BOOK OF ABSTRACTS

INTERNATIONAL SCIENTIFIC CONFERENCE:

"TRADITION AND MODERNITY IN VETERINARY MEDICINE"

DEDICATED TO THE 30 ANNIVERSARY OF THE FACULTY OF VETERINARY MEDICINE, SOFIA, BULGARIA

2024

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OFFICIAL PROGRAM OF THE CONFERENCE

Петък / Friday (26.04.2024)	
12.00	ОТПЪТУВАНЕ НА АВТОБУС ОТ ЛТУ ЗА ЮНДОЛА / DEPARTURE BY BUS FROM UNIVERSITY OF FORESTRY CAMPUS TO YUNDOLA
14.30-16.30	НАСТАНЯВАНЕ И РЕГИСТРАЦИЯ / REGISTRATION OF PARTICIPANTS
17:00 – 17:15	**ОТКРИВАНЕ НА КОНФЕРЕНЦИЯТА / OPEN CEREMONY OF THE CONFERENCE** ОТКРИВАНЕ НА КОНФЕРЕНЦИЯТА ОТ ЗАМ-ДЕКАНА ПО НИД НА ФВМ ПРИ ЛТУ И ПРИВЕТСТВИЕ КЪМ УЧАСТНИЦИТЕ ОТ РЕКТОРА НА ЛТУ И ДЕКАНА НА ФВМ, КАКТО И ОТ ИНСТИТУЦИИ И ОРГАНИЗАЦИИ УЧАСТВАЩИ В КОНФЕРЕНЦИЯТА / OPENING OF THE CONFERENCE BY THE VICE-DEAN FOR RESEARCH OF FVM AT UF AND WELCOME TO THE PARTICIPANTS FROM THE RECTOR OF UF AND DEAN OF FVM, AS WELL AS FROM INSTITUTIONS AND ORGANIZATIONS TAKING PART OF THE CONFERENCE
17:15 – 19:00	**ПЛЕНАРНИ ДОКЛАДИ / PLENARY REPORTS** ***PLENARY REPORT*** LET ANIMALS BREATHE EASIER IN FOREST FIRES - Halil Biricik ***PLENARY REPORT*** HUMANE INNOVATIONS AND REPLACEMENT OF ANIMAL EXPERIMENTS IN VETERINARY EDUCATION - Nick Jukes
20:30	**ВЕЧЕРЯ/DINNER**

Събота / Saturday (27.04.2024)	
8:00 – 9:00	**ЗАКУСКА/BREAKFAST**
SESSION ***NON-INFECTIOUS PATHOLOGY*** ***MORPHOLOGY, ECOLOGY AND LIVESTOCK BREEDING*** ***Hall №1*** ***Chairman:*** Assoc. Prof. Iliyan Manev, PhD Chief Assist. Prof. Konstantin Aminkov, PhD ***Secretary***: Assist. Prof. I. Georgiev, PhD; Assist. Prof. P. Hristova, PhD	
ORAL PRESENTATIONS	
09:00 – 09:15	***O1MELB1*** TREATMENT OF A DAMAGED BEAK IN AN EMU (DROMAIUS NOVAEHOLLANDIAE) - Andrey Kurtenkov
09:15 – 09:30	***O1MELB2*** THE FOUNDATION OF THE WILDLIFE REHABILITATION AND BREEDING CENTRE OF GREEN BALKANS - Rusko Petrov et al.
09:30 – 09:45	***O1MELB3*** HISTOLOGICAL STUDY ON THE BROWN BEAR (*Ursus arctos* L.) SPLEEN – Iliyan Georgiev et al
09:45 – 10:00	***O2NIP1*** EVALUATION OF SERUM SYMMETRIC DIMETHYLARGININE (SDMA) IN CLINICALLY HEALTHY GERIATRIC HORSES - Adelina Karastoeva & Sasho Sabev

10:00 – 10:15	***O2NIP2*** MANAGEMENT OF SUBCUTANEOUS ABSCESSES IN CAPTIVE-BRED LIZARDS – A CLINICAL SERIES - Seven Mustafa & Iliana Ruzhanova-Gospodinova
10:15 – 10:30	***O2NIP3*** THREE-DIMENSIONAL COMPUTED TOMOGRAPHY RECONSTRUCTION OF A MULTILOBULAR TUMOR OF ZYGOMATIC ARCH IN A DOG - Konstantin Aminkov & Bogdan Aminkov
10:30 – 11:00	**КАФЕ ПАУЗА (COFFEE BREAK)**
11:15 – 11:30	***O2NIP4*** EFFECT OF HERB EXTRACTS ON KINEMATIC PARAMETERS OF RAM SPERMATOZOA DURING SHORT-TERM STORAGE OF SEMEN - Tsveta Georgieva et al.
11:30 – 11:45	***O2NIP5*** THE SIZE AND ASPECT OF CORPUS LUTEUM IN CORRELATION WITH PROGESTERONE LEVEL IN THE FIRST PART OF THE PREGNANCY IN DAIRY COW - Nicolae Tiberiu Constantin et al.
11:45 – 12:00	***O2NIP6*** ORBITAL FRACTURE IN A STRAY DOG – DIAGNOSIS AND SURGICAL TREATMENT – A CLINICAL CASE - Georgi Marinov & Evdoxia Magkrioti
12:00 – 12:15	***O2NIP7*** ACUTE KIDNEY INJURY IN LLAMA (*LAMA GLAMA*) INDUCED BY OLEANDER INTOXICATION - Iliyan Manev &Victoria Marincheva
POSTER SESSION	
12:15 – 12:20	***P1MELB1*** ASPECTS REGARDING THE MORPHOLOGY AND ARTERIAL VASCULARIZATION OF THE POST-DIAPHRAGMATIC DIGESTIVE SYSTEM IN THE ROE DEER - A CASE STUDY - Sorina-Andreea Mihai et al.
12:20 – 12:25	***P1MELB2*** ANIMAL CELL CULTURES AS SUITABLE EXPERIMENTAL MODELS IN SEARCHING OF NEW ANTITUMOR AGENTS AGAINST BRAIN TUMORS - Tanya Zhivkova et al.
12:25 – 12:30	***P1MELB3*** DETERMINATION OF THE CHEMICAL AND MINERAL COMPOSITION OF APPLE POMACE IN RELATION TO ITS UTILIZATION AS AN INNOVATIVE FEED RAW MATERIAL - Hristina Neshovska
13:00 – 14:00	***ОБЯД/LUNCH***
14:00 – 14:05	***P1MELB4*** MICROBIOLOGICAL SAFETY AND CHEMICAL COMPOSITION OF BLACK SOLDIER FLY LARVAE (BSFL) MEAL - Hristina Neshovska & Veselin Kirov
14:05 – 14:10	***P1MELB5*** HISTOLOGICAL STRUCTURE AND PHYSICO-CHEMICAL INDICATORS OF FROZEN CROCODILE MEAT - Deyan Stratev et al.
14:10 – 14:15	***P1MELB6*** *IN VIVO* EXPERIMENTAL MODELS USED IN FIGHT WITH GLIOBLASTOMA MULTIFORME - Lora Dyakova et al.
14:15 – 14:20	***P1MELB7*** EAST BALKANS SWINE – PAST, PRESENT AND FUTURE - Angel Mavrovski et al.
14:20 – 14:25	***P1MELB8*** THE LARYNX OF THE DOG – MORPHOMETRIC AND ACOUSTIC CHARACTERISTICS IN DIFFERENT BREED - Pavlina Hristova & Iliana Ruzhanova-Gospodinova
14:25 – 14:30	***P2NIP1*** A RARE CASE OF COMPLICATED OVARIAN GRANULOSA CELL TUMOUR IN A BITCH - Manol Karadaev et al.

