from Körkün Brook, which is a mountain brook at 1300 meters in Pozanti, Adana, Turkey, on

june 2015. Farmed male and female *Oncorhynchus mykiss* were obtained from a local fish farm (Oz Alabalik fish breeding facility) that is built near Körkün Brook and uses waters of this brook. The oxygen content of the water was 10.89±0.28 mg/L with a pH value of 8.2±0.38 and temperature of 13±0.40 ºC. Fourty wild (20 male- 20 female) and Fourty (20 male- 20 female) farmed fish (average weight 350 g) were used for proximate analyses. Triplicate samples for each fish were analyzed for body composition and fatty acid profile. During the study, commercial trout feed obtained from a private company (Abalioglu, Denizli, Turkey) was used. The nutritional values of the trout feed used in this study as follows: Crude protein (42.00%), Lipid (22.00%), Crude cellulose (3.00%), Moisture (10.00%), Crude ash (12.00%) and Total energy (4350 kcal/kg).

Proximate analysis

The fish samples were analysed in triplicate for proximate composition: lipid content of rainbow trout by the Bligh &Dyer (1959) method, moisture and the ash content of fish by AOAC (1990) method, total crude protein by Kjeldhal method (AOAC, 1984).

RESULTS AND DISCUSSION

Table 1 show the ratio of body composition of farmed female, male rainbow trout and wild female and male rainbow trout, respectively. Cultured female trouts; crude protein, crude ash moisture and lipid ratios were found respectively as 19.41%, 1.78%, 73.62% and 3.73%; in cultured male trouts crude protein, crude ash moisture and lipid ratios were found respectively as 18.73%, 1.52%, 75.23% and 3.36% in wild female trouts; crude protein, crude ash moisture and lipid ratios were found respectively as 19.65%, 1.61%, 73.83% and 2.97% in wild male trouts; 19.11%, 1.39%, 75.09% and 2.53%.

The differences in the body compositions of wild and farmed rainbow trout were in significant ($p< 0.05$). The comparison of body composition of each group was given in Fig. 1.Korkmaz and Kırkagaç (2008) also reported the ratio of the crude protein, lipid, ash and moisture of rainbow trout as 20.33%, 4.1%, 1.22% and 74.18%, respectively. In the current study, slightly lower protein level for farmed trout was found. The body compositions of rainbow trout and other species vary depending on their genotipic features and habitats. Moreover, the nutrirional habits and diet influence these differences (Kiris & Dikel, 2002; Uysal, Caklı, & Celik, 2002; Sener & Yildiz, 2003; Yildiz, Sener, & Timur, 2006).

In the present study, the protein content of female rainbow trouts were found higher than male fish in both cultural and wild groups. Regarding rainbow trout, Tokur et al. (2006) reported the protein value as 22.96% and the lipid content as 2.71%. Furthermore, it has been reported that the

nutritional values vary according to the feeding regime, feed composition, living area, harvest season, sex, size and environmental factor (Weatherup &McCracken, 1999; Rasmussen, 2001; Özden &Erkan, 2008).

Korkmaz and Kırkagac (2008) reported raw protein, oil, raw cinder and moisture content of rainbow trout as 20.33%, 4.1%, 1.22% and 74.18%, respectively. Kus (2012) identified the protein, lipid, cinder and moisture values for rainbow trout as 19.94%, 6.45%, 1.21% and 72.26%, respectively. Dikel (1999) reported raw protein, lipid, raw cinder and dry matter content for freshwater rainbow trout as 19.11%±0.26, 0.96%±0.01, 1.60%±0.02, and 21.67%±0.10 respectively, and the raw protein, lipid, raw cinder and dry matter content for saltwater rainbow trout as 18.46%±0.41, 1.45%±0.017, 1.58%±0.005, 21.50%±0.21, respectively. As a result of our study, rainbow trout fed with black cumin oil supplements have higher raw protein, raw cinder, lipid and proportion of dry matter when compared to the results reported in the studies mentioned.

In our research, the moisture content of both natural and cultural rainbow trout were found higher. Alemu, *et al*.,reported, sex was found to have no significant (P > 0.05) influence in terms of the four proximate components (moisture, protein, fat and ash) measured in Nile Tilapia fillet collected from Lake Zeway (Alemu, et al., 2013). Different researchers have reported that, moisture content of male fish higher than female fish (Islam and Joadder, 2005; Cornelia, 2012; Bhavan *et al*., 2010; Nargis, 2006). As similar to present study, the moisture content of male Gilthead bream fish is higher than female (Wassef and Shehata, 1991). The lower moisture content in female Nile Tilapia can be attributed to muscles of female fish contain more organic materials and less water than male (Amer *et al*., 1991).

REFERENCES

Alemu, L. A., Melese, A. Y. & Gulelat, D. H. (2013). Effect of endogenous factors on proximate composition of nile tilapia (*Oreochromis Niloticus* L.) fillet from Lake Zeway. *American Journal of Research Communication*, 1(11): 405-410}www.usa-journals.com, ISSN: 2325-4076.

Amer, H.A., Sedik, M.F., Khalafalla, F.A. and Awad, H.A. (1991). Results of chemical analysis of prawn muscle as influenced by sex variations. *Die Nahrung*. 35:133-138.

AOAC.(1984). Official Methods of Analysis of the Association of the Official Analysis Chemists. Association of Official Analytical Chemists, (14th ed.), Washington, DC

AOAC. (1990). Official Methods of Analysis of the Association of the Official Analsis.

Bhavan, P.S., Radhakrishanan, S., Seenivasan, C., Shanthi, R., Poongodi, R. and Kannan, S. (2010). Proximate Composition and Profiles of Amino Acids and Fatty Acids in the Muscle of Adult Males and Females of Commercially Viable Prawn Species *Macrobrachium rosenbergii* Collected from Natural Culture Environments. *International Journal of Biology*.

Bligh, E.C. & Dyer, W.J. (1959). A rapid method of total lipid extraction and purification. *Canadian J. Biochem. Physiol.*, 37:913-917.

Cakli, S., Kilinc, B., Dincer, T. & Tolasa, S. (2006). Comparison of the shelf-lives of map and vacuum packaged hot smoked rainbow trout (Onchorhyncus mykiss). *Eur. Food Res. Technol.* 224:19–26.

Cornelia A.B. (2012). Investigation of the chemical composition and nutritional value of smoothhound shark (*Mustelus mustelus*) meat. Thesis presented in partial fulfillment of the requirements for the degree Master of Science in Food Science at the University of Stellenbosch. 2012.

Dikel, S. (1999). Comparative analysis of carcass composition and nutritive contents of rainbow trouts (Oncorhyncus mykiss) were producted in fresh and sea water. In Symposium of 10th National Sea Products, Adana/Turkey (pp. 97-111).

FAO. (2005-2016). Cultured Aquatic Species Information Programme.Oncorhynchus mykiss.Cultured Aquatic Species Information Programme. Text by Cowx, I.G. In:FAO Fisheries and Aquaculture Department [online]. Rome. Updated 15 June 2005.[Cited 31 March 2016].

Hepher, B. (1988). Nutrition of Pond Fishes. Cambridge University Press, Cambridge.

Huss, H.H. (1988). Fresh Fish: Quality and Quality Changes. FAO 128p.

Islam M.N. & M.A. Joadder.(2005). Seasonal variation of the proximate composition of freshwater Gobi, Glossogobius giurs (Hamilton) from the river padma.*Pakistan Journal of Biological Sciences*. 8(4): 532-536.

Kiris, G. A. & Dikel, S. (2002). Comparison of growth performance and carcass composition of rainbow trout (Oncorhynchus mykiss Walbaum, 1792) reared in fiberglass tanks and cages placed in a concrete pond. Ege University, *Journal of Fisheries and Aquatic Sciences.* 19, (3-4): 371–380.

Korkmaz, A.Ş. & Kirkağaç, M. (2008). Fillet Yield, Body Composition and Energy Content of Rainbow Trout (Oncorhynchus mykiss) Reared In Sea Net-Cages and Fresh Water Concrete Ponds , Ankara University, Faculty of Agriculture, *Journal of Agricultural Sciences,* 14 (4) 409-413.

Nargis, A. (2006). Seasonal Variation in the Chemical Composition of Body Flesh of Koi Fish *Anabas testudineus* (Bloch) (Anabantidae: Perciformes). *Bangladesh J. Sci. Ind. Res.* 41:219-226.

Sener E. & Yildiz M. (2003). Effect of the Different Oil on Growth Performance and Body Composition of Rainbow Trout (*Oncorhynchus mykiss W., 1792*) Juveniles.*Turkish Journal of Fisheries and Aquatic Sciences* 3: 111-116.

Uysal I., Cakli Ş. & Celik U. (2002). Biochemical compositions of the Abant Trout (*Salmo trutta abanticus T.,* 1954) a nd Rainbow Trout (Oncorhynchus mykiss W., 1792) were fed with extruded pellet diet in culture conditions. *Ege University Journal of Fisheries and Aquatic Sciences*, *19*(3-4):447 – 454.

Wassef, E.A. & Shehata, M.B. (1991). Biochemical composition of Gilthead bream *Sparaus aurata* L. from Lake Bardawil (Egypt). *J.K.A.U.Mar. Sci.* 2:111-122.

Yasmin, A., Takeuchi, T., Hirota, T. & Ishida, S. (2004). Effects of conjugated linolenic acid (*cis*-9, *trans*-11, *cis*-13-18:3) on growth performance and lipid composition of fingerling rainbow trout *Oncorhynchus mykiss*. *Fisheries Sci.70*, 1009–1018.

Yıldız M., Sener E. & Timur M. (2006). The effects of seasons and different feeds on fatty acid composition in fillets of farmed gilthead sea bream (*Sparus aurata* L.) and European Sea Bass (*Dicentrarchus labrax* L.) in Turkey. *Turkish Journal* of *Veterinary* and *Animal* Sciences, *30*:133-141.

Yıldız M., Sener E. & Timur M. (2006). The effects of seasons and different feeds on fatty acid composition in fillets of farmed gilthead sea bream (*Sparus aurata* L.) and European Sea Bass (*Dicentrarchus labrax* L.) in Turkey. Turkish Journal *of* Veterinary *and* Animal *Sciences*, *30*:133-141.

FULL TEXT SUBMISSIONS-3

PROFILE AND PREFERENCE COMPARISON OF SEAFOOD and MILK CONSUMERS UNDER THE CONSEPT OF HEALTHY FOOD

OSMAN İNANÇ GÜNEY[a], LEVENT SANGÜN[a]

[a]Çukurova University, Vocational School of Adana, Adana, Turkey

ABSTRACT

Today transitions in food consumption are causing many global public health concerns. The abandonment of traditional healthy habits and the emergence of new lifestyles associated with socio-economic changes pose important threats to the preservation and transmission of the healthy food consumption to future generations. The world's milk and seafood sectors are growing at an unprecedented rate and the driving force behind this enormous surge is a combination of population growth, rising incomes, urbanisation and healthy food consumption trend. Factors such as gender, age, ethnicity, education level, occupation, family size, the presence of children in the household and income affects consumption patterns. But also these socioeconomic and demographic structure of consumers changes rapidly. These changes, along with increased emphasis on health and nutrition, have altered dietary patterns. Knowledge of the influence of socioeconomic and demographic factors on nutrient consumption are important, especially in the design and practical implementation of nutrition outreach programs.

In this study, profiles of the consumers of two animal based foods, milk and seafood, were compared with the help of frequency tests and chi-square analyse methods. Thus, by determining the consumers socio-economic and demographic similarities and differences of this two products, general characteristics of the healthy food consumers are tried to disclose.

Keywords: Consumer Profile, Consumer Preferences, Seafood, Milk, Healthy Food

*Corresponding author:
OSMAN İNANÇ GÜNEY
Çukurova University, Vocational School of Adana, 01330, Çukurova, Adana, Turkey
iguney@cu.edu.tr

INTRODUCTION

Food consumption is likely one of the most personally involving activities of human behaviour, since food is typically consumed several times every day, it is associated with a multitude of decisions to be made (purchase, eating context, company etc.) and eating causes physiological and psychological effects.

As the spectrum of food products are enormous, new food products constantly launched and consumer segments are becoming even more fragmented, there is a need for advanced understanding of consumer behaviour in relation to food (Paasovaara & Luomala,2009).

Food consumptions evolve over time, being influenced by many factors and complex interactions. Income, prices, individual preferences and beliefs, cultural traditions, as well as geographical, environmental, social and economic factors all interact in a complex manner to shape dietary consumption patterns (WHO, 2003).

Transitions in food consumption causing global public health concern because patterns of food consumption are a major modifiable risk factor for three of the most common types of chronic non-communicable diseases: cardiovascular disease, diabetes, and some types of cancer. Six risk factors (childhood underweight, suboptimal breastfeeding, vitamin A deficiency, zinc deficiency, iron deficiency, Iodine deficiency) related to nutrition (including high blood pressure, high blood glucose, overweight, and obesity) account for 19% of deaths worldwide every year (Lock, 2010).

The abandonment of traditional healthy food consumption habits and the emergence of new lifestyle associated with socio-economic changes pose important threats to the preservation and transmission of the healthy food consumption to future generations (Mediterranean food consumption patterns, FAO). Besides, as a result of the developments on education and communication situations in recent years' increasing interest has started to emerge on healthy food sector. Global sales of healthy food products, in fact, are estimated to reach $1 billion by 2017, according to Euromonitor (Hudson, 2012)

Food choice vastly different between individuals, situations and product classes, it can be described as a complex phenomenon. It has been acknowledged that food choice is controlled by a very large number of variables; food choice is an outcome of interactions between the consumer (biological, physiological and psychological factors), product (e.g. food flavour and package) and environment (e.g. time, physical surroundings, social and cultural factors) (Rozin, 2007).

Food choice is also a complex function of sensory (taste, odour, texture) and non-sensory factors (attitudes, health, price, ethical concern, personal values, social influence, availability, perceived risk and convenience) (Honkanen, 2005). Thus income is not the only factor affecting the extent and nature of food purchases. Social, cultural and family dynamics all exert an influence on the contents of a given household's shopping basket (Dubois & Farmer, 2015).

While the health fads and trends have come and gone this time the category appears to have serious stamina. Consider Nielsen's 2015 Global Health & Wellness Survey that polled over 30,000 individuals online and suggests consumer mind set about healthy foods has shifted and they are ready to pay more for products that claim to boost health and weight loss. According to this survey some 88% of those polled are willing to pay more for healthier foods (Gagliardi, 2015).

Increased interest in nutrition and health has heightened the need for a more complete understanding of nutrient consumption patterns. Analysis of nutrient consumption provides information for a number of critical purposes, including the assessment of dietary status and development of nutrition, education messages and policies (Nayga, 1994)

In line with these developments, recent years, there has been an increasing pressure on the milk and fisheries sector to meet the growing demand for high-value animal protein. The world's livestock and fisheries sector is growing at an unprecedented rate and the driving force behind this enormous surge is a combination of population growth, rising incomes and urbanization. For the large majority of people in the world, particularly in developing countries, livestock and fisheries products remain a desired food for nutritional value and taste. Excessive consumption of animal products in some countries and social classes can, however, lead to excessive intakes of fat (WHO, 2003).

Dairy and seafood are nutrient-rich food source which are widely available and their consumption recommended due to several nutritional benefits. In fact, these products are a good source of high quality protein, calcium, low in saturated fat, and rich in many micronutrients (like selenium and some vitamins). They are also a good source of long chain polyunsaturated omega-3, particularly eicosapentaenoic (EPA) and docosahexaenoic (DHA) fatty acids. So, the high nutritional quality of milk and seafood products makes them an essential component of a healthy diet. (Cardoso *et al*., 2013).

Attributes that may influence the households' dairy products and seafood purchase are also can identified as sensory properties, nutritional value, health related aspects, price/value for money, convenience, availability and seasonality, country of origin, obtaining method (wild or farmed, free range or barn system) and product forms (fresh, frozen and others). Also other factors such as gender, age, ethnicity, education level, occupation, family size, presence of children in the household, previous experience with fish, and total income in fish selection and consumption. (Claret *et al.,* 2012).

The relationship between certain socio-demographic factors and the consumption of a certain nutrient can be evaluated, and knowledge of these relationships can be utilized to develop nutrition education programs that focus on certain groups of individuals that consume unacceptable levels of certain nutrient (Nayga, 1994).

In this study, certain socio-demographic factors and consumption motivations for two different healthy foods, dairy products and seafood was aimed to identify and compare. Thus, common and different aspects of the consumer profiles and consumption motivations of these two product groups were presented.