14:30 – 14:35	***P2NIP2*** EFFECT OF DIETARY HIGH-PROTEIN SUNFLOWER MEAL ON SOME BLOOD PARAMETERS IN FEEDLOT CALVES - Rumen Binev et al.
14:35 – 14:40	***P2NIP3*** APPLICATION OF COLOUR DOPPLER ULTRASONOGRAPHY FOR EXAMINATION OF THE OVARIES IN COWS – A REVIEW - Svetoslav Postolov & Ivan Fasulkov
14:40 – 14:45	***P2NIP4*** CLINICOPATHOLOGICAL STUDIES IN A CASE OF AURICULAR SQUAMOUS CELL CARCINOMA IN AUTOCHTHONOUS KARAKACHAN SHEEP - Daniel Gadzhakov et al.
14:45 – 14:50	***P2NIP5*** INFLUENCE OF THE PROBIOTIC "LACTINA" ON SOME CLINICAL-CHEMICAL INDICATORS AND ON SUPEROXIDATION IN MALE AND FEMALE ADULT PHEASANTS - Tandzhu Mehmedov & Krasimira Genova
14:50 – 14:55	***P2NIP6*** HEPATIC PRENEOPLASIA INDUCED BY N-NITROSODIMETHYLAMINE AND N-NITROSODIETHYLAMINE IN TURKEYS EMBRYOS - Branimir Nikolov
14:55 – 15:00	***P2NIP7*** THE INFLUENCE OF AGEON THE PARAMETERS OF EJACULATE IN BOARS - Igor Zdraveski et al.
15:00 – 15:05	***P2NIP8*** INVASIVE FIBROSARCOMA IN A DOG – A CLINICAL CASE - Ismet Kalkanov & Vladi Nedev
15:05 – 15:10	***P2NIP9*** A CASE OF FELINE OROPHARINGEAL ADENOSQUAMOUS CARCINOMA - Yoana Kirilova et al.
15:10 – 15:15	***P2NIP10*** LINEAR CORRELATIONS OF HEART MEASUREMENTS IN DOGS WITH DEGENERATIVE MITRAL VALVE DISEASE DEPENDING FROM THE STAGE OF THE DISEASE - Atanas Pankov
15:15 – 15:20	***P2NIP11*** DESIGNING PROGRAMMABLE DRUG DELIVERY NANOSYSTEMS AND PHOTOSWITCHABLE NANOMACHINES FOR CANCER THERANOSTICS - Alexandre Loukanov et al.
15:30 – 16:00	**КАФЕ ПАУЗА (COFFEE BREAK)**
SESSION ***INFECTIOUS PATHOLOGY*** ***Hall №3*** ***Chairman:*** Assoc. Prof. Georgi Stoimenov, PhD Chief Assist. Prof. Ralitsa Bankova, PhD ***Secretary***: Assist. Prof. Ts. Georgieva; Assist. Prof. S. Mustafa, PhD	
ORAL PRESENTATIONS	
09:00 - 09:15	***O3IP1*** *IN VITRO* ANTIMICROBIAL ACTIVITY OF DOGWOOD FRUIT PURES (*Cornus mas* L.) - Teodora P. Popova & Ignat Ignatov
09:15 – 09:30	***O3IP2*** A COMPARATIVE ANALYSIS BETWEEN THE IDEXX SNAP 4DX PLUS RAPID ANTIGEN TEST, THE MODIFIED KNOTT METHOD AND THE CONVENTIONAL MULTIPLEX PCR FOR THE DIAGNOSIS OF DIROFILARIA IMMITIS - Radoslav Rafailov & Simona Tchakarova
09:30 – 09:45	***O3IP3*** CURRENT SURVEILLANCE MODELS OF VIRAL HEMORRHAGIC SEPTICEMIA AND INFECTIOUS PANCREATIC NECROSIS IN CULTURED FISH IN BULGARIA - Ekaterina Mileva
09:45 – 10:00	***O3IP4*** DYNAMICS AND DISTRIBUTION OF NOTIFIABLE FISH DISEASES AT THE BALKAN COUNTRIES OF THE MIDDLE AND LOW DANUBE WATERSHED DURING 2014-2023 YEARS - Svetlina Kirova & Ekaterina Mileva

10:00 – 10:15	***O3IP5*** PREVALENCE OF SHIGA TOXIN-PRODUCING *ESCHERICHIA COLI* (STEC) IN FOODS IN BULGARIA - Eva Gyurova
10:15 – 10:30	***O3IP6*** THE PRESENCE OF *FASCIOLA HEPATICA* AND *CALICOPHORON DAUBNEYI* IN FIELD-COLLECTED *GALBA TRUNCATULA* SNAILS FROM BULGARIA - Boyko Neov*, Katya Georgieva
10:30 – 11:00	**КАФЕ ПАУЗА (COFFEE BREAK)**
11:15 – 11:30	***O3IP7*** HYGIENE INDICATORS OF PORK MEAT TREATED WITH ELECTROACTIVATED WATER - Stanislav Radanski et al.
11:30 – 11:45	***O3IP8*** PREVALENCE OF NOROVIRUSES, HEPATITIS A AND HEPATITIS E VIRUSES IN MUSSELS FROM BULGARIAN BLACK SEA COAST - Gergana Krumova-Valcheva et al.
11:45 – 12:00	***O3IP9*** THE CHALLENGES OF HEPATITIS E VIRUS - Radostina Alexandrova et al.
POSTER SESSION	
12:00 – 12:05	***P3IP1*** AN OVERVIEW REGARDING PHYTOBIOTICS EFFECTS ON AVIAN ENTERIC DISEASES - Petronela Mihaela Rosu et al.
12:05 – 12:10	***P3IP2*** MEAT QUALITY IN BEEF CATTLE FED WITH BULGARIAN HIGH-PROTEIN SUNFLOWER MEAL - Desislava Bangieva et al.
12:10 – 12:15	***P3IP3*** OVERVIEW OF EUROPEAN AND NATIONAL LEGISLATION RELATED TO OFFICIAL CONTROLS OF RAW COW'S MILK - Pravda Yordanova & Veselin Kirov
12:15 – 12:20	***P3IP4*** DETECTION OF COXIELLA BURNETII DNA IN MILK AND TISSUE SAMPLES FROM CATTLE, SHEEP AND GOATS USING DIFFERENT PROTOCOLS OF CONVENTIONAL PCR - Keytlin Todorova & Petia Genova-Kalou
12:20 – 12:25	***P3IP5*** HEAVY METAL DETERMINATION IN BEES FROM BULGARIA - Boyko Neov & Katya Georgieva
12:25 – 12:30	***P3IP6*** ABSENCE OF HEPATITIS E VIRUS CIRCULATION AMONG EUROPEAN BROWN HARE POPULATION DURING 2015 IN TWO BULGARIAN DISTRICT - Georgi Stoimenov et al.
13:00 – 14:00	***ОБЯД/LUNCH***
14:00 – 14:05	***P3IP7*** SEROPREVALENCE AGAINST CANINE DISTEMPER VIRUS IN VACCINATED SHELTER DOGS FROM BULGARIA - Iliyan Manev & Victoria Marincheva
14:05 – 14:10	***P3IP8*** EFFECT OF PROPOLIS ON REPLICATION OF BOVINE ALPHAHERPESVIRUS 1 (BoHV-1) *IN VITRO* - Krasimira Genova et al.
14:10 – 14:15	***P3IP9*** INFLUENZA D VIRUS ANALYSIS OF THE PREVALENCE OF IDV IN DOMESTIC AND WILD ANIMALS WORLDWIDE - Gabriela Goujgoulova et al.
15:30 – 16:00	**КАФЕ ПАУЗА (COFFEE BREAK)**
SESSION ***STUDENT RESEARCH*** ***Yundola Hall*** ***Chairman***: Assoc. Prof. Toni Todorov, PhD Chief Assist. Prof. Petar Stamberov, PhD ***Secretary***: Assist. Prof. S. Ivanov; Assist. Prof. A. Mladenova	
ORAL PRESENTATIONS	
09:00 - 09:15	***O4S1*** RETAINED PLACENTA IN A COW – A CLINICAL CASE - Tea Petkova & Tsveta Georgieva

09:15 - 09:30	***O4S2*** CANINE VECTOR-BORNE DISEASES IN GREECE - Efthymia Stylianidou & Ilia Tsachev
09:30 - 09:45	***O4S3*** OTITIS IN THE DOG – AETIOLOGICAL AGENTS AND THERAPY - Mina Samsieva et al.
09:45 - 10:00	***O4S4*** ODONTOCLASTIC RESORPTIVE LESIONS IN A CAT WITH INFECTIOUS PERITONITIS AND CALICIVIRUS INFECTION – A CASE REPORT - Mira Ivanova & Seven Mustafa
10:00 – 10.15	***O4S5*** REGULATORY REQUIREMENTS CONCERNING THE LABELLING AND PRESENTATION OF PET FOOD - Kristina Koteva et al.
10:15 – 10:30	***O4S6*** ANALYSIS OF EUROPEAN AND NATIONAL LEGISLATION RELATED TO MALE CHICK CULLING - Mira Naydenova et al.
10:30 – 11:00	**КАФЕ ПАУЗА (COFFEE BREAK)**
11:00 – 11:15	Микробиоми и дисбиоза – тактика за менажиране, диагноза и лечение **NESTLE PURINA /** Microbiomes and Dysbiosis – Management Tactics, Diagnosis and Treatment **NESTLE PURINA**
11:15 – 11:30	***O4S7*** INVASIVE ORAL SQUAMOUS CELL CARCINOMA IN A DOMESTIC FOUR-TOED HEDGEHOG (*ATELERIX ALBIVENTRIS*) - Mariya Braykova et al.
11:30 – 11:45	***O4S8*** ADVANCED SURGICAL MANAGEMENT WITH POLYPROPYLENE MESH OF RECURRENT PERINEAL HERNIA IN CANINES - Ivan Panayotov &Nadya Zlateva-Panayotova
11:45 – 12:00	***O4S9*** A CASE OF HYPOCALCEMIA IN *PSITTACUS ERITHACUS* (JACO), FRACTURE AND LYSIS OF THE TIBIOTARSAL BONE ACCOMPANIED BY STAPHYLOCOCCAL INFECTION - Anelia Mladenova et la.
12:00 – 12:15	***O4S10*** ADENOMA OF PITUITARY GLAND IN FANCY RATS - Silvi Vladova et al.
12:15 – 12:30	***O4S11*** BOVINE DYSTOCIA CAUSED BY CARPAL AND SHOULDER FLEXION – A CASE REPORT - Aleksandar Apostolov et al.
12:30 – 13:00	***PLENARY REPORT 3*** CURRENT TRENDS IN ANIMAL-FREE METHODS FOR REGULATORY AND EDUCATIONAL PURPOSES - Dilyana Filipova
13:00 – 14:00	***ОБЯД/LUNCH***
14:00 – 14:15	***O4S12*** ACROSCOPIC AND ANATOMICAL IMAGING FEATURES IN THE MORPHOLOGY OF THE BEAR KIDNEY - Yoanna Chonova et al.
14:15 – 14:30	***O4S13*** COMPARATIVE MORPHOLOGICAL STUDY OF THE INTERNAL AND CARDIOVASCULAR ORGANS OF TWO SPECIES OF MONKEYS AND HUMAN – CASE REPORT - Stefani Ivanova et al
14:30 – 14:45	***O4S14*** APPLICATION OF ELECTROACTIVATED AQUEOUS SOLUTIONS IN THE MEAT INDUSTRY - Stanislav Radanski et al.
14:45 – 15:00	***O4S15*** A CASE OF CONGENITAL FLEXOR DEFORMITIES OF THE THORACIC LIMBS IN A 3-YEAR-OLD HORSE - Mina-Maria Marinova et al
15:00 – 15:15	***O4S16*** ROBOTICS IN VETERINARY SURGERY - Georgi Marinov et al.
15:15 – 15:30	***O4S17*** A REVIEW ON MANAGING RABBIT'S MALOCCLUSION – CHALLENGES AND STRATEGIES - Elizabeth Milusheva & Seven Mustafa

15:30 – 16:00	**КАФЕ ПАУЗА (COFFEE BREAK)**
16:00 – 16:15	За по-добър контрол на сърбежа и алергичния дерматит **SAMBS** / For better control of itching and allergic dermatitis **SAMBS**
16:15 – 16:30	Хранителни решения за животни с онкологични заболявания – нова възможност **SAMBS** / Nutritional solutions for animals with oncological diseases - a new opportunity **SAMBS**
POSTER SESSION	
16:30 – 16:35	***P4S1*** INVESTIGATION OF GENETIC AND ANTIMICROBIAL RESISTANCE DIVERSITY OF VETERINARY AND FOOD *SALMONELLA* TYPHIMURIUM ISOLATES IN BULGARIA - Gergana Mateva et al**.**
16:35 – 16:40	***P4S2*** GLYCAEMIA IN DOGS WITH DIFFERENT FORMS OF ACUTE PANCREATITIS - Lazarin Lazarov et al.
16:40 – 16:45	***P4S3*** CHANGES IN LIPID AND MINERAL PROFILES IN COWS WITH SUBCLINICAL AND CLINICAL KETOSIS - Vania Marutsova et al.
16:45 – 16:50	Longevity with Eukanuba – **BLUE SKY COMMERCE**
16:50 – 16:55	***P4S4*** MULTIPARAMETRIC STUDY OF THE QUALITY OF RAM SPERM STORED IN DIFFERENT EXTENDERS AND TEMPERATURE REGIMES - Madlena Andreeva et al.
16:55 – 17:00	***P4S5*** OXALATE CRYSTALLURIA – EARLY INDICATOR FOR ACUTE ETHYLENE GLYCOL INTOXICATION IN RABBITS - Blagovesta Slavcheva & Tsanko Hristov
17:00 – 17:05	***P4S6*** 3D PRINTED PROSTHETICS IN VETERINARY MEDICINE - Georgi Marinov et al.
17:30 – 18:00	**ЗАКЛЮЧИТЕЛНО ЗАСЕДАНИЕ НА ПРОГРАМНИЯ КОМИТЕТ/CONCLUSION PROCEEDING OF PROGRAM COMMITTEE**
20:30	**ГАЛА ВЕЧЕРЯ И ЦЕРЕМОНИЯ ПО НАГРАЖДАВАНЕ НА УЧАСТНИЦИТЕ / GALA DINNER AND PARTICIPANTS AWARDING CEREMONY**

Неделя / Sunday (28.04.2024)	
8:30 – 9:30	**ЗАКУСКА/BREAKFAST**
10:00	СОЦИАЛНА ПРОГРАМА С ПОСЕЩЕНИЕ НА РИЛСКИ МАНАСТИР / SOCIAL PROGRAM - VISIT OF RILA MONASTERY ОТПЪТУВАНЕ НА АВТОБУСА ЗА СОФИЯ / DEPARTURE BY BUS TO SOFIA

PLENARY SESSION

PLENARY REPORT 1

LET ANIMALS BREATHE EASIER IN FOREST FIRES

Halil Selçuk Biricik

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ABSTRACT

The fire departments receive many calls to rescue wild animals such as tortoises caught in forest fires. The firemen often face difficulties during these rescue operations. They make the first response in forest and house fires. Like other disasters, firefighters give priority to human rescue activities in case of fires, and animal rescue activities are overlooked. High temperatures, toxic effects of smoke, and oxygen depletion can cause mortality or impairment of animals. If Oxygen masks is used in animals under forest fires, all the oxygen is going into their lungs and make a positive contribution to animal health as first aid.

The target group of this study was firefighters working in the cities of Aegean region in Türkiye. Awareness activities, seminars and events to firefighters to increase animal rescue capacities of firefighters were realized. The main activity was to encourage firefighters to use Oxygen masks for animals, unconscious due to smoke or have breathing difficulties during forest or house fires. These masks should be available in all Fire Brigades. In recent years, especially as a result of the forest fires, many large and small animal barns were burned and animals such as cows and sheep perished in Türkiye. With the widespread use of Oxygen masks in fires, it will make a positive contribution to animal welfare at the regional level. Current study will contribute to animal rescue strategies in case of fires and other emergencies in Türkiye.

Keywords: Animal, fire, Oxygen mask.

PLENARY REPORT 2

CURRENT TRENDS IN ANIMAL-FREE METHODS FOR REGULATORY AND EDUCATIONAL PURPOSES

Dilyana Filipova

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ABSTRACT

In the last 100 years, animal experiments have been extensively used for both research and educational purposes in biomedical sciences. Simultaneously, there has been a significant societal backlash against animal testing, as well as a growing scientific concern about the poor predictability and reliability of animal-derived data. As a result, various non-animal methods (NAMs) for research and education have been developed and are becoming increasingly robust and physiologically relevant. In recent years, NAMs have gained a significant traction in the pharmaceutical industry, research, as well as for regulatory and educational purposes.

In this presentation, I will outline some important developments in the regulatory landscape concerning the increased application of NAMs worldwide. I will also talk about recent trends of moving towards animal-free education and how we, Doctors Against Animal Experiments, assist universities in transitioning from animal-based to animal-free education.

Keywords: animal experiments, non-animal methods, animal-free education.