MATERYAL and METHOD

This study is based on two consumer's surveys for two different but related (both complementary and substitute) products, dairy and seafood consumption. These two surveys were performed on May and June 2016 around the shopping malls and food retailers in the downtown of Adana and Mersin cities, which are located in the South east part of Turkey in Çukurova region. Within the research, 407 responders for seafood and 518 responders for dairy products participated to these two consumer surveys. The research first covers the frequency tables for demographic structures of the responders which were compared.

Besides, to determine the factors which were effective in order to consume milk and seafood products were analysed with qui square test. All the data were analysed into the SPSS 2.1 programme.

RESULTS AND DISCUSSIONS

The frequency percentages of socio-demographic structures of 407 seafood and 518 dairy products survey participant were given in Table 1.

Table 1. Frequency table for the participants to survey

Seafood consumers				Milk and milk products consumers		
Gender						
	Frequency	Percent			Frequency	Percent
Male	249	61,2		Male	279	53,9
Female	158	38,8		Female	239	46,1
Total	407	100,0		Total	518	100,0
Age				**Age**		
25<	213	52,3		24<	82	15,8
25-34	99	24,3		25-34	102	19,7
35-44	56	13,8		35-44	126	24,3
45-54	28	6,9		45-54	141	**27,2**
54>	11	2,7		54>	67	12,9
Total	407	100,0		Total	518	100,0
Profession						
Worker	49	12,0		Worker	32	6,2
Officer	25	6,1		Officer	23	4,4
Artisan	32	7,9		Artisan	52	10,0
Self-employment	56	13,8		Self-employment	152	29,3

Private sector	77	18,9		Private sector	30	5,8
Student	51	12,5		Student	45	8,7
Housewife	64	15,7		Housewife	155	29,9
Unemployed	53	13,0		Unemployed	29	5,6
Total	407	100,0		Total	518	100,0
Education						
Literate	2	,5		Literate	14	2,7
Elementary-Secondary School	64	15,7		Elementary-Secondary School	295	56,9
High School	221	**54,3**		High School	160	30,9
University undergraduate	115	28,3		University undergraduate	46	8,9
Graduate	5	1,2		Graduate	3	,6
Total	407	100,0		Total	518	100,0
Income						
Yok	136	33,4		Yok	8	1,5
1001<	40	9,8		1001<	66	12,7
1001-2000	163	40,0		1001-2000	281	54,2
2000-2999	43	10,6		2001-3000	107	20,7
3001-4000	11	2,7		3001-4000	41	7,9
4000>	14	3,4		4000>	15	2,9
Total	407	100,0		Total	518	100,0
Number of Households						
1	12	2,3		1	12	2,3
2-3	98	18,9		2-3	98	18,9
4-5	224	43,2		4-5	224	43,2
5>	184	35,5		5>	184	35,5
Total	518	100,0		Total	518	100,0

The results of the analyse of consumer profile survey indicated that, for seafood consumption gender distribution demonstrates more disparity than dairy products consumers and seafood consumers are composed of more male than female When age ranges of the consumers were studied, it was found that seafood consumers demonstrated irregular distribution and mainly composed of under 26 age (52,3%) as young consumers but dairy products consumers indicates more regular distribution and the consumers are mainly concentrated at the age 35-55 which are mid-age consumers. According to the professions distribution, seafood products consumers are mainly occupied with private sector. Housewife and self-employed are the other important consumer groups and officials are the least consumption performer of the seafood. For the dairy products consumers, they are mostly housewife and self-employed people.

Comparing the education levels of the two products consumers we can see that while seafood consumers mainlygraduates in high school and college, dairy products consumers mainly consist of elementary-middle school and high school education. We can state that seafood consumers have higher education level than the dairy products consumers.

Comparing the income level of the two products consumers indicated similar wage situation as 1000-2000 TL per month, but in this case different from the dairy products consumers an

important amount of non-income consumer is presence for seafood which are generally students. Household individuals also demonstrated similarities between seafood consumers and milk and milk products consumers as more than 4 individual.

Table 2. Chi square analysis results and frequencies of factors effecting milk and its products consumption

	Taste		Health		Habit		Nutrition value		Prestige	
	f	Percent	f	Percent	f	Percent	f	Percent	f	Percent
1	-	-	1	0,2	16	3,1	-	-	42	8,1
2	1	0,2	1	0,2	19	3,7	4	0,8	43	8,3
3	10	1,9	12	2,3	84	16,2	14	2,7	105	20,3
4	207	40,0	115	22,2	143	27,6	129	24,9	159	30,7
5	300	57,9	389	75,1	256	49,4	371	71,6	169	32,6
Total	518	100,0	518	100,0	518	100,0	518	100,0	518	100,0
Chi-Square	508,641***		1071,691***		386,035***		675,004**		143,004***	
Df	3		4		4		3		4	

***:p<0,001

In table 2 the intensity of the factors effecting dairy consumption were analysed. According to the chi square test for the factors effecting dairy products consumption, there is a statistical significative differences between factors; taste, health, habit, nutritive value and prestige. The results of the effects of motivations for dairy products consumption shows that, nutritive value is the most effective factor on consumption and health factor fallows this. Taste is secondary factor for the consumption and prestige and habit factor effects the consumption in minimum level.

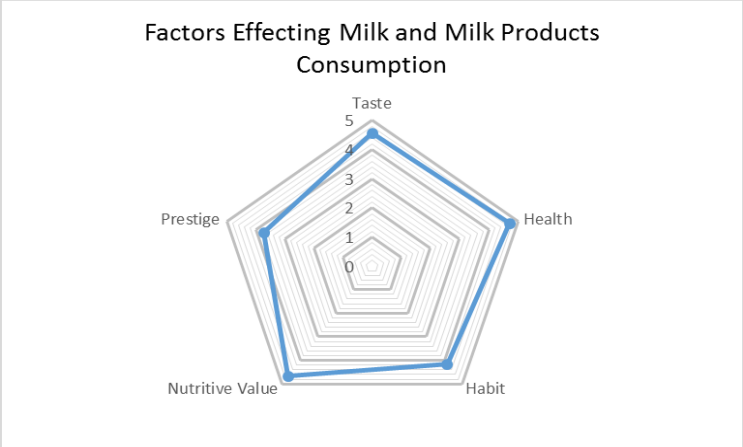

Figure 1. Radar Graphic for the factors effecting milk and milk products consumption

Table 3. Chi square analysis results and frequencies of factors effecting seafood consumption

	Taste		Health		Habit		Nutrition value		Prestige	
	f	Percent	f	Percent	f	Percent	f	Percent	f	Percent
1	30	8,6	7	2,0	29	8,4	5	1,4	70	20,2
2	9	2,6	4	1,2	23	6,6	1	,3	18	5,2
3	23	6,6	8	2,3	74	21,3	11	3,2	93	26,8

4	86	24,8	49	14,1	144	41,5	86	24,8	91	26,2
5	199	57,3	279	80,4	77	22,2	244	70,3	75	21,6
Total	347	100,0	347	100,0	347	100,0	347	100,0	347	100,0
Chi-Square	351,948***		811,084***		135,867***		619,556***		53,274***	
Df	4		4		4		4		4	

***:p<0,001

In table 3 the intensity of the factors effecting seafood consumption were analysed. According to chi square test for the factors seafood consumption, there is a statistical significative differences between factors; taste, health, habit, nutrition value and prestige. The results of the effects of motivations for seafood consumption shows that, nutrition value again is the most effective factor on consumption and health fallow this. Taste is again the secondary factor for the consumption and prestige and habit factor effects the consumption in minimum level.

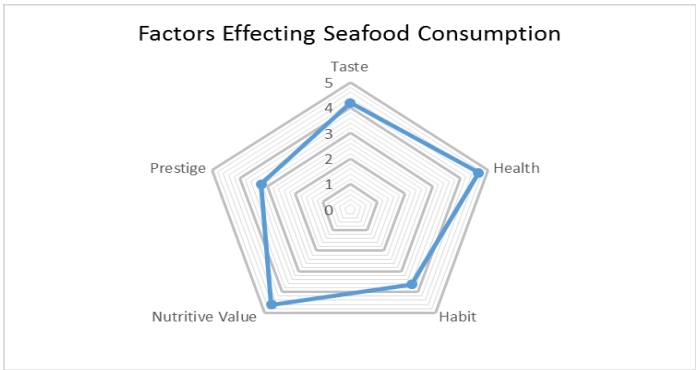

Figure 2. Radar Graphic for the factors effecting seafood consumption

CONCLUSIONS

Increased interest in nutrition and health has heightened the need for a more complete understanding of food consumption patterns. Rapid changes on the socioeconomic and demographic structure of consumers also affects this increase. These changes, along with increased emphasis on health and nutrition, have altered dietary patterns. Knowledge of the influence of socioeconomic and demographic factors on nutrient consumption are important, especially in the design and practical implementation of nutrition outreach programs. (Nayga, 1998).

While the abandonment of traditional food consumption habits and the emergence of new lifestyle pose important threats to the preservation and transmission of the healthy food consumption, in recent years' developments on education and communication opportunities effected the interest on healthy food sector positively.

Promoting healthy diets and lifestyles to reduce the global burden of non-communicable diseases requires a multi-sectoral approach involving the various relevant sectors in societies. The

agriculture and food sector figures prominently in this enterprise and must be given due importance in any consideration of the promotion of healthy diets for individuals and population groups.

When the profile and consumption behaviours of the consumers of two sample product groups, seafood and dairy, examined we can see both common and different points. From the point of socio-economic and demographic perspective, income levels and number of individuals in the household parameters shows similarities but age, education and professions demonstrates differences. Seafood consumers are younger and have higher level of education comparing with the dairy products consumers. Besides, while private sector employees consuming more seafood, consumes for dairy products are generally consist of self-employed people.

Result of the study shows that standard middle-income group families demonstrates tendency to consume seafood and milk and its products which can be categorized as healthy and nutrition rich food.

The study also investigated the intensities of the factors effects the consumption of seafood and dairy products. The results show that similar factors effect these two product group in similar in intensity. The most effective factors are nutrition value and healthy in case of consuming these products for both products and taste is the secondary factor. This results shows that many consumers are considering healthy factors rather than the taste while consuming foods. Investigating and promoting on health and nutrition issues are willing to be much more important in the near future. Similar studies (Allen & Goddard, 2012 and Krige *et al.,* 2012) on consumer behaviour for milk and milk products and seafood also found that health is one of the most important motivation for consumption.

REFERENCES

Cardoso, C., Lourenço, H., Costa, S., Gonçalves, S., Nunes, M.L. (2013). Survey into the seafood consumption preferences and patterns in the Portuguese population.Gender and regional variability, *Appetite*, Elsevier, 20–31.

Claret, A., Guerrero, L., Aguirre, E., Rincón, L., Hernández, D., Martínez, I., Peleteiro, J.B., Grau, A. Rodríguez-Dubois.L., Farmer, A., Girard, M., Burnier, D., Porcherie, M. (2015). Demographic and socio-economic factors related to food intake and adherence to nutritional recommendations in a cohort of pre-school children, Public Health Nutrition: Mediterranean food consumption patterns Diet, environment, society, economy and health, Food and agriculture organization of the United Nations International Centre for advanced Mediterranean agronomic studies Rome,14(6), 1096–1104.

Gagliardi,N. (2015). URL: http://www.forbes.com/sites/nancygagliardi/2015/02/18/consumers-want-healthy-foods-and-will-pay-more-for-them/#4781058d144f, Consumers Want Healthy Foods--And Will Pay More for Them, *Forbes*.

Honkanena, P., Olsenb, S.O., Verplankenc, B. (2005). Intention to consume seafood the importance of habit, *Appetite*, Elsevier, 161–168.

Hudson, E. (2012).URL: http://blog.euromonitor.com/2012/11/health-and-wellness-the-trillion-dollar-industry-in-2017-key-research-highlights.html Euromonitor, International, Health and wellness the trillion-dollar industry in 2017: Key Research Highlights.

Krige, S.M., Mahomoodally, F.M., A.H. (2012). Subratty and D. Ramasawmy, Relationship between Socio-Demographic Factors and Eating Practices in a Multicultural Society, Food and Nutrition *Sciences*, 3, 286-295.

Lock, K., Smith, R.D., Dangour, A.D., Brown, M.K., Pigatto, G., Hawkes, C., Fisberg, R.M., Chalabi, Z. (2010). Agricultural, and economic effects of adoption of healthy diet recommendations, Chronic Diseases: Chronic Diseases and Development 2, *The Lancet*, 376 (9753), 1699–1709

Nayga, R.M. Jr. (1994). Effects of Socioeconomic and Demographic Factors on Consumption of Selected Food Nutrients, *Agricultural and Resource Economics Review*, 23(2), 171-182.

Paasovaara, R. & Luomala, H.T. (2009). Enticing the effects of consumer values on actual choices of food products by applying the value activation theory, *Asia Pacific Advances in Consumer Research*, 8, 202–207.

Rodríguez, C. (2012). Consumer preferences for sea fish using conjoint analysis: Exploratory study of the importance of country of origin, obtaining method, storage conditions and purchasing price, *Food Quality and Preference*, 259–266.

Rozin, P. (2007). 1. Food choice: An introduction. In L. J. Frewer & H. van Trijp (Eds.). Understanding consumers of food products 3-29.

Shannon, A. & Ellen, G. (2012). Consumer preferences for milk and yogurt attributes: How health beliefs and attitudes affect choices,, Annual Meeting, August 12-14, Seattle, Washington 125012, Agricultural and Applied Economics Association. 45.

WHO/FAO. (2003). Diet, Nutrition and The Prevention Of Chronic Diseases, *WHO Technical Report Series* 916, Report of a Joint WHO/FAO Expert Consultation, Geneva.

FULL TEXT SUBMISSIONS-4

WEIGHT ESTIMATION OF *UPENEUS MOLUCCENSIS* (BLEEKER,1855) BY USING DIFFERENT NORMALISATION METHODS AT ARTIFICIAL NEURAL NETWORKS

LEVENT SANGÜN*[a], PELİN KÖKÇÜ[b], OSMAN İNANÇ GÜNEY[a]

[a] Çukurova University, Adana Vocational Scholl, Adana, Turkey
[b] Çukurova University, Faculty Of Fisheries, Adana, Turkey

ABSTRACT

This study was conducted in Gulf of İskederun and total length (cm), standard length (cm) and weight measures of *U.moluccensis* species which were caught by bottom trawling method were used. By applying Min-max, D-Min-Max and Z-score normalisation methods to the obtained measurements a new data set were created and using back propagation algorithm with the artificial neural networks the weight of *U.moluccensis* was estimated. The performance of the prediction model which was created with different normalisation techniques were calculated by using Mean Absolute Error-MAE and Correlation Coefficient-R values. Study shows that, according to the correlation coefficient the valid results were calculated as, D-Min-Max (0.98), Min-Max (0.98), raw data (0.97) and Z-Score (0.96). due to the Mean Absolute Error-MAE values valid results were calculated as, D-Min-Max (0.0168), Min-Max (0.1588), raw data (0.5003) and Z-Score (0.6414).

Keywords: *Upeneus moluccensis,* Artificial Neural Networks, Normalisation Techniques, D-Min-Max, Min-Max and Z-Score

* Corresponding author :
LEVENT SANGÜN
Çukurova University, Adana Vocational School, Adana, Turkey
lsangun@cu.edu.tr

INTRODUCTION

In the population dynamics studies, estimation of growth parameter is very significant but during the estimation of these parameters generally it is working on single variable (weight-total length /fork length /Standart length etc.). When making estimates very wide data is using because no matter how much the number of samples, the data come closer to normal distribution and the error possibility reduces while making predictions about the data. As it is known, accuracy of the estimate is inversely proportional to the estimated error. So when the estimation error decreases, the accuracy of the model increases. Therefore, when comparing different forecasting models, the model with the smallest error value is selected as the best model (Asilkan & Irmak,2009). Artificial neural networks (ANN) is a frequently used estimation tool in recent years which is a subfield of artificial intelligence. It is a computer system which was developed to producing new knowledge by learning or generate talents automatically like exploring without any help (Öztemel, 2006). The reasons why ANN is preferred frequently are, the ability to solve complex problems, to learn the relationships between data, to create an effective alternative to conventional statistical techniques in solving difficult problems (Lek & Guegan,1999).

ANN method has many significant features like learning from data, making generalizations, working with unlimited variables. ANN method can be used frequently in many scientific areas thanks to these features. ANN could sustain linear or non-linear modelling without any preliminary information requirement between input and output variables (Ataseven, 2013).

Extremely big or small values could be observed among ANN inputs and outputs. These extreme values could cause the incorrect orientation of network while net inputs calculated (Öztemel, 2003). The network could be trained without the normalisation process. This situation shows that the data are in uniform distribution.