PLENARY REPORT 3

HUMANE INNOVATIONS AND REPLACEMENT OF ANIMAL EXPERIMENTS IN VETERINARY EDUCATION

Nick Jukes

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ABSTRACT

The design of the curriculum for veterinary education and training involves choices about the methods employed to meet teaching objectives. Ensuring that these tools and approaches are the most appropriate requires clarity on teaching objectives and an awareness of developments in technology, educational practice and ethics. Animal experimentation and the dissection of purpose-killed animals continue to be employed in some practical classes. However, humane and innovative methods – 'alternatives' – are now widely available and are increasingly being implemented to achieve replacement and to enhance the acquisition of knowledge and skills. This transition reflects a growing commitment to best practice, a recognition of the advantages of alternatives, and an appreciation of the need for efficient methods that can meet the demand for competence upon graduation. In this presentation, the humane methods are explored, with a focus on teaching objectives and skill sets within the trajectory of a veterinary degree. Case studies of the development and implementation of these humane innovations are provided from university departments and producers at the forefront of progressive change in veterinary education. This exemplary practice is illustrated using clips from the new InterNICHE documentary film episode 'Surgery and the SynDaver Canine' that covers advanced surgery training. Through interviews, demos and student labs, the film demonstrates not only the feasibility of full replacement of harmful animal use, but the pedagogical advantages of non-animal methods and extended clinical learning opportunities that include technical competence as well as critical thinking and emotional and ethical literacy. The impact of this curricular transformation is described for students, educators, the animals, the veterinary profession, and society itself. The presentation will show that such tools and approaches are often no longer considered 'alternative' but are becoming the norm.

Keywords: animal experiments, non-animal methods, humane innovative methods, alternatives.

SESSION
MORPHOLOGY, ECOLOGY AND LIVESTOCK BREEDING

O1MELB1
TREATMENT OF A DAMAGED BEAK IN AN EMU (*DROMAIUS NOVAEHOLLANDIAE*)

Andrey Kurtenkov

Faculty of Veterinary Medicine, University of Forestry, Sofia, Bulgaria

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ABSTRACT

In an 11-month-old female pet emu, the owner notices a small hole in the upper beak, possibly the result of a traumatic injury. The examination also revealed a small crack near the hole. The wounds were treated and a diet was started to help the beak heal. Over the following months, a slight shift of the upper beak to the side was gradually observed, possibly due to mild pain as a result of the cleft. Half a year later, the hole and the crack were glued twice with epoxy resin, which fell off after 2-3 weeks without helping healing. Then they were filled with photopolymer, which significantly improved the condition of the beak. The hole began to heal and the cleft stopped interfering with the bird's feeding and the upper beak began to return to its normal position.

Keywords: emu, beak, epoxy resin, photopolymer.

O1MELB2
THE FOUNDATION OF THE WILDLIFE REHABILITATION AND BREEDING CENTRE OF GREEN BALKANS

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ABSTRACT

Green Balkans is a leading organisation in the field of the conservation of rare species and habitats in Bulgaria. The organisation was established in 1988 making it Bulgaria's oldest nature conservation NGO. For its 36 years of existence, Green Balkans has won recognition from international and national institutions, authorities and donors as a desirable partner and highly reputable and competent organisation. In 1992, the Wildlife Rehabilitation and Breeding Centre (WRBC) – Green Balkans was established as part of the Green Balkans Federation of NGOs in Stara Zagora, Bulgaria. It was recognised as an official rescue and rehabilitation center with order № 232/14.03.2003 of the Minister of Environment and Water. Its activity is regulated in Chapters III and IV of the Bulgarian Biodiversity Act. The WRBC is an official CITES (Convention on International Trade in Endangered Species of Fauna and Flora) center and it is responsible for the care of wild animals involved in illegal trading in Bulgaria. Annually, around 2500 wild animals (mostly raptors) are admitted in the center, and 40-60% of them are successfully released back into the wild. The center often treats species with high conservation status such as eagles, vultures, falcons, herons, egrets and pelicans. A total of 27,030 animals have passed through the WRBC for the period between 1995 and 2023.

The center focuses on rehabilitation of injured wildlife and specialises in the conservation of endangered raptors. Its main activities include: treatment and rehabilitation of distressed wild animals; captive breeding endangered birds of prey - some with permanent disabilities which cannot be returned in the wild; development of reintroduction and restocking programmes for the following species: Bearded Vulture, Cinereous Vulture, Griffon Vulture, Egyptian Vulture, Imperial Eagle, Saker Falcon and Lesser Kestrel; sheltering confiscated wild animals - object of illegal trade; educational activities and youth environmental education programs.

Keywords: wildlife rehabilitation, captive breeding, bird conservation, birds of prey, avian medicine.

O1MELB3

HISTOLOGICAL STUDY ON THE BROWN BEAR (*URSUS ARCTOS* L.) SPLEEN

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ABSTRACT

The aim of the present study is to investigate the histological structure of the spleen of the brown bear (*Ursus arctos* L.) to establish the open type of blood circulation. The spleen of one bear with an unfavorable diagnosis and without pathological changes of the organ was examined. The obtained results of the micromorphological study were compared with the spleens of reservoir and open circulation type in other animals. Through the performed conventional histological examination, relaxation, overflow and permeability of the splenic capillary vessels with blood and precipitates from erythrocyte masses were observed. The conducted study contributes to clarifying the histology of the spleen in the brown bear, which is relevant for the pathomorphological changes of the parenchyma and disorders in its microcirculation in wild carnivores.

Keywords: spleen, bear, histology, *vas capillare terminale*, open type of blood supply.

P1MELB1

ASPECTS REGARDING THE MORPHOLOGY AND ARTERIAL VASCULARIZATION OF THE POST-DIAPHRAGMATIC DIGESTIVE SYSTEM IN THE ROE DEER - A CASE STUDY

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ABSTRACT

The roe deer (*Capreolus capreolus*) is a medium-sized mammal belonging to the *Cervidae* family. Numerous studies have been conducted on the ruminant's digestive system, but more research is needed on *Cervidae* species. The existing studies focus more on their habitat, biology, feeding, reproduction, and external morphology and less on internal anatomical features.

In cases of road accidents, poaching, trauma or abdominal hemorrhages involving roe deer, the veterinarian has to intervene, sometimes even surgically. The main objective of the research was to identify the main anatomical differences between domestic species and the roe deer. The study emphasizes the differences in the digestive system between domestic ruminants and roe deer and the unique characteristics of the arterial vascularization of *Capreolus capreolus.*

Keywords: digestive system, roe-deer, celiac artery, gastric compartments.

P1MELB2

ANIMAL CELL CULTURES AS SUITABLE EXPERIMENTAL MODELS IN SEARCHING OF NEW ANTITUMOR AGENTS AGAINST BRAIN TUMORS

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ABSTRACT

Glioblastoma is one of the most common and aggressive primary brain tumors in human as well as in animals, especially dogs. That`s why brain cancer cell lines of human and animal origin are widely used in both *in vitro* and *in vivo* glioblastoma research and serve as suitable tool to understand the molecular features of glioma, to identify new therapeutic targets and to study the potential effectiveness of new treatment strategies. The available glioblastoma cell lines include human U87, U251, A172, among others and animal, established mainly from mouse and rat. To develop more representative preclinical animal model, these cells are also xenotransplanted into immunodeficient mice. Permanent cell lines have advantages such as cost effectiveness, easy application and high growth rates. On the other hand, primary cell cultures, derived from brain cancers better reflect the nature and clinical characteristics of the original patient' tumors.

ACKNOWLEDGEMENTS: GrantNo КП-06-М61/3 from 13.12.2022, National Science Fund, Bulgarian Ministry of Education and Science.

Key words: glioblastoma, in vitro experimental models, human and animal cell lines.

P1MELB3

DETERMINATION OF THE CHEMICAL AND MINERAL COMPOSITION OF APPLE POMACE IN RELATION TO ITS UTILIZATION AS AN INNOVATIVE FEED RAW MATERIAL

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ABSTRACT

Globally, the food industry is one of the largest and fastest-growing industries. However, food production is also associated with the generation of tons of waste, which has a serious negative impact on the environment. Almost 50 % of fruits used for freshly squeezed juice production become waste. Animal husbandry and especially feed raw materials cultivation also has a serious ecological footprint

on nature. The inclusion of these waste products in the feeding of farm animals could help to reduce economic losses, having a positive environmental effect as well.

In this regard, the aim of the present study was to determine the nutritional and mineral composition of waste products (pomaces) obtained from the production of freshly squeezed apple juice from two different apple varieties - red apple (*Malus domestica* 'Red Delicious') and green apple (*Malus* ' Granny Smith'). In all samples, the following indicators were determined: dry matter (DM), moisture, crude protein (CP), crude fiber (CF), crude ash (CA), ether extract (EE), manganese (Mn), zinc (Zn), magnesium (Mg), calcium (Ca), phosphorus (P), sodium (Na), potassium (K), lead (Pb) and cadmium (Cd).