Even it is used a device for measurement while obtaining a data, because the units won't be the same, these data could not be used in the statistical analysis directly. Generally, first it is checked as the data demonstrates normal distribution or not at the classical statistic methods. If the data won't demonstrate normal distribution, normalization methods were used to closer to normal (Özdağoğlu, 2014).

The aim of this study is, to put forth which normalization technique demonstrates the best performance by analysing the effects of different normalization techniques to the performance of ANN.

MATERIAL AND METHOD

Material

The data belonging to the Upeneus moluccensis species which we used in this study were obtained in 2013 from Iskenderun Gulf. The data covers total length (cm), standard length (cm) and

weight (gr) measurements. *Upeneus moluccensis* as a lessepsiyen species, which were settled in Mediterranean through Suez Canal and took place quite important role for Mediterranean fishing. (İşmen, 2005; Gökoğlu & Balcı, 2010).

Method

Artifical Neural Network and Normalisation Methods

In ANN, certain pre-treatment uses to network inputs and outputs. These transactions make the education more efficient. With applying normalization transactions to the raw data, preparation of an appropriate data set for training of the network is provided. Not implementation of normalisation transaction to raw data could slow the operation of the network. In multilayer networks application of the normalization transactions effect network performance highly, because this process makes distribution of values in the data set regular. Since there are too many normalisation techniques in application Min-Max, D-Min-Max and Z-score techniques were used in this study.

Z-Score Method

In the data set presence of values under zero and values bigger than zero significates that distance between the data especially the extreme data would be more effective on results. With normalisation transaction of data, the entry of each parameter in the training set equally provided to contribute to the model of the estimation process. With Z-Score equation method, the distance between the data has eliminated and the extreme points in the data were reduced (Yüksek *et al*., 2007).

$$\chi' = \frac{\chi_i - \mu_i}{\sigma_i} \qquad 1$$

In the equation;

χ' = Normalised data

χ_i = Input value,

μ_i = Mean of the input set

σ_i = Standard deviation of the input set

Min-Max Normalization

Min-Max normalization normalize data linearly. While the minimum value to be received by a minimum data, maximum represents the highest value to be received by data

$$\chi' = \frac{\chi_i - \chi_{\min}}{\chi_{\max} - \chi_{\min}} \quad 2$$

In the equation;

χ' = Normalized data

χ_i =Input value

$\chi_{\min}$ =Minimum number in the input set

$\chi_{\max}$ =Maximum number in the input set (Yavuz & Deveci, 2012; Mustaffa & Yusof, 2011) .

D_Min-Max Normalization

By the help of the equation below all data were normalized between 0,1 and 0,9.

$$\chi' = 0,8 * \frac{\chi_i - \chi_{\min}}{\chi_{\max} - \chi_{\min}} + 0,1 \quad 3$$

In the equation;

χ' = Normalized data

χ_i = Input value

$\chi_{\min}$ = Minimum number in the input set

$\chi_{\max}$ = Maximum number in the input set göstermektedir (Yüksek, 2007; Yavuz & Deveci, 2012).

In this study, with implementation of different normalization techniques (Z-score, Min-Max, D_Min-Max) to the morphometric measurements (total length, standart length) of *U.moluccensis,* the body weights were estimated. Practically as data set, total length, standard length (input); as output value (output) weight were given. We used randomly 70% in training, 30% in testing of 80 *U.moluccensis.* For the application on ANN, Matlab R2013b programme were used.

In the network feed forward back propagation algorithm was used. As the training function the Trainlm function were used. In the equation, the learning function is learngdm (back propagation) and the activation function is Logsig and Purelin. Besides, multi layered network was used with 1-5 layer and iteration was studied between 300-800.

It was determined which normalization technique was given closer results with the real weight of*U.moluccensis* by comparing the results of different normalization techniques with the

estimated values of the model. To test the success and estimation accuracy of the Mean absolute error (MAE) and correlation coefficient (R) values were controlled.

RESULTS AND DISCUSSIONS

Results of the Artificial Neural Network Model

Mean, standard deviation, standard error and max-min values of total length and weight of the U.moluccensis which west used in the study was given in Table 1

Table1. Basic data analysis of physical values of U.moluccensis

	Total length	Standard length	Weight
N	80	80	80
Standard deviation	1.07	0.85	4.02
Mean	9.9	7.85	8.93
Standard error	0.12	0.09	0.44
Min	8.3	6.6	4.8
Max	14.8	11.8	31.07

Mean absolute error (MAE) and correlation coefficient (R) values of train, test and all other groups were given in Table 2.

Table2. Test Results of the Artificial Neural Networks Models

	MAE	Train R	Test R	All R
Raw data	0.5003	0.98	0.98	0.97
D_Min-Max	0.0168	0.98	0.98	0.98
Min-Max	0.1588	0.98	0.98	0.98
Z-Score	0.6414	0.96	0.97	0.97

MAE and R values were given in Table 2. We can use All values as relevant test result. When the mean absolute error results were investigated, through the normalization techniques, D_Min_Max and Min-Max methods were given highest results comparing with the Z-Score method.

CONCLUSIONS

In this study, data set of *U.moluccensis* obtained from different normalization techniques was trained by artificial neural networks and estimated body weight and estimated successes were compared. Performance output values were calculated the cumulative values differences between intended output value and value created by the network. By the help of these values it was

investigated how network close to the pattern of training set and the weights of the connections changes due to this. At the networks which uses feed forward back propagation algorithm typical performance function values of Mean Absolute Error (MAE) and R (Corelation Coefficient) were compared. Results of the study shows that, when we check the correlation coefficients D-Minmax and Min-max methods have higher estimation success (0,98) compared with the Z-Score method and raw data. When we look at the Estimation success rates we can sort the methods were sorted as D_Min-Max, Min-Max, raw data and Z-score.

REFERENCES

Asilkan, Ö.& Irmak, S. (2009) . İkinci El Otomobillerin Gelecekteki Fiyatlarının Yapay Sinir Agları İle Tahmin Edilmesi, *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 14(2), 375-391.

Ataseven, B. (2013). Yapay Sinir Ağları ile Öngörü Modellemesi. http://e dergi.marmara.edu.tr/maruoneri/article/view/1012000311,101-115

Balcı, B. A. & Gokoglu, M. (2010). Age, Growth and reproduction of Goldband Goatfish (Upeneus molucensis Bleeker(1855)) From the Gulf of Antalya (Turkey*), J. Of Animal and Veterinary Advances*, 9(5), 939-945.

İşmen, A. (2005). Age, Growth and Reproduction of the Goldband Goatfish, Upeneus moluccensis (Bleeker, 1855), in İskenderun Bay*, the Eastern Mediterranean, Turk J Zool*, 29, 301-309.

Lek, S. & Guegan, J., F. (1999) Artificial Neural Networks as a tool in ecological modelling an introduction*. Ecological Modelling,*17, 65–73.

Mustaffa, Z., & Yusof, Y. (2011). A Comparison of Normalization Techiques in Predicting Dengue Outbreak, *2010 International Conference on Business and Economics Research,*.1, 345-349p.

Özdağoğlu, A. (2014). The Effects of The Normalization Methods to Multi Criteria Decision Making Process Moora Method Review, *Ege Academic Review*, 14(2), 283-294.

Öztemel, E. (2003).Yapay Sinir Ağları, Papatya Yayınları.

Yüksek, A. G.; Bircan, H., Zontul M. & Kaynar, O. (2007). Sivas İlinde Yapay Sinir Ağları İle Hava Kalitesi Modelinin Oluşturulması Üzerine Bir Uygulama, *Cumhuriyet Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 8(1), 97-112.

Yavuz, S. & Deveci, M. (2012). The Effect Of Statıstıcal Normalızatıon Technıques On The Performance Of Artificial Neural Network*, Erciyes Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 40, 167-187.

FULL TEXT SUBMISSIONS-5

GENETIC DIVERSITY BETWEEN DIFFERENT HORSE POPULATIONS IN TURKEY

BANU YÜCEER ÖZKUL[a], NECMETTIN ÜNAL[a], METIN ERDOĞAN[b], FATMA TÜLİN ÖZBAŞER[c],CEYHAN ÖZBEYAZ[a]

[a] Ankara University, Faculty of Veterinary Medicine, Ankara, Turkey
[b] Afyon Kocatepe University, Faculty of Veterinary Medicine, Afyonkarahisar, Turkey
[c] Arı Farma Limited Company, Ankara, Turkey

ABSTRACT

This research has been conducted with the aim of detecting the genetic similarities/differences in terms of 17 microsatellite loci by using totally 676 samples taken from Domestic (n=439), Iranian (n=72), Afghan (n=34) and Bulgarian (n=27) pacing horses raised in different parts of Turkey and from Arabian (n=53) and Throughbred (n=51) horses recorded in the Board of High Commissioners, the Ministry of Food, Agriculture and Livestock. As a result of genetic analysis conducted, the average heterozygosity value was found the lowest in Throughbred horses (0.643), the highest in Afghan horses (0.728). Average FIS, FIT ve FST values are calculated respectively to be 0.082, 0.120 and 0.041. In UPGMA (Unpaired Group Method of Average), FCA (Factorial Correspondence Analysis) and Structure analysis showing the relations between populations, it is understood that from 6 different horse populations, Arabian and Throughbred horses constitute a separate group and the other horse populations pacing constitute a separate group. In terms of investigated microsatellite loci, it is concluded that the pacing horses have genetically similar structure.

Keywords: Genetic Differences, Horse, Microsatellite, Pacing, Turkey

Corresponding author:
BANU YÜCEER ÖZKUL
Ankara University, Faculty of Veterinary Medicine, Department of Animal Husbandry, Dışkapı, Ankara, Turkey.
yuceerbanu@hotmail

INTRODUCTION

In rugged terrain in Turkey, it is continued to use horses in urban transport in some areas and in light work and today horses are usually kept for supportive purposes and especially for the purpose of racing. Since horse racing is quite popular in Turkey recently, Arabian and Throughbred horse raising has developed very much and it has become a big sector. Besides this, even in a few numbers, sport horses, ponies etc are kept in Turkey. Except for them, the domestic horse breeds found in Turkey and used in agriculture, transportation and other services for long years and localized in some certain places has faced with the danger of extinction. Besides, horse breeding is performed in many regions of Turkey for local pacing races and some of the domestic horses are tried to be lived (Özbeyaz, 2005; Özbeyaz et al, 2005).

Since pace is a walking type that is relax for the rider and does not exhaust rider, they used to be used in transportation before in Turkey, but in time the horses have begun to be used in pacing races in time (Arpacık, 1996; Özbeyaz, 2005). Pacing races in Turkey is conducted by taking permission from "Traditional Sport Branches Federation" (Karaca, 2005). There are many horse breeds having the ability to pace in the world. Pacing races in Turkey is performed with domestic and imported horses or with the horses brought to Turkey in some other ways and that has the ability to pace with the origin of Iran, Afghanistan and Bulgaria. While Domestic (Turkish), Iranian and Afghan horses are able to struggle in the same category, races in different category are organized for Bulgarian pacing horses.

In the description of the breeds and the detection of the genetic relationships among the populations, it is commonly benefited from morphological characters, blood proteins and DNA polymorphism (Özbeyaz et al, 1999). In order to protect the genetic structure and to provide the continuance of the populations (Achmann et al, 2004), microsatellites are commonly used to search the genetic relationships of horse populations and variation in and among the breeds (Luis et al, 2007). The power and usability of microsatellite markers have been informed in many genetic researches performed on the horses (Aberle et al, 2004; Achmann et al, 2004; Glowatzki-Mullis et al, 2005; Yang et al, 2002).

In this study, it is aimed to detect and compare the genetic structures of Domestic (Turkish), Iranian, Afghan and Bulgarian horses having the ability to pace and pedigreed Arabian and Throughbred horses raised in Turkey, in terms of 17 microsatellite loci.

MATERIALS AND METHODS

Materials

This research was conducted within the scope of the decision of ethics board dated 27/08/2010 and no. 2010-96-337 of Ankara University Animal Experiments Local Ethics Board. The animal material of the research is formed by totally 572 pacing horses some of which are domestic (n=439) and imported [Iranian (n=72), Afghan (n=34), Bulgarian (n=27)] bred by the local people in various regions of Turkey and 53 Arabian and 51 Throughbred horses recorded in the Board of High Commissioners, the Ministry of Food, Agriculture and Livestock. Blood and hair samples of the horses being able to pace are taken by going to the places where these conditions are organized. The samples belonging to Arabian and Throughbred horses are randomly selected from the list recorded in Board of High Commissioners. In this research, the animals used in the projects no 110 0 824 supported by TUBITAK were also used as materials.

Methods

In order to make DNA isolation from the hair samples, the section where the root parts of these samples were cut for 0.5 cm and 4 or 6 hair samples were left to incubation at 56^{o}C for a night with Proteinase-K. Following the incubation, 200 µl was taken from these samples and blood samples and DNA isolation was performed according to MagAttract DNA Blood Mini M48 Kit protocol by using Qiagen BioRobot M48 device (Anonymous, 2010).

Following DNA isolation, related samples were subjected to PCR process by using "Applied Biosystems GeneAmp PCR System 9700" thermal cycler with ABI StockMarks 17-plex Equine Genotyping Kits. Then, formamide and 500LIZ Size Standard was added and denaturation was conducted. DNA samples denaturized were analyzed in terms of 17 loci as VHL20, HTG4, AHT4, HMS7, HTG6, AHT5, HMS6, ASB23, ASB2, HTG10, HTG7, HMS3, HMS2, ASB17, LEX3, HMS1 and CA425 by using Applied Biosystems ABI 3130" Genetic Analyzer.

In the detection of genotypes of the samples in terms of microsatellite loci "StockMarks® for Horses Equine 17-plex Genotyping Kit 17" polymorphic microsatellite primer that is primarily recommended was used.

Total allele number,allele frequencies, observed heterozygosities (Ho), expected heterozygosities (H_E), the F-statistics, Factorial Correspondence Analysis - FCA and drawing of phylogenetic trees that are the basic parameters in genetic analysis were calculated by using GENETIX 4.0 (Belkhir et al, 1996), FSTAT (Goudet, 1995), TFPGA (Miller, 1998) and GenAlEx6 (Peakall & Smouse, 2006) package programs. "Structure Analysis" of the populations it is stressed on, was conducted by using Structure 2.3.2 (Pritchard et al, 2000) package program.

RESULTS AND DISCUSSIONS

With this study, genetic structures of Arabian and Throughbred horses and Domestic and imported (Iranian, Afghan and Bulgarian) pacing horses and genetic similarities/differences between them were revealed.

Allele Counts And Heterozygosity Values

Allele counts in horse populations studied, heterozygosity indexes (H_e and H_o), mean heterozygosity values and standard errors are given in Table 1. In the microsatellite loci used in this study, mean number of alleles varied between 2 and 19 and the most alleles were determined to be in ASB17 locus. Mean heterozygosity value was found lowest in the Throughbred horse population (0.643), the highest was found in the Afghan horse population (0.728).

According to the loci of each genotype, whether it is on Hardy-Weinberg equilibrium or not was controlled with Chi-squaretest. According to loci, Chi-squarevalues are given in Table 2. In Domestic horse population having the ability to pace, it is seen that the loci other than five loci (AHT4, AHT5, HMS6, HTG10, HMS1) are not on the Hardy-Weinberg equilibrium. In other populations, except two or three loci, Hardy-Weinberg equilibrium is not lost.

F-Statistics And Gene Migration

F_{IT} (F), F_{ST} (θ) and F_{IS} (f) values are given in Table 3 separately for each locus and as mean of all loci. F_{IT} values were calculated to be 12%, F_{IS} values to be 8.2% and F_{ST} values 4.1%.

F_{ST} estimations and gene migration (log (Nm)) between the populations are given in Table 4. The most difference between population pairs was found between Arabian and Throughbred horse populations (0.1468), the lowest difference was found between Domestic and Afghan horse populations (-0.0001). As logarithmic, the most gene migration was detected between Iranian and Afghan populations (2.34), and the lowest was detected between Arabian and Throughbred populations (0.16). No gene migration was shaped between Domestic and Afghan genotypes.