Keywords: apple pomace (AP), chemical composition, mineral composition, red apple (*Malus domestica* 'Red Delicious'), green apple *(Malus* 'Granny Smith'*).*

P1MELB4

MICROBIOLOGICAL SAFETY AND CHEMICAL COMPOSITION OF BLACK SOLDIER FLY LARVAE (BSFL) MEAL

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ABSTRACT

In the past few years, the growing food crisis has increased the demand for alternative foods and feeds with minimal negative environmental impact. To a large extent, insects and their products meet this demand. At the same time, insect farming is gaining more and more popularity as part of the food industry for the production of high-quality feed materials for animals. In the European Union, one of the permitted and most commonly used insect species is the Black Soldier Fly (BSF) (*Hermetia illucens*). The final products obtained from BSF larvae are a source of essential nutrients and successfully replace traditional feeds. Concerning the quality and safety of feed raw materials, in the present study the chemical composition and some microbiological parameters were determined in different batches of BSF insect meal. The results showed that all the tested batches of BSFL meal were excellent protein sources. The presence of *Enterobacteriaceae, Salmonella spp.,* and *Clostridium perfringens* was not found in any of the examined samples.

Keywords: Black solder fly (BSF), *Hermetia illucens*, larvae, insect meal, chemical composition, microorganisms.

P1MELB5

HISTOLOGICAL STRUCTURE AND PHYSICO-CHEMICAL INDICATORS OF FROZEN CROCODILE MEAT

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ABSTRACT

The objective of the present study was to determine the changes in the histological structure and some physico-chemical indicators of frozen crocodile meat. Vacuum packs of frozen crocodile

meat stored at -18ºC for 18 months were purchased from retail stores. Histological sections were stained by hematoxylin-eosin and Masson's trichrome staining methods. Physico-chemical indicators and fatty acid composition were determined by standard methods. The histological study proved clear morphological changes in the structural components of the muscles. Physico-chemical analysis showed 21.90% protein content, 6.09% lipid content, 69.56% water content and 1.09% ash content. The largest was the amount of monounsaturated fatty acids (47.45%), followed by saturated (36.39%) and polyunsaturated fatty acids (16.53%). More studies on the histological structure and physico-chemical parameters of other members of the order Crocodilya are needed to gather data on the nutritional value and biological wholesomeness of the meat from these species.

Keywords: crocodile, frozen meat, morphological characteristics, physico-chemical indicators, fatty acid composition.

P1MELB6

IN VIVO EXPERIMENTAL MODELS USED IN FIGHT WITH GLIOBLASTOMA MULTIFORME

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ABSTRACT

Glioblastoma multiforme (GBM) is the most common and aggressive form of brain tumors. Despite the resistance to conventional therapies and bad prognosis of this type of tumors the search for therapeutic tools that increase the survival rate of the patients has become the main goal in GBM research. Therefore, the use of an appropriate experimental design can help to understand the tumor behavior (host-tumour interactions, tumor infiltration and angiogenesis, tumor heterogenity, etc.) and to find effective antitumor agents with low side and toxic effects. Different in vivo models have long been used to study tumor biology and development of GBM, some of them are in Drosophila melanogaster, Caenorhabditis elegans, Zebrafish, mice and rats. Studies on pets (dogs) that spontaneously develop this disease deserve special attention.

ACKNOWLEDGEMENTS: Grant№ КП-06-М61/3 from 13.12.2022, National Science Fund, Bulgarian Ministry of Education and Science.

Keywords: glioblastoma multiforme, in vivo experimental models, laboratory animals, companion pets (dogs).

P1MELB7

EAST BALKANS SWINE – PAST, PRESENT AND FUTURE

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ABSTRACT

The Eastern Balkan Swine has existed in Bulgaria for more than 2500 years. Currently, there are about 200 animals left in the country. Following the African swine fever epidemic from 2019, purebred animals have disappeared from their natural habitats in the country. A gene pool is stored in bases of the Executive Agency for Selection and Reproduction in Animal Breeding (EASRAB) – 40 pigs in Kyustendil, 60 in Sliven and 50 in Sredets. There are also a number of animals in private farms, but in most of the cases they are crosses with local breeds of white pigs. DNA tests are needed in creating a breeding programme as the breed is practically extinct in Bulgaria.

For the first time in Bulgaria, extraction of seminal fluid from male breeders is being carried out and documented. It has been performed in the past in the country as one-off attempts which haven't been documented. Currently, seminal fluid is being obtained from 10 breeders. At the Kyustendil facility, the Eastern Balkan Swine is artificially being inseminated for the first time - offspring were born on 12.01.2024. This is essential in saving the breed and in this way, inbreeding can be avoided. Since 2023, work has been underway to create a new Bulgarian hybrid swine under the working name "Black Angel" - based on the Eastern Balkan Swine and modern industrial pig breeds. Inseminations are performed every 21 days and from 12.01.2024. the first hybrids were born. In Bulgaria, no hybrid pigs have been created in the past 30 years, only imported genetics were used. Currently, the activities are monitored and approval by the EASRAB is pending.

Keywords: East Balkans Swine, artificial insemination, inbreeding, African swine fever, hybrids, "Black Angel" breed.

P1MELB8

THE LARYNX OF THE DOG – MORPHOMETRIC AND ACOUSTIC CHARACTERISTICS IN DIFFERENT BREED

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ABSTRACT

The dog's larynx is foremost in modeling the basic characteristics of sound signals in different individuals. The length of the larynx, the dimensions and thickness of its constituent elements determine the features of the sound in vocal communication, along with the formants in the oral cavity. The present study aims to examine the dog's larynx in two directions – (1) by linear morphometry of its individual parts in post-mortem animals and (2) by acoustic measurement of the sound parameters of dog barking.

The peculiarities of the organ's anatomy and its sound-forming capabilities based on the dog's body weight – large (over 25 kg), medium (10-25 kg) and small (up to 10 kg) were compared. The

goal was to exhibit the relationship between the size of the larynx, respectively the size of the body, and the characteristics of the generated sound.

Keywords: larynx, morphometry, bioacoustics, dog, vocalizations.

SESSION
NON-INFECTIOUS PATHOLOGY

O2NIP1

EVALUATION OF SERUM SYMMETRIC DIMETHYLARGININE (SDMA) IN CLINICALLY HEALTHY GERIATRIC HORSES

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ABSTRACT

In recent years, there is necessity horses to be evaluated for kidney function as equine kidney disease is becoming an increasing problem. As we know, horses are often treated on everyday basis with drugs that can be nephrotoxic in some instances. This is why practitioners need to be familiar with different kidney biomarkers and their normal values in all horse age groups, as different age groups might have slight or significant differences in normal values. In this article we evaluate equine serum SDMA, which is becoming widely used and accepted in clinical practice as a biomarker for early detection of kidney injury. We evaluate its serum concentration in the geriatric group of horses in order to bring more insight into its use in this age group.

Keywords: horses, geriatric, SDMA, creatinine, urea.

O2NIP2

MANAGEMENT OF SUBCUTANEOUS ABSCESSES IN CAPTIVE-BRED LIZARDS – A CLINICAL SERIES

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ABSTRACT

Abscesses in reptiles are formed by encapsulated leukocytes and cause firm swellings filled with solid pus. Due to the fibrous capsule sometimes the term „fibrescesses" is used in reptile medicine. Subcutaneous abscesses can form anywhere on the reptile's body, but are most often found on the limbs and around the mouth in lizards.

Presented are a clinical series of 8 captive-bred lizards (6 leopard geckos, 1 green iguana, and 1 veiled chameleon) with subcutaneous abscesses and their successful management with surgical debridement and antibiotic therapy.

Keywords: subcutaneous abscesses, fibrescess, lizard, gecko, iguana, chameleon.

O2NIP3

THREE-DIMENSIONAL COMPUTED TOMOGRAPHY RECONSTRUCTION OF A MULTILOBULAR TUMOR OF ZYGOMATIC ARCH IN A DOG

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ABSTRACT

A computed tomography (CT) scans are the imaging tools of choice in all cases where an orbital and retrobulbar tumours are suspected. CT also allows better evaluation of bony lesions, including the extent of bone tumours and the involvement of bone in soft tissue tumours adjacent to bone. The recent advances and refinements in CT technology involve the application of computer software for the generation of three-dimensional (3D) reconstruction of an area of anatomic interest. Multilobular tumor of bone (MTB) (also known as Multilobular Osteochondrosarcoma) is a slow-growing but potentially malignant tumor, occurring most often in flat bone in the skull of dogs and occasionally in cats and horses. This tumor is observed especially in the maxillae followed by the mandible, although it was reported in the calvarium, zygomatic arc, hard palate, tympanic bulla, spine, and penis.

A 9-year-old dog Cane Corso was presented with a history of approximately 2 months of slow growth in a left orbital area with the left eye bulging out due to this mass. Three-dimensional computed tomography reconstruction revealed a mass effect that extended from the left orbit to the mandibular joint, not involving the zygomatic arch. After the surgical removal of the neoplasm, the cut surface showed a beige-to-brown color and firm consistency. Histologically, the tumor was characterized by the presence of multilobular, moderately cellular neoplasm composed of numerous variably sized oval to circular islands of cartilage supported by thick fibrous septa. Based on clinical, CT, 3D reconstruction, gross, and microscopic findings, the tumor was diagnosed as a multilobular tumor not involving the zygomatic arch.

Keywords: multilobular tumor, zygomatic arch, computed tomography, 3D, dog.

O2NIP4

EFFECT OF HERB EXTRACTS ON KINEMATIC PARAMETERS OF RAM SPERMATOZOA DURING SHORT-TERM STORAGE OF SEMEN

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ABSTRACT

The aim of this research is to evaluate the effect of plant extracts on ram spermatozoa in fresh ejaculates stored for 24 hours at 5°C. The samples were diluted with sperm extender 6A and the combination of 6A + extract of Geranium sanguineum, Artemisia annua, Tribulus terrestris,

Cichorium intybus and Cotinus coggygria. As a result of the conducted research, we found a positive influence of herbal extracts combined with 6A on fresh sperm on the kinematic parameters - Rapid, VCL, VSL and VAP. Only the samples diluted with Cotinus coggygria showed lower values than the control group - before storage Rapid - 3.11±1.31 vs. Co 4.60±1.91, and after storage 0.28 vs. 0.44; VCL after storage 22.6±1.86 vs. 19.21±1.18; VSL 19.54±2.95 vs 20.07±3.34, post storage 8.77±0.82 vs 12.48±1.63; VAP 26.48±1.85 vs 26.83±2.91, post storage 12.82±0.49 vs 17.19±1.5. After 24h, we found a higher motility in the samples diluted with 6A + Geranium sanguineum (73.71±2.76%) compared to the control group (59.47±5.16%). In conclusion, the application of herbal extracts as components in ram sperm extender, in order to preserve their kinematic parameters, has demonstrated positive results.

Keywords: CASA, sperm, extender, herb, ram.

O2NIP5

THE SIZE AND ASPECT OF CORPUS LUTEUM IN CORRELATION WITH PROGESTERONE LEVEL IN THE FIRST PART OF THE PREGNANCY IN DAIRY COW

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ABSTRACT

The current study sought to examine if the size and type of corpus luteum impact progesterone plasma concentrations. Cows are known to have two forms of corpora lutea: homogeneous corpus luteum (hCL) and cavitary corpus luteum (cvCL). Following hormonal synchronization, 82 cows were artificially inseminated with semen from the same bull, and following a 30-day transrectal ultrasound examination, 40 pregnant females (30 multiparous and 10 nulliparous) were selected for this investigation. They were divided into two batches: hCL and cvCL, each containing 15 mature cows and 5 heifers. The circulating progesterone level was measured at 14 days of pregnancy.

The average corpus luteum volume in the hCL group was less than that in the cvCL group (5730.63 ± 1402.57 mm^3 vs. 6988.96 ± 1218.47 mm^3, $p < 0.005$), which was an unexpected finding. In terms of the reported pregnant conception rate between the two groups, females in the cvCL group had higher values than females in the hCL group (33.35%, respectively 41.66%) for both mature cows (36.55%) and heifers (43.15%). The collected results showed that cavitary luteal tissue has no effect on a cow's ability to remain pregnant.

Keywords: conception rate, corpus luteum types, progesterone level, dairy cow.

O2NIP6

ORBITAL FRACTURE IN A STRAY DOG – DIAGNOSIS AND SURGICAL TREATMENT – A CLINICAL CASE

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ABSTRACT

Fractures involving the ocular orbit present unique challenges in both diagnosis and management. Possible corneal damage is also to be expected so the assessment of patients with such pathologies include thorough physical examination and appropriate imaging studies. Surgical approaches range from conservative techniques to more complex reconstructive procedures, considering factors such as fracture severity, soft tissue involvement, and associated injuries. Emphasis is placed on achieving optimal functional and aesthetic outcomes while minimizing complications. Postoperative care is just as important to ensure optimal patient recovery and long-term outcomes since potential complications are to be expected.

Keywords: orbital fracture, maxillofacial surgery, cornea, ulcer, dog.

O2NIP7

ACUTE KIDNEY INJURY IN LLAMA (*LAMA GLAMA*) INDUCED BY OLEANDER INTOXICATION

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ABSTRACT

A rare clinical case of acute kidney injury after oleander leaves ingestion in llama (*Lama glama*) was the aim of the current report. Oleander (*Nerium oleander*) is a highly toxic plant and as little as 10 to 20 leaves can be lethal for an adult horse or cow. Despite the well -known arrhythmogenic effects of the oleander, manifesting in the case as a bradyarrhythmia, an acute kidney insufficiency with anuria was the key point. The patient demonstrated oliguria-anuria with extremely high creatinine blood level (up to 1167.0 μmol/l) for 5 days. Standard therapeutically regimen was used including fluid therapy. Despite the unfavorable prognosis, complete clinical recovery occurred.

Keywords: kidney injury, anuria, llama, oleander, intoxication.

P2NIP1

A RARE CASE OF COMPLICATED OVARIAN GRANULOSA CELL TUMOUR IN A BITCH

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ABSTRACT

The aim of this report is to present a rare clinical case of complicated ovarian granulosa cell tumour with high degree of torsion of the mesovary in a 10-year-old Toy poodle. The patient was presented to the University Veterinary Hospital of the Faculty of Veterinary Medicine at Trakia University with signs of anorexia and severely deteriorated general condition lasting two days. Physical examination showed acute abdomen. Ultrasound examination of the abdominal cavity revealed hypoechoic heterogenous formation near to the right kidney. The results of the laboratory blood analysis were within the normal ranges. Vaginal cytology showed presence of parabasal, small intermediate cells and small ammount of neutrophil leucocytes. A median laparotomy was performed and a heavily twisted neoplastic formation 7x8 cm in size connected to the right ovary was observed. Ovariohysterectomy was performed using standard surgical procedure. Histopathological examination revealed poorly differentiated diffuse arranged granulosa cells separated by connective tissue septa. The finding was characteristic of a poorly differentiated Granulosa cell tumor.

In conclusion this is a rare clinical case of non-hormone producing complicated ovarian granulosa cell tumour with high degree of torsion of the mesovary. This report can contribute to the clinical veterinary medicine.

Keywords: bitch, granulosa cell tumour, ovary.

P2NIP2

EFFECT OF DIETARY HIGH-PROTEIN SUNFLOWER MEAL ON SOME BLOOD PARAMETERS IN FEEDLOT CALVES

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ABSTRACT

The global population growth poses increasingly greater challenges for its supply with food, especially satisfying the needs from quality animal protein. With this regard, the intensive farming of ruminants, beef cattle in particular, is very important. The selection of beef cattle is mainly aimed at rapid growth with optimal feed consumption per weight gain unit. In order to achieve high production traits in feedlot calves, it is necessary to meet their high energy needs by feeding them protein-rich quality and low-cost feeds. In Bulgaria, the sunflower meal is the main source material of primary importance, containing 370 g/kg protein and 175 g/kg fibre on the average. The present manuscript investigates the effect of feeding high-protein sunflower meal on some blood parameters of feedlot calves.

Keywords: high-protein sunflower meal, blood parameters, calves, fattening.

P2NIP3

APPLICATION OF COLOUR DOPPLER ULTRASONOGRAPHY FOR EXAMINATION OF THE OVARIES IN COWS – A REVIEW

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ABSTRACT

The purpose of this review article is to summarize the data concerning the application of colour Doppler ultrasonography for examination of the ovaries in cows.