Genetic Distances (D) And Clustering Analysis

Genetic Distances (D) And Dendograms

Genetic distance values between the horse populations was calculated according to Nei (1978) and it is given in Table 5. When Table 5 is examined, it is seen that Domestic, Iranian and Afghan horse populations are seen to be genetically closer to each other compared to the other populations. The lowest genetic distance value was found between Domestic and Afghan horse populations (0.002). Genetically, the farthest ones are Arabian and Throughbred horse populations and genetic distance value was calculated to be 0.434. When the genetic relationship dendogram (UPGMA) between horses according to the populations is examined (Figure 1), Domestic, Afghan and Iranian origin pacing horse populations have similar genetic structure and these populations are seen to form a cluster. Then, respectively Bulgarian, Arabian and Throughbred horse populations forming independent clusters are included to this cluster.

Factorial Correspondence Analysis (Fca)

In order to reveal the difference or similarity relationships between the individuals and genotypes, factorial correspondence analysis (FCA) that is a clustering analysis conducted on three-dimensional plain was applied and three dimensional graphs (3D-FCA) belonging to this is given in Figure 2. As it is seen in the figure, the result of FCA is understood to be formed by 3 different groups or cluster. It is seen that Arabian and Throughbred horse populations are at different ends and the other horse populations are at the center. So, almost all Domestic, Iranian, Afghan and Bulgarian origin horses are included to central cluster.

Structure Analysis

Structure analysis results in which the relationships of six different populations each other are given in Figure 3. In structure analysis; it is benefited from the level of genetic differentiation among six genotypes with variable K value. The most appropriate K value for the data set was calculated according to Evanno et al (2005) and this value was found to be six. All horse population in K=2, is separated into two clusters (Domestic, Iranian, Afghan and Bulgarian horses form a cluster and Arabian and Throughbred horses form another cluster), in K=3 Arabian and Throughbred horses are separated into two different clusters and the total cluster number raised to three. In each increase in K value, similar cluster number of K=3 was obtained. These results show that there are three different horse populations formed by Arabian, Throughbred and other populations (Domestic, Iranian, Afghan and Bulgarian horses).

DISCUSSION AND CONCLUSION

In terms of allele diversity in microsatellite loci used in this study, it appears that domestic horse populations have a richer structure. While the total number of allele is 194 in domestic horses, it is 147, 141, 113, 88 and 85 in Iranian, Afghan, Bulgarian, Arabian and Throughbred horses, respectively. In terms of allele diversity, it is seen that all pacing horse populations are richer. This situation may result from big sample size of the population, not being applied of the selection, not making inbreeding or being exposed to more genes immigration compared to the other populations. In domestic genotype, it was detected that 12 loci do not comply with the equality of Hardy-Weinberg, and in the others 2 or 3 loci do not comply with the equality. It is seen that this situation is random and being more of the animal population in domestic genotype may play a role in this inequality.

In this study, the mean heterozygosity indexes, Arabian and Throughbred horse populations has been lower than in other populations. In this case, it is thought that the horses in the population may be relatives, the selection is implemented, and they are grown more closed compared to the other populations. Arabian and Throughbred horses are known as purebred and registered breeding

is done. Therefore, the increase in being homozygosity in purebreds is an expected situation. As a reason of being higher of heterozygosity in other populations, it is thought that the populations can be thought to be in heterogeneous structures in terms of examined loci, close breeding would be applied less and in sampling the unrelated individuals are selected successfully.

F_{IT} value as an indicator of heterozygote deficiency and inbreeding coefficient of a population formed by sub-populations was estimated to be 12%. F_{IT} is a measure of the average deviation from Hardy-Weinberg proportions of genotype frequencies observed in the population in terms of loci on which it is studied and it indicates that all populations consist of homozygote at the level of approximately 12% in terms of the studied loci. Therefore, in the evaluation of all genotypes together, that heterozygote are more than homozygote indicates that inbreeding is less and mating may be random. Inbreeding coefficient of analyzed populations and F_{IS} value that is an indicator of mean heterozygote deficiency occurs for each population suggest that the relationship between the horses in different populations is at the level of 8.2%; that pure breeding and selection are not performed in sub-populations and mating may be random. F_{ST} value that is the indicator of genetic differentiation among the breeds is very small (4.1%) indicate that the genetic differentiation in sub-populations forming this population is very low. On the other hand, on the examination of F_{ST} values on Table 4, it is seen that the highest value is 14.68% among Arabian and Throughbred horses and this is followed by the genetic differences of Throughbred and Arabians with Bulgarians (at 10% levels), and it is seen that the difference between Throughbred, Arabian and Bulgarian horses with Domestic, Iranian and Afghan horses varies from 4.65 to 8.12%. It is understood that the genetic differentiation between Domestic, Iranian and Afghan horses is low to non-existent. This situation explains that the pacing horse populations with Domestic, Iranian and Afghan origin are genetically very close to each other.

When gene migration among population pairs is examined, that the most gene migration logarithmically occurs between Iranian with Afghan and Domestic with Iranian pacing horse populations suggests that breeding horse exchanges between them occurs more compared to the other populations. That the genetic difference between Domestic and Afghan horse populations is minimal and the gene migration is zero suggest that these populations may have the populations in similar genetic structure or same common ancestry or the same common in the structure of these populations however it is suggested that the possible mating between these two populations is restricted geographically or due to the reason of the choice of breeders.

The genetic relationships of six different genotypes examined in this research in terms of 17 microsatellite loci is indicated in Figure 1, 2 and 3. In dendogram drawn according to genetic distance values, it was detected that the horses with the origin of Domestic, Iranian and Afghan are very similar to each other and they are included nearly in the same cluster. Therefore, that these

three genotypes may be close relatives or they may originate from the same origin can be said. Pacing horses with Bulgarian origin are closer to these three genotypes genetically, but it is understood that Arabian and Throughbred horses form completely separate clusters.

On the other hand, when the graphs belonging to Factorial Correspondence and Structure Analysis are examined, all horses forming the material are seen to form three clusters and to be separated from each other clearly. Pacing horses with different origin are included in a cluster. Throughbred and Arabian horses also form a separate cluster and they are placed at different ends. In terms of examined loci, that Throughbred, Arabian and pacing horses have genetically different structure is resulted from different breeding purposes even if they are grown in different and the same geographies. Throughbred and Arabian horses are purebred and controlled breeding horses, therefore it is not expected any mixture in their genetic structures. On the other hand, that all pacing horses with different origins are included in the same cluster is found to be extremely interesting. Of them, that the ones with Domestic, Afghan and Iranian origin resemble each other can be accepted as normal in terms of both body structure and the geographical regions where they are bred. However, considering that the horses with Bulgarian origin are quite portly and their pace styles are more different, while it is expected to be genetically different, the origins and ancestors of pacing horses may be similar as a result of being in the same cluster with the other pacing horses. Besides this, in FCA analysis graph, in the cluster including pacing horses, almost all of Bulgarian horses are located as a separate group on the cluster is seen.

As a main result of this study, it can be said that the horses pacing have genetic structure completely different from Arabian and Throughbred ones and they are similar among themselves. However in order to say that pacing horses have the same origin, it is not true to decide only according to the microsatellite locus. That is to say, the pacing horses having different origins are included in the same cluster, however in order to reveal whether they come from the common ancestor, it is recommended to make mitochondrial DNA (mtDNA) d-loop analysis. And also, it is required to consider of morphological structure, pacing style and similar features.

ACKNOWLEDGEMENTS

Due to the supports for being carried out of the project, we thank pacing horse owners. This research has been supported within the content of the project no TOVAG 110 O 824 by the Scientific and Technological Research Council of Turkey (TUBITAK).

REFERENCES

Aberle, K.S., Hamann, H., Drögemüller, C., Distl. O. (2004). Genetic diversity in German draught horse breeds compared with a group of primitive, riding and wild horses by means of microsatellite DNA markers. Anim Genet, 35, 270-277.

Achmann, R., Curik, I., Dovc, P., Kavar, T., Bodo, I., Habe, F., Marti, E., Sölkner, J., Brem, G. (2004). Microsatellite diversity, population subdivision and gene flow in the Lipizzan horse. Anim Genet, 35, 285-292.

Anonymous.(2010).QIAamp® DNA Mini and Blood Mini Handbook. Third Edition, QIAGEN, Sample & Assay Technologies.

Arpacık, R. (1996). Horse Breeding. Sahin Press, Ankara.

Belkhir, K., Borsa, P., Chikhi, L., Goudet, J., Bonhomme, F. (1996).GENETIX 4.00 WindowsTM Software for Population Genetics, Laboratoire Genome, Populations, Intereactions. University of Montpellier, France.

Evanno, G., Regnaut, S., Goudet, J. (2005). Detecting the number of clusters of individuals using the software STRUCTURE: a simulation study. Mol Ecol, 14, 2611-2620.

Glowatzki-Mullis, M.L., Muntwyler, J., Pfister, W., Marti, E., Rieder, S., Poncet, P.A., Gaillard, C. (2005). Genetic diversity among horse populations with a special focus on the Franches-Montagnes breed. Anim Genet, 37, 33-39.

Goudet, J. (1995). FSTAT (Version 1.2): A computer program to calculate *F*-statistics. J Hered, 86, 385-386.

Karaca, M. (2005). Ambling Races.National Horse Breeding Symposium, pp, 105-107, September 18-20, Ankara.

Luis, C., Juras, R., Oom, M.M., Cothran, E.G. (2007). Genetic diversity and relationships of Portuguese and other horse breeds based on protein and microsatellite loci variation. Anim Genet,38, 20-27.

Miller, M.P. (1998). Tools For Population Genetic Analysis (TFPGA) Version 1.3. A Windows program for the analysis of allozyme and molecular population genetic data.Department of Biological Sciences, Northern Arizona University.

Nei, M. (1978).Estimation of average heterozygosity and genetic distance from a small number of individuals. Genetics, 89, 583-590.

Ozbeyaz, C., Yıldız, M.A., Camdeviren, H. (1999). Genetic relationships among cattle breeds in Turkey. Lalahan Hay Araşt Enst Derg, 39, 17-32.

Ozbeyaz, C. (2005). Horse Breeding Course Notes. Ankara University, Faculty of Veterinary Medicine, Department of Animal Husbandry, Ankara.

Ozbeyaz, C., Erbas, S., Yakan, A. (2005). Turkish Native Horse Breeds and Their Preservation.National Horse Breeding Symposium, pp, 31-33, September 18-20, Ankara.

Peakall, R., Smouse, P.E. (2006). GenAlEx 6: Genetic analysis in Excel, Population genetic software for teaching and research. Mol Ecol Notes,6, 288-295.

Pritchard, J.K., Stephens, M., Donnelly, P. (2000). Inference of population structure using multilocus genotype data.Genetics,155, 945-959.

Yang, Y.H., Kim, K.I., Cothran, E.G., Flannery, A.R. (2002). Genetic Diversity of Cheju Horses (Equus caballus) Determined by Using Mitochondrial DNA D-loop Polymorphism. Biochem Genet,40, 175-186.

FULL TEXT SUBMISSIONS-6
INVESTIGATION OF SOME REPRODUCTIVE CHARACTERISTICS AND PROGESTERONE LEVELS OF AKKARAMAN SHEEP*

AFŞİN KOCAKAYA[a], CEYHAN ÖZBEYAZ[a]

[a]Ankara University, Faculty Of Veterinary Medicine, Department Of Animal Science, Ankara, Turkey

ABSTRACT

The purposes of this study were to detect the oestrus cycle and gestation period, and to investigate the progesterone levels in circulating blood which were not detected naturally before in Akkaraman sheep. Akkaraman is a native breed in Turkey. It is raised in central Anatolia, where steppe conditions prevail. The data were collected from 31 Akkaraman ewe during 2012-2013. The mean periods of the oestrus cycle and gestation were detected as 15.29 ± 0.26 and 150.24 ± 0.27 days, respectively. In the test days between the first and second oestrus in the mating season the mean values of progesterone levels were between 3.24 - 11.55 ng/ml and the corresponding values of progesterone at the anoestrus period changed 0.20 – 10.20 ng/ml. In conclusion, the Akkaraman breed had shorter (approximately 2 days) oestrus cycle period and similar pregnancy period compared to the other breeds. The mean levels and the differences between minimum and maximum values of the progesterone levels were similar to prolific breeds. However, this study results showed that the Akkaraman breed could be utilized as a prolific breed.

Keywords: Akkaraman, Gestation Period, Oestrus Cycle, Progesterone

* This study is a part of corresponding author's thesis.

Corresponding author:

AFŞİN KOCAKAYA
Ankara University, Faculty Of Veterinary Medicine, Department Of Animal Science, Dışkapı, Ankara, Turkey
akocakaya@ankara.edu.tr

INTRODUCTION

Sheep breeding is an important production area and very common in many countries which have wide pastures and arid climate conditions all over the world. With the advantage of specific features of sheep, sheep breeding is very profitable in areas which have low quality pastures. Sheep have a suitable structure and capability to make the best gain in such kind of pastures (Akçapınar, 2000).

For a successful breeding, sheep must have a high level of reproductive traits. Reproductive traits are influenced by many factors. These factors; determine the right time of oestrus, planning of mating and birth time, determination of the flushing time etc. and they are all named as herd management practises (Ünal et al., 2006).

Sheep generally show oestrus and mate at a certain time period ofyear. In other words, oestrus, mating, gestation and birth occur at a certain time period of the year. On the other hand, there were some sheep breeds which show oestrus whole year round. However, the seasonal breeding activity shows a wide variation based on breed and geographical location of the region they are breed.Whether sheep show oestrus is greatly related with the length of a day. Sheep oestrus show beginswhen the length of day decreases. Sheep shows oestrus at fall in the northern hemisphere. Sheep which mate in the first oestrus but not conceive, can be mated at the second oestrus (Akçapınar, 2000). At mating season the workload increases in enterprises which use hand service mating system. Best way to manage this situation is havingknowledge about distribution of heat in the mating season and births in the parturition periodfor making a best work plan (Ünal et al., 2006).

Progesterone hormone which has steroid structure and released from corpus luteum (CL)in ovaries, controls the ovulation rate and important endocrine events of oestrus cycle (Ası, 1999; Goodman & Inskeep, 2015).

The amount of the progesterone is undetectable in the earlier periods of oestrus cycle, but it will increase to the highest level slowly with the increase of luteal tissue volume at 2^{nd} to 8^{th} days. Progesterone levels are stable at the days between 8^{th} and 14^{th}. Progesterone levels dramatically decreases to the undetectable amounts in the 1^{st} and 2^{nd} dayright after the 14^{th} day of cycle. This pattern of progesterone is the same among breeds,but the amount of progesterone varies according to breeds (Goodman &Inskeep, 2015).

The objectives of this study were to detect the oestrus cycle and gestation period, and to investigate the progesterone levels in circulating blood which were not detected naturally before in Akkaraman sheep.

MATERIALS AND METHODS

This study was approved by animal experiments local ethics committee (date is 11/04/2012and the number is 2012-8-87).

This study was carried out in Gözlü state Farm in Konya (38° 29′ N and 32° 27′ E)in 2012 and 2013 years.The animal materials of the research, 31 Akkaraman ewes in heat in different ages, were selected from elite flocks with using teaser rams (Ünal&Akçapınar, 1994). The research ewes were detected in three days (7-8-9 September 2012) at the beginning of the mating season. The ewes were divided into 4 age (8 ewes,at the age of 2; 7 ewes,at the age of 3; 8 ewes,at the age of 4; and 8 ewes, at the age of 5) groups.All ewes weren't mated in the first oestrus to make them show the second oestrus. The ewes were monitored by rams twice a day after 12 days from the first oestrus and mated when in heat. The daily blood samples collection startedat the first oestrus and continued until 5 days after the second oestrus. The blood samples were collected two times again from same the ewes at the 4^{th} month of lactation, that is, in anoestrus period.

The blood samples were collected from jugular vein to Li-Heparin tubes (10ml) with vacutainer. Samples were centrifugedfor 10 minutesat 3000 rpm for serum separation. Separated serums were stored in cryo tubes at -20°C until they reached laboratory (Bartalewskiet al, 1998; Kaya et al, 2005; Kaya et al, 2008; Ben Salem et al, 2010). Serum samples that reached laboratory were stored at -86°C until analysis(Tworoger& Hankinson 2006).

The ewes were monitored by rams twice a day after 12 days from the first oestrus for the second oestrus time and the time between the 1^{st} and the 2^{nd} oestrus was calculated asoestrus cycle length. Birth of sheep was monitored and the days between conception and the birth calculated as gestation time (Ünal&Akçapınar, 1994; Ünal et al., 2006).

Progesterone levels from serum were determined by Enzyme-Linked Immunosorbent Assay(ELISA)(Sulu et al., 1988; Haliloğlu&Serperk, 2000; Kaya et al., 2005; Lequin, 2005; Ali et al., 2006).

The obtained data were compared by age groups. One-way ANOVA was used to analyse the data of oestrus cycle, gestation period and the progesterone levels.

RESULTS AND DISCUSSION

The oestrus cycle lengthwas calculated from the days between 1^{st} and 2^{nd} oestrus and the gestation period was calculated from the days between conception and the birth (Ünal et al., 2006). According to this, gestation period of three sheep were calculated longer than (167, 168 and 171 days) normal gestation period (144-152 days) that is reported before for sheep species (Akçapınar, 2000). So this three sheep werenot added to the calculation of gestation periods. Means and standard errors of oestrus cycle and gestation periods are reported in Table 1 and Table 2, respectively.

Table 1 Statistics of oestrus cycle of age groups

Age	*n*	$\overline{X} \pm S_{\overline{X}}$	Minimum	Maximum
2	8	15.00 ± 0.37	13.00	17.00
3	7	16.00 ± 0.61	13.00	18.00
4	8	15.38 ± 0.62	13.00	18.00
5	8	14.88 ± 0.47	13.00	17.00
General	31	15.29 ± 0.26	13.00	18.00
P		-		

-: Means among agegroups are not different (P>0.05)

The mean period for oestrus cycle detected 15.29 ± 0.26 (13-18) days and age had no effect on oestrus cycle length. This finding is approximately two days shorter than Akkaraman breed and its crossbreeds (Ünal et al., 2006) and also shorter than Bafra breed (Özarslan, 2014) reported before. This situation may be related to inadequate luteinisation or shorter lifespan of CL (Bartlewski et al., 2011). But this finding is between the oestrus cycle days (14-19 days) reported before for sheep (Akçapınar, 2000).

The mean period for gestation was detected 150.24 ± 0.27 (146-152) days. This finding is close to reports for Akkaraman breed (Akçapınar&Kadak, 1982 and Ünal et al., 2006) and similar to its crossbreeds (Ünal et al., 2006) reported formerly. But this finding is between the gestations periods (144-152 days) reported before for sheep (Akçapınar, 2000). Age had no effect on gestation period, this finding has a contrasting view toGüler (2007) which states that older animals had longer gestation periods. This contrast maybe because of the numbers of sheep at each group.

Table 2 Statistics of gestation period of age groups

Age	*n*	$\overline{X} \pm S_{\overline{X}}$	Minimum	Maximum
2	7	150.14 ± 0.45	148.00	152.00
3	7	150.85 ± 0.26	150.00	152.00
4	5	150.00 ± 0.54	148.00	151.00
5	6	149.83 ± 0.87	146.00	152.00
General	25	150.24 ± 0.27	146.00	152.00
P		-		

-: Means among age groups are not different (P>0.05)

The progesterone levels from ELISA was analysed by age groups for mating and anoestrus periods. Because of the variety on oestrus cycle length in each group we couldn't analyse progesterone patterns all cycle long for age groups. But, progesterone levels at last six day before oestrus (day 0) are reported at Table 3.Progesterone levels at the day before 0 varies between 1.38-4.47 ng/ml. And 2 aged sheep had minimum levels of progesterone. So, age had no significant effect on progesterone levels (P>0.05).

In the test days between the first and second oestrus, the mean progesterone levels were 3.24–11.55 ng/ml, all days between the 1st oestrus and the 2nd oestrus progesterone levels varies between 0.20-39.50 ng/ml and the corresponding values at the anoestrus period (4th month of lactation) of progesterone were changed 0.20–10.20 ng/ml. These progesterone levels are greater thanAkkaraman breed (Karagül et al., 1999) and the other non-prolific sheep breeds (Cunningham et al., 1975; Haliloğlu&Serpek, 2000; Ali et al., 2006; Coelho et al., 2006; Ali &Hayder 2008; Seekallu et al., 2010) and also similarly with prolific breeds (Sulu et al., 1988; Mitchell et al., 1999;andÖzarslan 2014)reported formerly.

Table 3 Progesterone levels of age groups at six days before oestrus

	- 6		- 5		- 4		- 3		- 2		- 1	
Age	n	$\overline{X} \pm S$	n	$\overline{X} \pm S$	n	$\overline{X} \pm S$	n	$\overline{X} \pm S$	n	$\overline{X} \pm S$	n	$\overline{X} \pm S$
2	8	7.61±2.	8	8.20±2.	8	6.67±1.	8	7.76±2.	8	1.88±0.	8	1.28±0.
3	6	10.55±4	5	10.34±3	7	12.95±3	6	8.88±2.	7	4.68±2.	7	4.47±3.
4	7	8.15±2.	7	13.21±3	8	16.76±4	8	12.26±3	8	9.76±3.	8	3.65±1.
5	8	9.60±2.	7	14.30±4	6	9.50±3.	8	15.53±4	8	7.51±3.	8	3.71±1.
Gene	2	8.90±1.	27	11.47±1	29	11.55±1	30	11.26±1	31	6.00±1.	31	3.24±0.
P		-		-		-		-		-		-

-: Means among age groups are not different (P>0.05)

Goodman & Inskeep (2015) reported that increases and decreases in progesterone hormone levels during oestrus cycle is not differ among sheep breeds but the amount of progesterone levels varies among breeds. So we thought the high amount of progesterone detected in this study is specific for Akkaraman breed.

Progesterone levels on this study (3.24-11.55 ng/ml) are higher than Karagül et al., (1999)'s findings (0.10-2.00 ng/ml) so it maybe because of origin or number of sheep, or the differences between the trial procedures.

The detected progesterone levels on this study are higher than non-prolific and similar to prolific breeds, minimum and maximum values of progesterone also similar to prolific breeds. So this shows that Akkaraman breed could be utilized as a prolific breed.

Considering sheep that are in lactation period are also in anoestrus period, the blood samples were collected at the 4th month of the lactation period. And the progesterone levels in anoestrus period were detected as 0.20-10.20 ng/ml. These findings are similar to oestrus progesterone levels in this study and the anoestrus or out-of-season progesterone levels of other sheep breeds (Bartlewski et al., 1998; Coelho et al., 2006; Ali et al., 2006 andÖzarslan 2014) reported before. So Akkaraman breed could be mated different times of year.

CONCLUSIONS

The purposes of this study were to detect oestrus cycle, gestation period and investigate the progesterone levels of Akkaraman ewes that were not detected naturally before. Akkaraman ewes had a shorter (approximately 2 days) oestrus cycle period and similar pregnancy period compared to the other breeds. This information's could be used in management practises like programming the mating time and the flushing time, determine the second mating time for enterprises that use hand service method, programing the practises on gestation period, detecting when the lambing period start and finish.

Mean levels of progesterone and the differences between maximum and minimum progesterone levels were similar to prolific breeds; however, generally higher than the non-prolific breeds. So this study results show that Akkaraman sheep breed could be utilized as a prolific breed.

ACKNOWLEDGEMENTS

This research was supported by Türkiye Bilimsel ve Teknolojik Araştirma Kurumu, Tarım, Ormancılık ve Veterinerlik Araştırma Destek Grubu (TÜBİTAK, TOVAG-112O342).

REFERENCES

Akçapinar, H. (2000).*Koyun Yetiştiriciliği*, Yenilenmiş 2. Baskı, ISBN: 975-96978-1-5, İsmat Matbaacılık, Ankara-Türkiye.

Akçapinar, H. & Kadak, R. (1982). Bazı faktörlerin akkaraman ve morkaramanlarda gebelik süresi ve doğum ağırlığı üzerine etkileri.*Ankara Üniv Vet FakDerg* 29 (3-4), 392-400.

Ali, A., Derar, R. & Hussein, H. (2006). Seasonal variation of the ovarian follicular dynamics and luteal functions of sheep in the subtropics.*Theriogenology*66, 463-469.

Ali, A.&Hayder, M. (2008). Seasonal variation of reproductive performance, foetal development and progesterone concentrations of sheep in the subtropics.*Reprod Dom Anim*43, 730-734.

Asi, T. (1999). Hormonlar. In *Tablolarla biyokimya Cilt II,*Ankara 1999, pp. 71-111.

Ben Salem, I., Rekik, M., Gonzalez-Bulnes, A., Lasoued, N. & Kraiem, K. (2010). Differences in preovulatory follicle dynamics and timing of preovulatory LH surge affect fertlity of maiden sheep reared in semi-arid extensive conditions. *J AnimReprodSci*, 117, 60-66.

Bartlewski, P.M., Beard, A.P., Cook, S.J. & Rawlings, N.C. (1998). Ovarian follicular dynamics during anoestrus in ewes.*J ReprodFertil,*113, 275-285.

Bartlewski, P.M., Baby, T.E.&Giffin, J.L. (2011). Reproductive cycles in sheep.*AnimReprodSci*, 124, 259-268.

Cunningham, N.F., Symons A.M. & Saba, N. (1975). Levels of progesterone, LH and FSH in the plasma of sheep during the oestrous cycle.*J ReprodFert,*45, 177-180.

Coelho, L.A., Rodrigues, P.A., Nonaka, K.O., Sasa, A., Balieiro, J.C.C., Vincente, W.R.R. & Cipolla-Neto, J. (2006). Annual pattern of plasma melatonin and progesterone concentrations in hair and wool ewe lambs kept under natural photopheriod at lower lattitudes in the southern hemisphere. *J Pineal Res,*41, 101-107.

Goodman, R.L. & Inskeep, E.K. (2015). Control of the ovarian cycle of the sheep.*In Knobil and Neill's Physiology of Reproduction.Fourth Edition.Volume 2.*Ed.: T. M. Plant, A. J. Zelenik. Elsevier Inc. pp.1259-1305.

Güler, M. (2007). Gebelik fizyolojisi.In *Evcil Hayvanlarda Doğum ve İnfertilite*. Ed.: E. Alaçam Medisan Yayınevi. Ankara. pp. 99-108.

Haliloğlu, S. & Serpek, B. (2000). Koyunlarda plazma vitamin C ve seruloplazmin düzeyleriyle eksojen vitamin C uygulamalarının dölverimi üzerine etkileri.*Turk J Vet AnimSci*, 24, 403-411.

Karagül, H., Sallmann, H.P., Fidanci,U.R., Sel, T., Çelik, S., Vural, R., Önal, A. & Ünal, N. (1999). The effect of vitamin E and selenium defficeincy on the reproductive hormones and antioxidative systems in Akkaraman Sheep, *Deutsch-TürkischeAgrarforschug*.

Kaya, M., Yıldız, S. & Güven, B. (2005). The determination of plasma progesteron, oestradiol-17B and luteinizing hormone levels during oestrous period of tuj ewe-lambs following oestrus induction. *Rev Med Vet,*156 (12), 628-632.

Kaya, M., Cenesiz, M., Ucar, O. & Yildiz, S. (2008). Determination of luteinizing hormone (LH) response to different doses of lecireline acetate (a GnRH analogue) in tuj ewe-lambs.*Rev Med Vet*, 159 (7), 413-417.

Lequin, R.M. (2005). Enzyme immunoassay (EIA)/Enzyme-linked immunosorbent assay (ELISA). *Clinical Chemistry,*51 (12), 2415-2418.

Mitchell, L.M., King, M.E., Aitken, R.P., Gebbie, F.E. & Wallace, J.M. (1999). Ovulation, fertilization and lambing rates, and pheripheral progesterone concentrations, in ewes inseminated at a natural oestrus during November or February. *J ReprodFertil*, 115, 133-140.

Özarslan, B. (2014). Bafra koyunu yetiştiriciliği ve üreme özelliklerinin incelenmesi.*Doktora tezi*.Ankara Üniversitesi Sağlık Bilimleri Enstitüsü.

Seekallu, S.V., Toosi, B.M., Duggavathi, R., Barrett, D.M.W., Davies, K.L., Waldner, C. & Rawlings NC (2010). Ovarian antral follicular dynamics in sheep revisited: comparison among estrous cycles with three or four follicular waves. *Theriogenology*, 73, 670-680.

Sulu, N., Özsar, S. & Güven,B. (1988). Sakız koyunlarında EIA tekniği ile serumda progesterone düzeylerinin tayini.*Ankara Üniv Vet FakDerg,*35 (2-3), 209-217.

Tworoger, S.S. & Hankinson, S.E. (2006). Collection, processing and storage of biological samples in epidemiologic studies: sex hormones, carotenoids, inflammatory markers and proteomics as examples, *Cancer Epidemiol Biomarkers Prev,* 15(9), 1578-1581.

Ünal, N. & Akçapınar, H. (1994). Koyunlarda Davranış. *Hay.Araş. Derg*.,4:2, 113-123.

Ünal, N., Aytaç, M., Koçak, S. & Erol, H. (2006).Çeşitli yerli saf ve melez genotip koyunlarda bazı üreme özellikleri.*Lalahan Hay AraştEnstDerg*, 46 (1), 45-57.

FULL TEXT SUBMISSIONS-7

SEROPREVALENCE AND RISK FACTORS ASSOCIATED WITH *CAPRINE ARTHRITIS-ENCEPHALITIS VIRUS* INFECTION IN GOATS IN IĞDIR REGION, TURKEY

ÖMER BARIŞ İNCE[a], AYTAÇ AKÇAY[b], MURAT ŞEVİK[c]

[a] Agriculture And Rural Development Support Institution, Department Of Project Management, Afyonkarahisar, Turkey

[b] Erciyes University, Faculty Of Veterinary Medicine, Dep. Of Biometrics, Kayseri, Turkey

[c] Veterinary Control Institute, Department Of Molecular Microbiology, Konya, Turkey

ABSTRACT

Caprine arthritis encephalitis (CAE) is an economically important viral disease of goats. This cross-sectional study was conducted to estimate seroprevalence and to analyse risk factors related to *caprine arthritis-encephalitis virus* infection (*CAEV*) in goats in Iğdır region, in the Eastern Turkey. Potential CAEV risk factors were evaluated based on environmental conditions and provincial epidemiological data. During July 2013 and January 2015, a total of 476 serum samples were randomly collected from 34 goat farms. Serum samples were examined for *CAEV* antibodies using competitive enzyme linked immunosorbent assay (cELISA) . Additionally semi-structured questionnaire was administered to farm owners to get information. The associations were statistically evaluated for significance in univariable model. On an individual level, herd size, age, sex and rearing system recorded a significant association with seropositivity of CAEV infection ($P < 0.05$). A total of 26 goats were found seropositive with overall prevalence of 5.46%. On herd level, 10 farms out of 34 were found seropositive (29.41%). The results of this study provide useful information to consider epidemiological programs against *CAEV* infection in Turkey.

Keywords: *CAEV*, Epidemiology, Goats, Risk Factors

Corresponding author:

ÖMER BARIŞ İNCE
Agriculture and Rural Development Support Institution, Department of Project Management, Afyonkarahisar, Turkey
incebaris@gmail.com

INTRODUCTION

Caprine arthritis encephalitis (CAE) is a viral disease of goats characterized by progressive degenerative inflammatory lesions in multiple regions (Blacklaws et al., 2004; Olechet al., 2012). Thecausativeagent, caprine arthritis encephalitis virus (CAEV), is a member of the *Lentivirus* genus in the *Retroviridae* family.

The infected milk and colostrum play a significant role in the transmission of CAEV infection, and the transmission can alsooccur through aerosol, intrauterine, direct contact and semen (Adams et al., 1983; Rowe et al., 1997; Le Janet al., 2005). The respiratory secretions of infected animals are effective in the spread of the virus (Blacklaws et al., 2004; Peterhans et al., 2004; Le Jan et al., 2005; Villoria et al., 2013).CAEV has been reported worldwide since its first documentation in goats inthe beginning of the 1970s.The serological results indicate that the prevalence rates in Australia and the USA were 82%, 73%, respectively (Grewalet al., 1986; Cutlip et al., 1992; Reinaet al., 2009). The prevalence rates of CAEV infection reported in Europe, Turkey, and the Middle East vary between 0.8% and 12.5%. (Houwers & van der Molen, 1987; Krieg & Peterhans, 1990; Literak et al., 1995; Contreras et al., 1998; Alluwaimi et al., 1990; Giangaspero et al., 1992; Burgu et al., 1994; Yavru et al., 2002).

CAE should be suspected in adults with polyarthritis and mastitis, and kids with progressive paresis. Laboratory tests can provide a definitive diagnosis of CAEV infection. The serological diagnosis of the infection can be made by determining the antibody titers in milk and serum samples (Plaza et al., 1999). Competitive ELISA (c-ELISA) was reported to be a quite specific test in the serological diagnosis of CAEV (De Andres et al., 2005).

The serological methods used in the early diagnosis of the infection have an important role in the eradication and control of CAEV infection because there is nospecific treatment for CAEV infection (Reina et al., 2009).