The main indication for performing a Doppler ultrasound of the ovaries is to determine the changes in the ovarian blood flow during the follicular and luteal phases of the estrus cycle. Analysis of literature data shows that measurement of follicular blood flow is suitable for identifying the future dominant follicle at an early stage of development and for predicting the viability of the follicle after deviation. Additionally, examining the number of follicles with detectable blood flow can be used to predict the superovulatory response. In this regard, measurements of follicular blood flow by color Doppler ultrasonography can be used to detect normally developing follicles and to predict the time of ovulation.

Colour Doppler ultrasonography can be used to differentiate follicular and luteal cysts, which is of important practical importance in choosing appropriate treatment. The sensitivity of diagnosing luteinized follicles using B-mode (61.5%) and colour Doppler sonography (92.3%) show that blood flow more accurately reflects active luteal tissue than wall thickness.

Over the entire estrus cycle, the correlation between luteal blood flow and progesterone is higher than the correlation between corpus luteum cross-sectional area (corpus luteum size) and

progesterone. Because the increase in blood supply to the corpus luteum in cows is closely related to increased plasma concentrations of progesterone, luteal blood flow can be used to establish early luteal function. Given the close relationship between luteal blood flow and progesterone during the early and late luteal phases, luteal blood flow can be used to distinguish developing (functional) and regressing (nonfunctional) corpora lutea of the same size.

Keywords: colour Doppler, ultrasonography, ovaries, cows.

P2NIP4

CLINICOPATHOLOGICAL STUDIES IN A CASE OF AURICULAR SQUAMOUS CELL CARCINOMA IN AUTOCHTHONOUS KARAKACHAN SHEEP

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ABSTRACT

Cutaneous squamous cell carcinoma (cSCC) is the most common tumor in livestock. Predisposing factors for its occurrence in sheep are cell damage caused by prolonged exposure to ultraviolet radiation, chronic skin damage, Ovine Papilloma Virus 3 infection and immunosuppression. Predominantly cSCC is located on weakly pigmented areas and sparsely covered by wool body areas. The current study represents a case of spontaneous auricular cSCC in Karakachan sheep. The animal was presented with an exophytic, ulcerated mass affecting the left ear. The impression cytology showed atypical squamous epithelium. Partial pinnectomy was performed with a wide surgical margin. The histopathology revealed neoplasia of squamous epithelium with marked pleomorphism and dyskeratosis invading skin, subcutis and auricular cartilage. Six months postsurgically neither cancer recurrence or metastasis are observed. The results of our study demonstrate strong coincidence between cytopathological and histopathology, beneficial in terms of diagnosis and surgical treatment of cSCC.

Keywords: ear, carcinoma, sheep, cytology, histopathology, partial pinnectomy.

P2NIP5

INFLUENCE OF THE PROBIOTIC "LACTINA" ON SOME CLINICAL-CHEMICAL INDICATORS AND ON SUPEROXIDATION IN MALE AND FEMALE ADULT PHEASANTS

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ABSTRACT

Farm production of pheasants is a serious prerequisite for diseases of a different nature. Administration of probiotics in game birds has both prophylactic and metaphylactic effects. They also contribute to higher productivity by stimulating the absorption of nutrients.

The aim of our study was to investigate the levels of glucose and cholesterol as well as the activity of superoxide dismutase depending on the sex of pheasants given the probiotic ("Lactin") for 90 days. The cholesterol level of male pheasants on day 90 was 14.7% higher than that of females,

and in the group receiving the probiotic in the feed this percentage was 14.4. These results were against the backdrop of a reduction in cholesterol in the 90-day-old birds compared to the start of the trial. This is a good result that correlates with less lipid deposition in pheasant's meat. The increase in glucose in the blood has a positive effect on the intensity of all bioenergetic processes and in this connection an increase in the level of glucose (by 2% in male pheasants and by 3.6% in female pheasants) in pheasants receiving probiotics has been shown to be a good result. Superoxide dismutase activity in birds treated with probiotic followed the same logic – (statistically unreliable) – higher values in male pheasants compared to females on day 90.

Keywords: probiotic, pheasants, glucose, cholesterol, superoxide dismutase.

P2NIP6

HEPATIC PRENEOPLASIA INDUCED BY N-NITROSODIMETHYLAMINE AND N-NITROSODIETHYLAMINE IN TURKEYS EMBRYOS

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ABSTRACT

The toxic and carcinogenic effects induced by N-nitrosodimethylamine (NDMA) and N-nitrosodiethylamine (NDEA) in turkey's embryos were examined by pathoanatomical and histopathological methods. The obtained results indicate that both compounds induce preneoplastic hepatic alterations. The spectrum of macroscopic and microscopic lesions identified in carcinogen treated embryos is presented and the potential use of avian embryos as an inexpensive and reliable model system for studies on the hepatocarcinogenesis is discussed.

Keywords: *in ovo* tests, hepatocarcinogenesis, preneoplasia, avian embryos, N-nitrosodimethylamine, N-nitrosodiethylamine.

P2NIP7

THE INFLUENCE OF AGEON THE PARAMETERS OF EJACULATE IN BOARS

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ABSTRACT

The age of boars significantly influences on values of ejaculate parameters**.** The aim of this research was to determine the quality of boar ejaculates categorized by age groups: Group 1, up to 1 year, Group 2, up to 2 years, Group 3, up to 3 years, Group 4, 4 years and older. A total of 50 ejaculates from 50 boars from nine farms were examined, analysing the impact of boar age on ejaculate parameters (ejaculate volume (ml), progressive motility (%), sperm concentration ($x10^6$), total sperm count ($x10^9$), and percentage of total proteins). Analysis of ejaculate parameters in boars of different ages indicates that the most significant changes occur in sperm concentration and total sperm count,

where significant differences were observed. These results suggest that age influences spermatogenesis, and with the aging of boars, there is a decrease in the intensity of spermatogenesis.

Keywords: ejaculate parameters, boars age, seminal plasma.

P2NIP8

INVASIVE FIBROSARCOMA IN A DOG – A CLINICAL CASE

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ABSTRACT

Sarcomas are malignant mesenchymal tumours originating from connective tissue, most frequently detected on the skin and subcutaneous connective tissue. Fibrosarcoma is a highly invasive malignant soft tissue tumour originating from connective tissue cells, and fibroblasts. Primary canine fibrosarcoma is a rare tumour that and accounts for less than 5% of all primary tumours. Macroscopically, fibrosarcoma has a various manifestation, depending on its size and location. On inspection, it appears like a subcutaneous bump or a confined oval formation under the skin. It is more commonly seen in cats than in dogs. The presented clinical case describes the observed clinical, blood laboratory, gross pathology and histopathological findings in a dog with invasive fibrosarcoma.

Keywords: fibrosarcoma, histopathology, dog, gross pathology.

P2NIP9

A CASE OF FELINE OROPHARINGEAL ADENOSQUAMOUS CARCINOMA

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ABSTRACT

The oral cavity tumors in cats representing about 10% of all their neoplastic diseases and over 90% of them are malignant. Statistically, the most common oral epithelial tumors are squamous cell carcinomas, which, depending on the grade of differentiation, in some cases can be easily diagnosed, but in others their determination can be a challenge. The presence of a second component in the neoplastic structure is considerably rare in cats and makes the diagnosis even more difficult. In the present case, an 8-year-old, female, spayed, European shorthair cat with an oral lesion is presented. During the clinical examinations, ultrasonographic and cytopathological examinations, a nodular formation was found, located deeply in the oropharyngeal area with morphological signs of a malignant epithelial tumor. Based on the subsequent necropsy data with histopathological studies, adenosquamous carcinoma was diagnosed.

Keywords: cat, adenosquamous carcinoma, ultrasonography, cytopathology, histopathology.

P2NIP10

LINEAR CORRELATIONS OF HEART MEASUREMENTS IN DOGS WITH DEGENERATIVE MITRAL VALVE DISEASE DEPENDING FROM THE STAGE OF THE DISEASE

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ABSTRACT

Assessment of left ventricular (LV) function can help in a critically ill dog from degenerative mitral valve disease (DMVD) and guide the clinician in selecting the most appropriate treatment. This gave us reason to test the hypothesis that the degree of correlations of cardiac dimensions with the E-point of the septal separation of the mitral valve (EPSS) and the degree of correlations of the same dimensions with the fraction of left ventricular shortening (FS) depend on the degree of the disease. We found correlations in the heart sizes of dogs with stage B of the disease, but did not find similar correlations in stage C of the disease.

Keywords: Dogs, mitral valve, linear correlations.