No report is available on the prevalence of CAEV infection among goat populations in the Iğdır Province. The investigation of disease-related risk factors has become important in terms of taking control measures related to the infection. In this study, the seroprevalenceof CAEV infection in the goat population in the IğdırProvince was determined with the antibodies developing against CAEV, and the potential risk factors associated with the prevalence of CAEV infection were investigated.

MATERIALS AND METHODS

Study area, design and epidemiological data

The study was conducted in the Iğdır Province. It is located along the eastern border of Turkey and has a large number of family-run small and medium-sized goat farms. The study was conducted with a cross-sectional and retrospective design which employed semi-structured questionnaire (SSQ) from July 2013 to January 2015. The required minimum within herd sample size was calculated based on the epidemiologic research (Thrusfield, 2005; Dohoo et al., 2010). Herd size in the studied area ranged from 5 to 250. Goat farms were grouped into 3 categories; small (1-50), medium (51-100) and large (more than 100 goats). SSQs were used to generate information related to the prevalence and history of CAEV, bio-data for individual animals, and disease-related losses including death and abortion. Goats-owners were selected randomly based on willingness to complete the questionnaire. Questionnaire interviews were carried out in Iğdır Province and were administered by face-to-face. Information on individual animal variables was recorded separately on sample data sheets. Herd level data that included: herd structure, size, history of purchases of animals and farm management practices were collected by interviewer-administered questionnaire. The sample included 476 animals of different ages, sexes, and breeds.

Sample collection and serological test

A total of 476 blood samples which were taken from hair goats found in 34 enterprises in the Iğdır Province with the random sampling method were used in this study. The blood samples which were taken into sterile vacuum tubes for serological testing were centrifuged at 2000 rpm for 10 min. and serum samples were stored at −20 °C until testing. Serum samples were examined in terms of the presence of antibody developing against CAEV with commercially available ELISA Maedi-Visna/CAEV antibody test kit (Institut Pourquier, France) based on the manufacturer's instruction.

Statistical analysis

Data were entered and stored in Microsoft Excel spread sheets. Association between the occurrence of CAEV infection and potential risk factors was firstly carried out by univariate analysis using chisquare ($\chi 2$) test. Data were analysed in R version 3.1.2 andSPSS for Windows 14.01 (License No: 9869264). The Oddsratio(OR) was calculated for each risk factor for animals sick with CAEV. In all the analyses, confidence levels at 95 % were calculated, and a $P < 0.05$ was used for statistical significance level. The variate logistic regression analysis was used to determine the percentages of the effect of the risk factors which are considered to be effective on seroprevalence of CAEV infection. Four hundred and seventy-six goats which were included in the application in the study

were defined as disease positive (1) or negative (0) according to the results of serological tests performed for CAEV. Serological test results were defined as categorical (discrete, classful dependent variable (Y) which can take binary values). In the study, 6 variables that could be a risk factor for CAEV (herd size, gender, age, feeding system, entrance of new goats into the herd, presence of sheep in the herd) were taken as categorical independent variables in the univariate logistic regression analysis to be formed. The effects of the variables on CAEV were determined by applying the univariate logistic regression analysis on all variables.The univariate logistic regression analysis of the variables examined was conducted, and their relations with CAEV were examined. $\hat{\beta}$: estimated slope coefficient; $SE(\hat{\beta})$: standard error of the estimated slope coefficient $Wald$: Wald statistics testing whether the slope coefficients are equal to zero for the model; P: P value belonging to Wald statistics; OR: Estimated odds ratio and corresponding 95% confidence interval are given in the table containing the models of the variables (Table 2).

RESULTS AND DISCUSSIONS

CAEV serological survey

Out of the 476 goats from 34 herds included in the study, 26(5.46%) were considered as CAEV-positive based on the ELISA results On the herd level, 10(29.41%) out of 34 herds were found to be infected. The seroprevalence in each herd size varied between 1.87% and 14.28%. Effects of age, sex, herd size, rearing system, new goats into herd and presence of sheep status distribution of CAEV were studied. Detected differences between these variants were statistically evaluated according to epidemiologic principles. The results are illustrated in Table 1 and Table 2.

Risk factors analysis

The chi-square and univariable analysis revealed different variables with p values ≤ 0.05. Table 1 shows the distribution of the different investigated variables among the CAEV-positive and CAEV-negative goats on the individual and herd level. On the individual level; herd size, age, sex and rearing system recorded a significant association with seropositivity of CAEV infections (P < 0.05).The results are illustrated in tables.1 (herd size) of 6 variables (herd size, gender, age, feeding system, the entrance of new goats into the herd, the presence of sheep in the herd) which were examined within the scope of the study was determined to be an important risk factor for CAEV. The herds were determined to be small in size by 55.9%. CAEV odds ratios were calculated to be more by 4.81-fold in medium-sized herds compared to smaller herds and to be more by 8.7-fold in larger herds.

In this study, CAEV prevalence and its association with different risk factors were analyzed. Significant findings from our study clearly suggest that proper control measures are needed to prevent future occurrences of outbreaks caused by CAEV infection in goat herds of Turkey. Furthermore, we strongly believe that the information obtained on seroprevalence of CAEV infection in this study is an important first step towards the establishment of effective control and eradication programmes in the future.

Prevalence rates were found as 73 %, 49.5 %, 36.5%, 4.3 %, 2 %, 0.4 %, 4.2% and 5.52% in the USA, Australia, Brazil, UK, Switzerland, Mexico, Italy and Thailand, respectively. (Adams et al., 1984; Dawson M. &Wilesmith J.W. 1985;Grewal et al., 1986;Cutlip et al., 1992 Garcia et al., 1992; Nord et al., 1998; Torres et al., 2003)

In a study conducted in the Konya Province, the presence of the infection at the ratio of 13% was determined by ELISA (Yavru et al., 2002). Aslantaş et al. (2005) found (1.03%) positivity in the Hatay Province. Azkur et al. (2011) reported the ratio of 7.5% in the Kırıkkale Province and its surroundings.

In this study, the seroprevalence of CAEV infection was determined as 5.46% by cELISA. These findings are similar to the findings in the UK, Italy and Thailand and the findings obtained in the studies carried out in Turkey by Aslantaş et al., Burgu et al., Yavru et al., Yapıcı et al., Azkur et al.

In this study, the herd size was observed to have a significant effect at the herd and individual level as a risk factor. At the same time, it was observed that the odds ratio increased in direct proportion to the herd size. Similar findings with the previous studies have been reported. (Brülisauer et al., 2005, Ghanem et al., 2009, Thant Nyi Lin et al., 2011) The ratio of small herds (55.88%) within the herds accounted for nearly half of this study.(. Although high seroprevalence was observed in the small-sized herds, low seroprevalence was observed in the small herds of this study (21.05%). In this study, a significant correlation was found between the feeding system and CAEV infection.(p=0.03) Therefore, intensive feeding should be taken into consideration for the CAEV infection in the farm management.Al-Qudah et al., (2006) and Bandeira et al., (2009) reported that purchased animals are risk factor for the CAEV infection, however in this study we couldn't observed that purchased animals are risk factor for the infection.

Increasing age was an indicator of the increasing seropositive status at the individual level. In this study, it was observed that CAEV seroprevalence was in the tendency to increase by its determination as (2.6%) in those under the age of 1 and as (4.0%) in those between1-3. It was found that the prevalence was increased by two and a half fold (10.2%) from 3 years of age, and it was statistically significant.(P=0.03)

In another study, it was stated that CAEV seroprevalence increased along with the age (Dawson and Wilesmith, 1985; Cutlip et al., 1992 Greenwood et al., 1995) and was highly significant from 3 years of age (Al-Qudah et al., 2006). This can be explained by the fact that CAEV infection's possibility of exposure to risks increases as prone to the age of the goats, and it can produce lifelong infection as persistent and carrier after being infected with CAEV(Knight and Jokinen, 1982, Al-Ani and Vestweber, 1984) .

As it was reported in other studies related to gender (Aslantaş et al., 2005; Bandeira et al., 2009; Thant Nyi Lin et al., 2011), CAEV seroprevalence was found to be significantly high and meaningful (P=0.04) in male (10.12%) in our study. However, Ratanapob et al. (2009) reported that the seroprevalencewas 13.21% in female

Consequently, this study provided an overview of the status of CAEV infection and its risk factors in goats in the IğdırProvince, Turkey. Therefore, it is necessary to carry out advanced studies to evaluate the epidemiological perspective of CAE . CAEV infection screening should be conducted for preventing the spread of the disease Furthermore, determining the control program for CAEV infectinwill provide significant benefits.

Conflict of interest

The authors declare that they have no conflict of interest.

REFERENCES

Acar, A., Yavru, S., Kale, M., Bulut,O., Avci, O. &**Pehlivanoglu, F. (2008).** Caprine arthritis encephalitis virus infection in Kids with Arthritis.*Indian Vet J,* 85, 824-825.

Adams D.S., Klevjer-Anderson P., Carlson J.L., McGuire T.C. &Gorham J.R. (1983). Transmission and control of caprine arthritis encephalitis virus. *Am. J. Vet. Res.*44,1670-1675.

Adams DS., Oliver RE., Ameghini E., De Martini JC., Verwoerd DW., Houwers DJ., Waghela S., Gorham JR., Hyllseth B. & others. (1984). Global survey of serological evidence of caprine arthritis-encephalitis virus infection.*Vet. Rec.,* 115,493-4951

Al-Ani, F.K. &Vestweber, J.G.E. (1984). Caprinearthritisencephalitissyndrome (CAE): A review. *VetResComm.*8, 243-253

Al-Qudah, K., Al-Majali, A.M. & Ismail, Z.B. (2006). Epidemiological studies on caprine arthritis encephalitis virus infection in Jordan*. Small RuminRes.*66,181-186.

Alluwaimi, A.M., Abu Elzein, E.M. &Hassanein, M.M. (1990). Caprine arthritis-encephalitis antibodies in indigenous sheep in Saudi Arabia.*Rev. Elev. Med. Vet. Pays. Trop.*43, 444–445.

Angelopoulou, K., Brellou, G.D., Greenland, T. &**Vlemmas, I. (2006).** A noveldeletion in the LTR region of a Greeksmallruminantlentivirusmay be associatedwithlowpathogenicity. *VirusRes*, 118, 178-184

Aslantaş, O., Özyörük, F., Pınar, D. & **Güngör, B. (2005).** Serological survey for caprine arthritis-encephalitis virus in Damascus and Kilis Goats in Hatay, Turkey.*RevueMed Vet.*156, 402-404.

Azkur, A.K., Gazyağcı, S. & **Aslan, M.E. (2011).** Serological and Epidemiological Investigation of Bluetongue, Maedi-Visna and Caprine Arthritis-Encephalitis Viruses in Small Ruminant in Kırıkkale District in Turkey. *Kafkas UnivVet Fak Derg.*17, 803-808.

Bandeira, D.A., de Castro, R.S., Azevedo, E.O., de Souza Seixas Melo, L. & de Melo, C.B. (2009). Seroprevalence of caprinearthritis-encephalitis virus in goats in theCariri region*, Paraibastate, Brazil. Vet J.* 180, 399-401.

Blacklaws, B.A., Berriatua, E., Torsteinsdottir, S., Watt, N.J., de Andres, D., Klein, D. & Harkiss, G.D. (2004). Transmission of small ruminant lentiviruses.*Veterinary Microbiology* 101, 199–208.

Brülisauer, F., Vogt, H., Perler, L. & Rüfenacht, J. (2005). Risk factors for the infection of Swiss goat herds with small ruminant lentivirus: a case-control study. *Vet. Rec.* 157, 229–233

Burgu, I., Akca, Y., Alkan, F., Ozkul, A., Karaoglu, T. &, Cabalar, M., (1994). Antibody prevalence of caprine arthritis- encephalitis virus (CAEV) in goats in Turkey.*Dtsch.Tierarztl.Wochenschr.*101, 390–391.

Castro, R.S., Greenland, T., Leite, R., Gouveia A., Mornex, J.F. &Cordier, G. (1999). Conserved sequence motifs involving the tat reading frame of Brazilian caprine lentiviruses indicate affiliations to both caprine arthritis-encephalitis virus and visna-maedi virus. *J. Gen. Virol.* 80, 1583-1589.

Contreras, A., Corrales, J.C., Sanchez, A., Aduriz, J.J., Gonzalez, L. &Marco, J. (1998). Caprine arthritis-encephalitis in an indigenous Spanish breed of dairygoat.*VeterinaryRecord*142**,** 140–142.

Cutlip, R.C., Lehmkuhl, H.D., Sacks, J.M. & Weaver, A.L. (1992). Prevalence of antibody to caprine arthritis encephalitis virus in goats in the United States.*J Am VetMedAssoc.*200, 802-805.

Dawson, M. & Wilesmith, J.W. (1985). Serologicalsurvey of Lentivirus (maedi-visna/caprine arthritis-encephalitis) infection in British goatherds.VetRec. 117, 86-89.

De Andres, D., Klein, D., Watt, N.J., Berriatua, E., Torsteinsdottir, S., Blacklaws, B.A. & Harkiss, G.D. (2005). Diagnostic tests for small ruminant lentiviruses.*Vet. Microbiol.*107, 49-62.

Dohoo, I., Martin, W. &**Stryhn, H. (2010).**Veterinary epidemiologic research. 2nd Edn., Charlottetown, Prince Edward Island, AVC Inc., PP: 395-426.

Garcia, M., Galhardo, M., Araujo, W.P., D'angelino, J.L., Bastos, P.S. & Rossini, A.J. (1992).Caprine arthritis-encephalitis (CAE) occurence of positive sera in goats raised in Brazil.*Trop. Anim. Hlth. Prod.* 24,164.

Ghanem, Y.M., El-Khodery, S.A., Saad, A.A., Elragaby, S.A., Abdelkader, A.H. & Heybe, A. (2009). Prevalence and risk factors of caprine arthritis encephalitis virüs infection (CAEV) in Northern Somalia.*Small RuminRes.*85, 142-148.

Giangaspero, M., Vanopdenbosch, E. &, Nishikawa, H. (1992). Lentiviral arthritis and encephalitis in goats in north-west Syria.*Rev. Elev. Med. Vet. Pays. Trop.* 45, pp. 241–241.

Greenwood, P.L., North, R.N. & Kirkland, P.D. (1995b). Prevalence, spread andcontrol of caprinearthritisencephalitis virus in dairygoatherds in New South Wales. AustVet J. 72, 341-345.

Grewal, A.S., Greenwood, P.E., Burton, R.W., Smith, J.E., Batty, E.M. &, North, R. (1986). Caprine retrovirus infection in New South Wales : virus isolations, clinical and histopathological findings and prevalence of antibody. *Aust. Vet. J.,* 63, 245-248.

Herrmann, L.M., Cheevers, W.P., McGuire, T.C., Adams, D.S., Hutton, M.M., Gavin, W.G. &Knowles, D.P, (2003). Competitive-inhibition enzyme-linked immunosorbent assay for detection of serum antibodies to caprine arthritis-encephalitis virus: diagnostic tool for success full eradication. *Clin. Diagn. Lab. Immunol.* 10, 267-271.

Houwers, D.J. & van der Molen, E.J., (1987). Initial cases of caprine arthritis-encephalitis virus in the Netherlands.*Tijdschr.Diergeneeskd.*112, 1054–1061.

Knight, A.P. & Jokinen, M.P. (1982). Caprine arthritis encephalitis virus *CompendContEducPract Vet*.4,263-269.

Krieg, A. &, Peterhans, E. (1990). Caprine arthritis-encephalitis in Switzerland: epidemiologic and clinical studies.*Schweiz.Arch.Tierheilkd.*132, 345–352.

Nord, K., Rimstad, E., Storset, AK.& Loken, T. (1998). Prevalence of antibodies against caprine arthritis-encephalitis virus in goat herds in Norway. *Small Rum.Res.,* 28,115-121.

Le Jan C, Bellaton C, Greenland T. &Mornex JF, (2005). Mammary transmission of caprine arthritis encephalitisvirus: a 3D model for in vitrostudy. *Reprod. Nutr. Dev.* 45**,** 513-523.

Literak, I., Skrivanek, M., Skalka, B. &Celer Jr., V. (1995). Antibodies to certain infections on large goat farms in the Czech republic*. Vet. Med. (Praha)* 40, 133–136.

Olech, M., Rachid, N., Croisé, B., Kuzmak, J. & Valas, S. (2012). Geneticandantigeniccharacterization of smallruminantlentivirusescirculating in Poland.*Virus.Res*.163,528-536.

Peterhans, E., Greenland, T., Badiola, J., Harkiss, G., Bertoni, G., Amorena, B., Eliaszewicz, M., Juste, R.A., Krassnig, R., &others (2004). Routes of transmission and consequences of small ruminant lentiviruses (SRLVs) infection and eradication schemes.*Veterinary Research.* 35, 257–274.

Plaza, M., Sanchez, A., Corrales, J.C., De la Fe, C. &Contreras, A, (2009). Caprine arthritis encephalitis virus diagnosed by ELISA in lactating goats using milk samples.*Small Rumin. Res.* 81, 189-192.

Ratanapob, N.,Rukkwamsuk, T. & Jala, S. (2009). Seroprevalence of caprine arthritis encephalitis virüs infection in goats raised in the central part and western part of Thailand.Proceedings of 47th KasetsartUniversityAnn.Con., Bangkok, Thailand.March 17- 20, 2009.62-69.

Reina, R., Berriatua, E., Lujan, L., Juste, R., Sanchez, A., de Andres, D. & Amorena, B. (2009). Prevention strategies against small ruminant lentiviruses: an update. *Vet J,* 182, 31–37.

Rowe, J.D. &East, N.E. (1997). Risk factors for transmission and methods for control of caprine arthritis-encephalitis virus infection*. Vet. Clin. N. Am. Food Anim. Pract.* 13**,** 33-53.

Thant, N.L., Saroch, N., Kanisak, O., Prachin, V.&Mongkol, T. (2011). Seroprevalence and Risk Factors Associated with Caprine Arthritis-Encephalitis Virus Infection in Goats in the Western Part of Thailand *Thai J Vet Med.* 41,353-360.

Thrusfield, M. (2005). Veterinary Epidemiology. Great Britain: Blackwell Science Ltd. 584 pp

Torres-Acosta JFJ., Gutierrez EJ., Butler V., Schmidt A., Evans J., Babington J., Bearman K., Fordharn T., Brownlie T. & others (2003). Serological survey of caprinearhritis-encephalitis virus 83 goat herds of Yucatan, Mexico.*Small Rum.Res.,* 49,207-211.

Villoria, M.,Leginagoikoa, I., Lujan, L., Perez, M., Salazar, E., Berriatua, E., Juste, R.A.&Minguijon, E., (2013). Detection of small ruminant Lentivirus in environmental samples of air and water. *Small Rum. Res.* 110, 155-160.

Yapıcı, O., Avcı, O., Dik, I., Atlı, K., Yavru, S. (2013). Saanen Keçilerinde Caprine Arthritis-Encephalitis Virus Enfeksiyonunun Serolojik Araştırılması *AVKAE Derg.*3,51-54

Yavru S., Şimşek A., Kale M. & Bulut O. (2002). Konya bölgesindeki artrit-ensefalit virusu (CAEV) enfeksiyonunun AGID ve ELISA testleriyle serolojik olarak arastirlmasi. 5th International Veterinary Microbiology Congress, 2002, 24-26 September 2002, Konya, Turkey.106-107.

Yavru, S., Şimşek, A., Kale, M. & Bulut, O. (2006). An investigation of caprine arthritis encephalitis virusinfection in goats. *Veterinarium.*17, 4-7.

FULL TEXT SUBMISSIONS-8

LIVE WEIGHT AND SOME MORPHOLOGICAL CHARACTERISTICS OF ZAĞAR, ZERDAVA AND ÇATALBURUN DOGS

FATMA TÜLİN ÖZBAŞER[a], FATİH ATASOY[b], BANU YÜCEER ÖZKUL[b], BORA ÖZARSLAN[c]

[a] Ari Farma Limited Company, Ankara, Turkey
[b] Ankara University, Faculty Of Veterinary Medicine, Department Of Animal Husbandry, Ankara, Turkey
[c] Kırıkkale University, Faculty of Veterinary Medicine, Department of Animal Husbandry, Ankara, Turkey

ABSTRACT

The aim of this study was to determine the live weight and some morphological characteristics (wither and rump height, body lenght, chest width, chesth depth and circumference, fore and hind wrist circumference, head length, muzzle length, ear length and width, distance between eyes and ears, nozzle circumference) 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 (Trakya region, Manisa, Burdur and Afyonkarahisar) and Zerdava (Trabzon and around)). The data were obtained from dogs at ages twelve month and older. The data for Zağar, Zerdava and Çatalburun dogs in the study means were, respectively 18.23±0.38, 15.95±0.36 and 19.69±0.41 kg for live weight, 50.51±0.40, 48.07±0.25 and 48.27±0.37cm for wither height, 50.28±0.40, 47.10±0.28 and 49.01±0.36 cm for rump height, 50.28±0.40, 52.18±0.31 and 53,95±0,49 cm for body lenght. It has been seen that the numbers of these dogs are in decline and the dogs were degenerated crossing with other dogs. In this study, measurements and live weights were taken for the dogs that have common or similar features determined previously. As a result, an important step has been taken with this study for the goals of Zağar, Zerdava and Çatalburun dogs to become registered, protected and increased in numbers as a new breed.

Keywords: Body Traits, Çatalburun, Dog, Live Weight, Zerdava, Zağar

Corresponding author:
FATMA TÜLİN ÖZBAŞER
Arı Farma Limited Company, Ankara, Turkey
ftulin@gmail.com

INTRODUCTION

Embracing various civilizations throughout the history, Turkey is also home to various native animal genetics sources. Several genotypes have been protected by native people to come to date without degeneration. Zağar, Zerdava, and Çatalburun breeds fall within these native genetic sources. It is reported by natives that these dogs have survived in their regions from a very long time, however there is not enough scientific information and documentation on this topic.

Some dog breeds in Turkey have been adopted and identified by foreigners. It is of significance to identify and standardize other native genotypes within the domain of scientific research not to sacrifice them to non-scientific effort.

This study is conducted with the aim to determine the live weight and some morphological qualities of dog breeds namely Zağar, Zerdava, and Çatalburun

MATERIALS AND METHODS

Animal material for the study consists of Zağar, Zerdava and Çatalburun dogs older than 1 year. Samples are collected from Tekirdağ, Çorlu, Manisa, Burdur, and Afyonkarahisar for Zağar dogs (n=104), from Trabzon center, Tonya, Maçka, Vakfıkebir, and Yomra and Giresun for Zerdava dogs (n=100), from İçel, Tarsus, Mersin center and villages for Çatalburun dogs (n=100). In this research, the animals used in the projects no 115 O 613 supported by TUBITAK were also used as materials.

Live weights of dogs are measured with a 100 g precision scale. Rump and withers height, body length, chest depth and width are measured with measuring stick, while chest circumference, fore and hind wrist circumference, head- face, and ear length, distance between eyes and ears, nozzle circumference are measured using measuring tape (Spira, 1991; Tepeli & Çetin, 2000; Tepeli & Çetin, 2003).

Significance findings for the variance between gender groups are obtained through t test, while significance findings for the variance between age groups are obtained through one-way variance analysis. Duncan test is used to multi-compare age groups. SPSS software is used for statistical analysis of data gathered (Duncan, 1955; Düzgüneş et al., 1987).

RESULTS AND DISCUSSION

Zağar breed has black spots on upper head and neck, upper and sides of the body, while legs, abdomen and chest are dark or light brown. Their faces are brown or black speckled. Tail is black, thin and hook-shaped. Ears are dangling. Eyes are dark brown or black. Upper parts of eyes might have light brown spots. This is named four-eyedness. They are used for bunny hunt for their hounding skills Table1 shows some of the head and body statistics of Zağar dogs. Variance between gender groups showed significance regarding some morphological qualities (rump and withers

height, head and body length, fore wrist circumference (P<0.001), chest depth, face and ear length, hind wrist circumference (P<0.01), live weight, chest circumference, ear width (P<0.05)), while variance between age groups showed no significance.

Zerdava breed is a rare one with upright ears. These dogs are trained to be watchdog or hound (especially in pig hunt). Body is medium sized with light hazel to dark hazel feather color. Some spots on the body are covered with white feathers (a full or half ring around neck, front and rear legs, lower chest and stomach, end of the tail). Whiteness of the end of tail is acknowledged as an important morphological quality of this breed. There are tiny round (freckles) feathers on white leg feathers called flakes, same color with the body. Tail is round or half round shaped (natives call it whip tail). Table 2 shows some head and body qualities of Zerdava dogs. Zerdava sample showed significance in both gender (rump and withers height, body length, chest depth, fore wrist circumference, head and face length (P<0.001), hind wrist circumference (P<0.01), nozzle circumference (P<0.05)) and age groups variance (withers height, fore wrist circumference, live weight, ear length, distance between ears (P<0.05), rump height, chest circumference (P<0.01), chest depth, nozzle circumference (P<0.001)).

Çatalburun dogs have small or medium sized bodies, with long and dangling ears. Their color is not uniform, usually a brown or combination of brown-white. Their snouts are splitted into two, which makes them one of the best breed for hunting. Their eyes are honey colored. These dogs are used for hunting today, while they are also being tested for narcotic purposes. Table 3 shows some of their head and body qualities. Çatalburun dogs show significance regarding some of their morphological qualities in both age (chest circumference, fore and hind circumference, head and ear length, nozzle circumference (P<0.001), withers height, chest depth, live weight, body length, face lenght (P<0.01), and rump height, (P<0.05)) and gender groups (rump and withers height, body length, chest circumference, fore and hind circumference, head- face, and ear length, nozzle circumference (P<0.001), chest width and depth, live weight (P<0.01), distance between eyes (P<0.05)).

Some of the findings in this study for Zerdava dogs (rump and withers height, body length and chest depth) seem to be lower than the findings of Yılmaz & Ertuğrul (2012). This might be related to the sample size. Gender group findings for Çatalburun dogs seem to be similar to the findings of Kırmızıbayrak & Takçı (2006) (live weight, body and ear length, distance between eyes), lower (rump and withers height, head length, chest circumference) or higher (chest depth and width, distance between ears).

Average findings obtained from Çatalburun sample seem to be found as higher (live weight, withers height, body length, chest depth and width), similar (rump height, head length), and lower

(fore wrist circumference) than the findings of Yılmaz & Ertuğrul (2011); seem to be found as higher (chest depth and width), similar (rump height body length) and lower (withers height, chest circumference, fore and hind wrist circumference, head, ear length) than the findings of Oğrak et al. (2014).

No significant difference between Zağar dogs' age groups and bigger fore and hind circumference compared to Zerdava and Çatalburun dogs might be interpreted Zağar dogs grow up sooner than others. There is no discussion on Zağar dogs in this study, since no previous research is found conducted on them. However, Zağar and Zerdava dogs' body color and marks showed very small phenotypical variation in this study's sample which might be considered the breed has been protected by natives to be able to reach our day without degeneration.

CONCLUSION

This study is important with regards to morphological data gathering for identifying Zağar, Zerdava and Çatalburun dogs as well as breed registry studies, especially when there is no previous comprehensive research with such a big sample size. This study is ongoing with genetical analyses through genotypical blood samples.

ACKNOWLEDGEMENTS

Due to the supports for being carried out of the project, we thank Zağar, Zerdava and Çatalburun dogs owners. This research has been supported within the content of the project no TOVAG 115 O 613 by the Scientific and Technological Research Council of Turkey (TUBITAK).

REFERENCES

Duncan, D.B. (1955). Multiple range and multiple F tests.*Biometrics,* 11, 1-42.

Düzgüneş, O., Kesici, T., Kavuncu, O., Gürbüz, F. (1987). Araştırma ve Deneme Metotları.İstatistik Metotları II.Ankara Üniversitesi Ziraat Fakültesi Yayınları. Yayın: 1021. Ders Kitabı: 295. Ankara.

Kırmızıbayrak, T., Takcı, İ. (2006). Body weight and morphological characteristics of Tarsus Çatalburun dogs, *Indian Vet J,*83, 914-915.

Oğrak, Y.Z., Yoldaş, A., Urasevic, M., Drobnjak, D. (2014). Some morphplogical traits of Tarsus Çatalburun breed of Turkish hunting dog.*Eurasian J Vet Sci,* 30, 25-29.

Tepeli, C., Çetin, O. (2000). Kangal ırkı Türk çoban köpeklerinde büyüme bazı vücut ölçüleri ve döl verimi özelliklerinin belirlenmesi, I. Büyüme ve Bazı Vücut Ölçüleri.*Vet. Bil.Derg.* 16, 5-16.

Tepeli, C., Çetin, O. (2003). Kangal ve Akbaş ırkı Türk çoban köpeklerinin baş ölçüleri üzerine bir araştırma.*Vet. Bil.Derg.* 19, 17-19.

Spira, R.H. (1991). Canine Terminology, Howell Book House Inc., Newyourk, USA.

Yılmaz, O., Ertugrul, M. (2012). Determination of Zerdava Dog (Kapi Kopegi) Raised in Northeast of Turkey *J Vet Adv*,2, 457-461.

Yılmaz, O., Ertugrul, M. (2011). Some morphological characteristics of the Tarsus Fork-Nose Dog in Turkey, *Animal studies & Veterinary medicine*, 1, 121-125.

Table 1: Some morphological features of Zağar dogs

	n	Wither Height	Rump Height	Body Lenght	Chest Width	Chest Depth	Chest Circumference	Fore Wrist Circumference	Hind Wrist Circumference
Age (Month)		-	-	-	-	-	-	-	-
12	19	50.65±0.84	49.92±0.77	55.63±0.87	17.26±0.41	20.28±0.46	56.02±1.47	9.73±0.17	8.76±0.18
13-24	24	50.10±0.76	50.12±0.77	56.62±0.68	17.52±0.30	21.06±0.32	57.81±0.77	9.95±0.16	9.14±0.17
25-36	33	50.27±0.74	50.13±0.76	56.71±0.83	17.98±0.27	20.81±0.40	58.25±0.81	9.81±0.17	8.92±0.15
37+	28	51.03±0.82	50.82±0.82	56.42±0.67	18.12±0.33	21.69±0.37	59.60±0.83	9.80±0.14	9.00±0.15
Gender		***	***	***	-	**	*	***	**
Female	45	48.51±0.60	48.23±0.62	54.71±0.61	17.43±0.23	20.36±0.24	56.97±0.71	9.50±0.11	8.68±0.11
Male	59	52.03±0.43	51.72±0.41	57.72±0.43	18.05±0.22	21.50±0.28	58.97±0.62	10.08±0.11	9.17±0.11
Mean	104	50.50±0.39	50.27±0.39	56.41±0.38	17.78±0.16	21.01±0.20	58.11±0.47	9.83±0.08	8.96±0.08

	n	Live Weight	Head lenght	Face Lenght	Ear Lenght	Ear Width	Distance between ears	Distance between eyes	Nozzle Circumference
Age (Month)		-	-	-	-	-	-	-	-
12	19	16.92±0.98	23.21±0.34	9.70±0.20	14.66±0.31	11.09±0.28	13.53±0.30	4.40±0.15	20.43±0.48
13-24	24	18.17±0.70	23.79±0.28	9.76±0.16	14.20±0.26	10.99±0.23	13.45±0.25	4.51±0.12	20.90±0.40
25-36	33	18.19±0.65	23.65±0.27	9.53±0.14	14.14±0.22	10.82±0.20	13.12±0.21	4.58±0.10	20.55±0.34
37+	28	19.24±0.72	23.55±0.27	9.62±0.16	14.15±0.25	10.84±0.23	13.49±0.24	4.56±0.12	21.19±0.38
Gender		*	***	**	**	*	-	-	-
Female	45	17.29±0.58	22.91±0.21	9.41±0.13	13.85±0.18	10.66±0.17	13.18±0.19	4.51±0.09	20.32±0.33
Male	59	18.96±0.47	24.08±0.17	9.86±0.09	14.57±0.16	11.17±0.14	13.54±0.15	4.53±0.07	21.06±0.22
Mean	104	18.24±0.37	23.57±0.14	9.66±0.08	14.26±0.12	10.95±0.11	13.38±0.12	4.52±0.05	20.74±0.19

-:No significant; *: P<0.05, **:P<0.01, ***:P<0.001

Table 2: Some morphological features of Zerdava dogs

	n	Wither Height	Rump Height	Body Lenght	Chest Width	Chest Depth	Chest Circumference	Fore Wrist Circumference	Hind Wrist Circumference
Age (Month)		*	**	-	-	***	**	*	**
12	27	47.03±0.40a	45.64±0.45a	50.52±0.44	16.69±0.33	19.04±0.22a	50.92±0.68a	8.73±0.10a	8.26±0.11a
13-24	34	48.45±0.36b	47.52±0.45b	51.85±0.39	17.73±0.29	20.60±0.20b	53.53±0.61b	9.13±0.09b	8.63±0.10ab
25-36	20	48.44±0.48b	47.46±0.53b	51.08±0.52	17.82±0.38	21.16±0.26b	54.44±0.81b	9.14±0.12b	8.84±0.13b
37+	19	48.88±0.48b	47.71±0.54b	51.50±0.53	17.77±0.39	21.22±0.02b	54.30±0.82b	9.01±0.12ab	8.54±0.13ab
Gender		***	***	***	-	***	**	***	**
Female	50	47.23±0.31	46.12±0.35	50.42±0.34	17.34±0.25	20.13±0.17	52.48±0.54	8.82±0.08	8.43±0.08
Male	50	49.17±0.29	48.05±0.33	52.06±0.32	17.66±0.24	20.88±0.16	54.11±0.50	9.18±0.07	8.70±0.08
Mean	100	48.20±0.21	47.08±0.24	51.24±0.23	17.50±0.17	20.50±0.12	53.30±0.37	9.00±0.05	8.57±0.06

	n	Live Weight	Head lenght	Face Lenght	Ear Lenght	Ear Width	Distance between ears	Distance between eyes	Nozzle Circumference
Age (Month)		*	-	-	*	-	*	-	***
12	27	14.31±0.58a	20.57±0.18	8.40±0.09	9.78±0.13a	8.50±0.11	10.49±0.23a	4.06±0.27	17.34±0.19a
13-24	34	15.72±0.53ab	21.00±0.16	8.57±0.08	10.36±0.12b	8.84±0.10	10.81±0.20ab	4.86±0.24	18.81±0.17c
25-36	20	16.74±0.85b	21.15±0.21	8.56±0.11	10.00±0.16ab	8.85±0.14	11.37±0.27b	4.32±0.31	18.16±0.22bc
37+	19	17.88±0.96b	21.07±0.22	8.43±0.11	10.01±0.16ab	8.74±0.14	11.48±0.27b	4.69±0.32	18.04±0.23b
Gender		-	***	***	**	-	-	-	*
Female	50	15.79±0.51	20.56±0.14	8.31±0.07	9.85±0.10	8.67±0.09	11.18±0.18	4.26±0.21	17.78±0.15
Male	50	16.25±0.47	21.34±0.13	8.67±0.07	10.22±0.10	8.80±0.08	10.89±0.17	4.70±0.19	18.40±0.14
Mean	100	16.02±0.35	20.95±0.09	8.49±0.05	10.04±0.07	8.73±0.06	11.04±0.12	4.48±0.14	18.09±0.10

-:No significant; *: P<0.05. **:P<0.01. ***:P<0.001

[abc]: means within with no comman supercripts are significantly different (P<0.05)

Table 3: Some morphological features of Çatalburun dogs

	n	Wither Height	Rump Height	Body Lenght	Chest Width	Chest Depth	Chest Circumference	Fore Wrist Circumference	Hind Wrist Circumference
Age (Month)		**	*	-	-	**	***	***	***
12	28	47.09±0.68a	48.06±0.67a	52.90±0.65a	18.89±0.40	21.19±0.32a	56.59±0.77a	8.70±0.13a	8.21±0.11a
13-24	23	48.37±0.65b	49.48±0.64b	54.28±0.62ab	19.27±0.39	22.94±0.30b	60.11±0.74b	9.39±0.12b	8.55±0.10b
25-36	17	48.68±0.83b	49.44±0.82b	54.23±0.79ab	19.66±0.49	22.55±0.39b	60.44±0.94b	9.37±0.16b	8.62±0.13b
37+	32	48.76±0.55b	49.32±0.54b	54.78±0.53b	19.69±0.33	22.40±0.26b	60.45±0.62b	9.49±0.10b	8.78±0.09b
Gender		***	***	***	**	**	***	***	***
Female	62	46.87±0.41	47.92±0.40	52.85±0.39	18.93±0.24	21.94±0.19	58.57±0.46	8.99±0.08	8.38±0.06
Male	38	49.58±0.55	50.23±0.54	55.24±0.52	19.83±0.33	22.60±0.26	60.22±0.62	9.48±0.10	8.71±0.09
Mean	100	48.23±0.34	49.07±0.33	54.05±0.32	19.38±0.20	22.27±0.16	59.40±0.39	9.24±0.06	8.54±0.05

	n	Live Weight	Head lenght	Face Lenght	Ear Lenght	Ear Width	Distance between ears	Distance between eyes	Nozzle Circumference
Age (Month)		**	***	**	***	-	-	-	***
12	28	18.62±0.82a	19.08±0.33a	6.92±0.16a	13.85±0.32a	11.36±0.18	13.65±0.23	4.79±0.07	18.33±0.26a
13-24	23	20.32±0.79b	20.00±0.31b	7.22±0.15ab	15.47±0.31b	11.70±0.17	13.58±0.22	4.94±0.07	19.43±0.24b
25-36	17	20.90±1.00b	20.71±0.40b	7.59±0.20b	15.15±0.40b	11.71±0.22	13.87±0.28	5.12±0.09	19.80±0.31b
37+	32	20.97±0.67b	20.41±0.27b	7.58±0.13b	15.02±0.26b	11.93±0.14	13.63±0.19	4.87±0.06	19.13±0.21b
Gender		**	***	***	***	-	-	*	***
Female	62	19.43±0.49	19.58±0.20	7.07±0.09	14.40±0.19	11.62±0.10	13.68±0.14	4.84±0.04	18.59±0.156
Male	38	20.97±0.67	20.52±0.27	7.58±0.13	15.35±0.26	11.74±0.14	13.69±0.19	5.00±0.06	19.75±0.211
Mean	100	20.20±0.41	20.05±0.16	7.33±0.08	14.87±0.16	11.68±0.09	13.68±0.11	4.93±0.03	19.17±0.131

-:No significant; *: P<0.05. **:P<0.01. ***:P<0.001

[abc]: means within with no comman supercripts are significantly different (P<0.05)

FULL TEXT SUBMISSIONS-9
THE CHEMICAL COMPOSITION AND NUTRITIVE VALUE OF ENSILED SUGAR BEET (*BETA VULGARIS L.*) LEAVES WITH VARIOUS ADDITIVES

İSMAİL ÜLGER[a], OSMAN KÜÇÜK[a]

[a]Erciyes University, Facultyof Veterinary Medicine, Kayseri, Turkey

ABSTRACT

The aim of current experiment was to determine the chemical composition of sugar beet leaves silages that ensiled separately (SBL) or with 25% maize crop (25M), 50% maize crop (50M), 5% alfalfa (SBA), 5% wheat straw (SBW), 4% molasses (SBM), 0.8% LAB inoculants (SBLAB) and 5% ground barley grain (SBB) (weight basis). The pH of the SBA group was significantly higher than the other groups while 25M group had the lowest pH values ($P<0.05$). While dry matter content was highest in the 50M group, lowest values were obtained from SBL and SBLAB groups ($P<0.05$). The crude oil contents were not significant among the groups ($P>0.05$). While highest crude protein content obtained from SBL group, the crude protein content of 50M group was the lowest ($P<0.05$). The crude ash values in the SBL group significantly higher than those of other groups, however, crude ash contents of 25M and 50M groups were lower than those of others ($P<0.05$). Also cell wall components of the treatment groups were significantly different among the groups and the highest ADF and NDF values obtained from SBW group while SBB group had the lowest ADF and NDF contents ($P<0.05$). As a conclusion, sugar beet leaves can be ensiled without additives also molasses can be useful as a silage additive up to 4% when sugar beet leaves is ensiled.

Keywords: Sugar Beet Leaves, Silage Additive, Silage Quality, Nutritive Value, Cell Wall Components

Corresponding author:
OSMAN KÜÇÜK
Erciyes University, Department of Animal Nutrition and Nutritional Diseases, 38039, Kayseri, Turkey.
okucuk@erciyes.edu.tr

INTRODUCTION

Sugar is obtained from only two crops: cane and beet. Cane sugar has been produced in large quantities in tropical regions of world and continues to dominate the word supply of sugar. In contrast, sugar beet is a relatively new crop, appearing in temperate regions in the 19th century and spreading widely only in the 20th century. Sugar beet is now grown in some 50 countries and provides about a quarter of the currently used sugar each year (Drycott, 2008).

The use of agricultural residuals is often a useful way of overcoming the shortage of animal feedstuffs. Agricultural residuals obtained after harvesting of vegetables, fruits, and crops. Crop residues are materials, which are generated after the crop has been harvested (Dixon & Egan, 1987). As a result of sugar beet production, some by-products occur in large quantities like pulp, molasses and leaves. While pulp and molasses are by-products of sugar extraction process, leaves are remained in fields after sugar beet harvest. At present, pulp and molasses are often used in animal feeding and also sugar beet leaves can be used as animal feed. But, because of high moisture, reservation ability of this by-product in natural form is not useful. Ensiling is one of the most suitable ways for conservation of such materials.

Therefore, the aim of this study was to determine the chemical composition and nutritive value of ensiled sugar beet leaves with various additives. For this purpose, alfalfa hay and wheat straw used for reduce high moisture content of leaves before ensiling. Also molasses and barley grain used as energy source and lactic acid bacteria (LAB) inoculants used for stimulate the fermentation during ensiling.

MATERIALS AND METHODS

Sugar beet leaves and maize were harvested from experimental fields of Erciyes University (Kayseri, Turkey). Molasses was provided from a sugar factory in Kayseri, Turkey. Alfalfa hay, wheat straw and barley grain were provided from Erciyes University Dairy Cattle Farm (Kayseri, Turkey). Also LAB inoculants provided from a commercial company (Sill-All, Alltech, UK). All material collected in the same day and brought to the lab for ensiling processing. Silage materials were stuffed in 1 liter of glass jars and tightly closed for ensiling for 60 days. Before ensiling the jars were placed upside down to drain water from the wholes on the cap of the jar for 24 hours. There were 8 treatment groups as follows: 1- 100% sugar beet leaves (SBL) as control, 2- 50% SBL and % 50 maize (M50), 3- 75% SBL and 25% maize (25M), 4- 95% SBL and 5% barley grain (SBB), 5- 95% SBL and 5% alfalfa hay (SBA), 6- 95% SBL and 5% wheat straw (SBW), 7- 96% SBL and 4% molasses (SBM), and 8- SBL and 0.8% LAB (SBLAB) inoculants. Each treatment contained 3 jars of the same material.

The jars opened after 60 days of fermentation. pH was measured right after opening. 25 gr of silages from each jar were sampled for pH measurement into 100 mL of distilled water. The content

was homogenized using a blender for 5 minutes. The homogenized sample was filtered through a double layer of cheese cloth and the solution was refiltered through a filter paper until it becomes totally clear. The filtrate was used to determine silage pH directly by using a digital pH meter.

Dry matter (DM), crude ash (CA), crude protein (CP), and ether extract (EE) were analyzed according to the methods described by AOAC (1996). ADF and NDF were analyzed by a method described by Goering & Van Soest (1970).

All data were analyzed using analysis of variance (ANOVA) and means were compared using Duncan's multiple range test and least significant difference test at P<0.05 if ANOVA showed significant effect (Statistical Package for the Social Sciences, version 14.0).

RESULTS AND DISCUSSION

Chemical compositions of the studied silages are given in Table 1.

Table 1.Chemical compositions of the experimental silages

Silage	pH	DM (%)	CP (% of DM)	CA (% of DM)	EE (% of DM)	ADF (% of DM)	NDF (% of DM)
SBL	4.05bc	17.25e	22.11a	14.23a	2.30ab	13.12c	30.23c
M25	3.82f	24.25b	12.01c	8.85c	2.39ab	16.77b	34.57b
SBLAB	3.95cde	16.38e	20.80a	13.59a	1.49d	12.20c	27.28c
SBM	3.90def	17.59e	20.52a	13.34a	1.65cd	11.80c	27.51c
SBB	3.98cd	22.28c	20.44a	10.15b	2.07bc	10.01c	28.09c
SBW	4.14ab	19.80d	17.99b	13.46a	1.68cd	21.00a	41.92a
SBA	4.22a	20.04d	21.45a	13.27a	2.23ab	18.94ab	32.66b
M50	3.88ef	28.42a	9.40d	8.45c	2.57a	20.62a	39.09a
S.E.M.	0.028	0.826	0.955	0.470	0.088	0.943	1.52
Sig.	**	**	**	**	**	**	**

Means within the same row with differing superscripts are significantly different. S.E.M.: standard error of mean.. Sig.: significance level, **: P<0.001, SBL: 100% sugar beet leaves, M25: 75% SBL and 25% maize, SBLAB: SBL and 0.8% LAB, SBM: 96% SBL and 4% molasses, SBB: 95% SBL and 5% barley grain, SBW: 95% SBL and 5% wheat straw, SBA: 95% SBL and 5% alfalfa hay, M50: 50% SBL and % 50 maize, DM: dry matter, CP: crude protein, CA: crude ash, EE: ether extract, ADF: acid detergent fiber, NDF: neutral detergent fiber.

As seen on Table 1, there was considerable variation between forages in terms of chemical composition. The pH of silages ranged from 3.82 to 4.22 with SBA having the highest pH value while M25 has lowest. Ranges of pH obtained from the silages at the present work were in agreement with the work from Mafakher *et al*. (2010) who reported that high-quality silage should have a pH ranging

from 3.80 to 4.30. DM contents of the silages was also different (P<0.05) being greatest with M50 silage (28.42%). According to Ergül (1993), a high-quality silage should have 20-35% dry matter and the DM content of the SBL silage (17.25%) is under these values so DM of SBL should be increased for yielding a good silage. Results of the present work suggest that, this can be achieved through adding 25-50% maize or a proper amount of dry forages such as straw or alfalfa hay.

The crude protein content of silages ranged from 9.40 (M50) to 22.11% (SBL) and decreased with additions. CP and DM values obtained in this study were in agreement with those reported by Can *et al*. (2003), who found the CP of 22.29 % of DM for SBL silages. Researcher (Can et al., 2003) also reported 12.80% ADF and 31.33% NDF content for SBL silages which was in accordance with current findings for ADF (13.12%) and NDF (30.23%) contents for SBL silages.

The ash content ranged from 8.45% to 14.23% with SBL having highest and these findings are agreement with those reported by Azman *et al.* (1997) for SBL silages. EE contents of experimental silages varied from 1.49% (SBLAB) to 2.57% (M50) while the EE content of SBL silages was 2.30% and addition of maize to SBL increased EE content.

CONCLUSIONS

Based on the results of this study it can be concluded that sugar beet leaves could be ensiled without addition but due to reduce high moisture content of SBL it could be useful that the addition of maize in a ratio of 25% to 50% before ensiling for fermentation and increase silage quality and also trials with animals are required to determine how these differences in silage mixtures affect animal production.

REFERENCES

AOAC (Association of Official Analytical Chemistry). (1996).*Officialmethods of analysis,* 16th edn.AOAC, Washington, DC, USA.

Azman, M. A., Balevi, T., Şeker, E., Gülşen, N. & Kurtoğlu, V. (1997). Şeker pancarı yaprağı ve silajının yem olarak değerlerinin belirlenmesi. *Hayvancılık Araştırma Dergisi***7**, 47-50.

Can, A., Denek, N. & Yazgan, K. (2003).Şeker pancarı yaprağına değişik katkı maddeleri ilavesinin silaj kalitesi ile in vitro kuru madde sindirilebilirlik düzeylerine etkisi. *Yüzüncü Yıl Üniversitesi Veteriner Fakültesi Dergisi* **14**, 26-29.

Dixon, R. M. & Egan, A. R. (1987). Strategies for utilizing fibrous crop residues as animal feeds. *7th AAFARR Workshop*, Chiang Mai, Thailand.

Draycott, A. P. (2008). *Sugar beet.*John Wiley & Sons Press.

Ergül, M. (1993).*Yemler bilgisi ve teknolojisi.*2nd edn. Izmir, Turkey: Ege University Press.

Goering, M. K. & Van Soest, P. J. (1970).*Forage fibre analysis.* Agricultural Handbook, No.379. USA: Agricultural Research, Department of Agriculture.

Mafakher, E., Meskarbashee, M., Hassibive, P. & Mashayekhi, M. R. (2010). Study of chemical composition and quality characteristics of corn, sunflower and corn-sunflower mixture silages. *Asian Journal of Animal and Veterinary Advances***5**, 175-179.

ICAVST

INTERNATIONAL CONGRESS ON ADVANCES
IN VETERINARY SCIENCES & TECHNICS

AKSARAY ÜNİVERSİTESİ 2006

UNIVERSITAS UNIVERZITET UNIVERZITET STUDIORUM SARAJEVOENSIS SARAJEVU

EUROPE CONGRESS
www.europecongress.org

TURKISH AIRLINES