P2NIP11

DESIGNING PROGRAMMABLE DRUG DELIVERY NANOSYSTEMS AND PHOTOSWITCHABLE NANOMACHINES FOR CANCER THERANOSTICS

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ABSTRACT

Medical nanomachines are defined as nanoscale devices capable of executing predetermined tasks or achieving set goals, regardless of environmental conditions, by utilizing various types of energy sources. The nanomaterials discussed here are engineered to be powered by light energy, serving as exogenous power sources, and may function as photo-oxidative nanozymes, photosensitizer-based nanomachines, nanoconverters, and functional nanosnowflakes (DNA origami without autonomous movement), holding potential applications in cancer theranostics. Due to their small size, nanoscale machineries can directly interact with overexpressed membrane proteins of cancer cells and even penetrate them, enabling light-induced cell death. The cytotoxicity on cancer was evaluated through inhibition of metastatic migration, terminal deoxynucleotidyl transferase dUTP nick labeling assay, and MTT assay.

The biocompatibility of certain materials was demonstrated through their effects on ATPase activity in intact mitochondria and sub-mitochondrial particles, diamine oxidase activity in liver and

kidney fractions under dark conditions, as well as on non-illuminated adenocarcinomic human alveolar basal epithelial cells (A549) and human liver cancer cells (HepG2). A synthetic mRNA nanocarrier was engineered to enable controlled delivery to CD4 and CD8 T cell lymphocytes via receptor-mediated endocytosis, facilitating their modulation for chimeric antigen receptor (CAR) T cell immunotherapy.The discussed anticancer nanodevices hold promise for advancing personalized medical care through the development of advanced nano-medication.

Keywords: medical nanomachines, nanosnowflakes, drug delivery nanosystems, nanomachines.

SESSION
INFECTIOUS PATHOLOGY

O3IP1

IN VITRO ANTIMICROBIAL ACTIVITY OF DOGWOOD FRUIT PURES (*Cornus mas* L.)

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ABSTRACT

The *in vitro* antimicrobial effect of ground dogwood fruit puree (Cornus mas L.) was tested using the classic agar-gel diffusion method. Sixteen microbial strains of the species *Esherichia coli, Salmonella enterica, Staphylococcus aureus* and *Candida albicans* were used, respectively by 1 reference (ATCC) and 3 clinical isolates of each species. A high antimicrobial activity of the investigated plant product was found. The tested dogwood puree showed a well-expressed inhibitory effect against the microbial strains, exceeding that of the broad-spectrum antibiotic Thiamphenicol used as a control. The quantities of the tested microorganisms, added at a final concentration of 2.10^6 cells/ml puree, were reduced by almost half after about 2 hours. After 24 hours, 50% of *E. coli* cells, 42% of *S. enterica* cells, 25% of *S. aureus* cells and 28% of *C. albicans* cells remained viable in the dogwood puree.

Keywords: dogwood fruit (Cornus mas L.), Esherichia coli, Salmonella enterica, Staphylococcus aureus, Candida albicans, antimicrobial activity.

O3IP2

A COMPARATIVE ANALYSIS BETWEEN THE IDEXX SNAP 4DX PLUS RAPID ANTIGEN TEST, THE MODIFIED KNOTT METHOD AND THE CONVENTIONAL MULTIPLEX PCR FOR THE DIAGNOSIS OF *DIROFILARIA IMMITIS*

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ABSTRACT

A total of 192 dogs of both sexes, with no limitation in age, the way of raising and breed affiliation, were subjected to the study by the rapid antigen test IDEXx SNAP 4Dx Plus TEST for the presence of antigens of the species *Dirofilaria immitis*, modified Knott's method for the presence of microfilariae of the species *Dirofilaria immitis* and *Dirofilaria repens* and multiplex conventional PCR for the presence of antigens of the species *Dirofilaria immitis* and *Dirofilaria repens*.

The aim of the present study was to perform a comparative analysis between the different diagnostic methods for *Dirofilaria immitis* and to determine their effectiveness and interpretation when used in practice.

Keywords: *Dirofilaria immitis*, dogs, IDEXx SNAP 4Dx Plus TEST, modified Knott's method, conventional multiplex PCR.

O3IP3

CURRENT SURVEILLANCE MODELS OF VIRAL HEMORRHAGIC SEPTICEMIA AND INFECTIOUS PANCREATIC NECROSIS IN CULTURED FISH IN BULGARIA

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ABSTRACT

Notifiable fish diseases in EU are entirely with viral etiology. Emerging viral fish diseases as Infectious hematopoetic necrosis (IHN), VHS and IPN are volatile for the cultured trout fish in Bulgaria. IPN is not notified, but is part of the bulgarian legislation. The virus causing IHN has not been detected in Bulgaria but outbreaks of the other two viral diseases and persistence of the causative agents - the rhabdovirus VHSV and the aquabirnavirus IPNV - have been detected with variable frequency. The surveillance model for tracking the health status of the fish farms in our country is enshrined in our legal acts. It complies with European legislation based on modern scientific research in the area of aquaculture health.

The aim of this study is to show some current models of medical scientifically based survellance for VHS and IPN that could be applied in Bulgaria considering features of fish viral pathogens.

Keywords: viral haemorrhagic septicemia (VHS), infectious pancreatic necrosis (IPN), surveillance

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O3IP4

DYNAMICS AND DISTRIBUTION OF NOTIFIABLE FISH DISEASES AT THE BALKAN COUNTRIES OF THE MIDDLE AND LOW DANUBE WATERSHED DURING 2014-2023 YEARS

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ABSTRACT

In the last decades, aquaculture farms on the Balkan Peninsula are expanded dynamically and characterized by a variety of species. Often, the aquaculture grew up in a basins with different composition and are exposed to stress, high density. and risk of introducing pathogens – from eggs, birds, wild fish populations or facilities.

Bulgaria shares Danube watershed with Croatia, Serbia, Romania and is in relay through whole river basin with Slovenia, Hungary, Montenegro, Cosovo and Bosnia & Herzegovina. Thus, create integrated epidemiological zones which can be starting point of outbreaks. The main interest is focused over fish notifiable diseases – all of them with a viral etiology, rapidly proceeding and a difficult reducing of consequences. The aim of this study is a short review of the present epizootological status of regional line includes Bulgaria, Romania, Croatia, Serbia for ten years period – from 2014 to 2023 years and its impact into fish aquaculture in Bulgaria.

Keywords: notifiable fish disease, viral fish diseases, aquacultures.

O3IP5

PREVALENCE OF SHIGA TOXIN-PRODUCING *ESCHERICHIA COLI* (STEC) IN FOODS IN BULGARIA

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ABSTRACT

Shiga toxin-producing *Escherichia coli* (STEC) are foodborne pathogens and one of the most common causes of gastrointestinal diseases. They are associated with some forms of infections in humans such as diarrhea, hemorrhagic colitis and hemolytic-uremic syndrome (HUS).

Prevalence of Shiga toxin-producing *Escherichia coli* in foods in Bulgaria for the period 2015-2023 was studied. A total of 267 sprouts, seeds for sprout production and lamb offal were tested for the presence of STEC in 25 grams of product, according to ISO/TS 13136:2012 with Real-time polymerase chain reaction (Real-time PCR). STEC was detected in two lamb offal samples positive for the stx1 and stx2 genes. Shiga toxin-producing *Escherichia coli* of serogroups O157, O26, O111, O103, O145 and O104:H4 included in Commission Regulation (EC)2073/2005 on microbiological criteria for food were not detected.

Keywords: Shiga toxin-producing *Escherichia coli*, foods, Real-time PCR.

O3IP6

THE PRESENCE OF *FASCIOLA HEPATICA* AND *CALICOPHORON DAUBNEYI* IN FIELD-COLLECTED *GALBA TRUNCATULA* SNAILS FROM BULGARIA

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ABSTRACT

The freshwater snail *Galba truncatula* is a major transmitter of *Fasciola hepatica* (liver fluke) and *Calicophoron daubneyi* (rumen fluke) in temperate European countries. Both trematodes cause significant losses to the livestock industry. Snails serve as an intermediate host in which parasites multiply by successively passing through different larval stages. Adult forms are parasites of cattle, sheep, goats and wild ruminants (*F. hepatica* affects also human). In this study, the prevalence of larval trematode infection in the snail *G. truncatula* in grassland areas of Bulgaria was determined. Snails were collected from 55 locations in July-August 2017 and in July-August 2018. Parasites were detected by PCR assays. In 5 of the sampled sites (9.1%), the infection with *F. hepatica* was found. Snails infected with *C. daubneyi* were also found in one (1.8%) of these sites. The data show that *F. hepatica* is more prevalent than *C. daubneyi* at the snail host level. The results of this study and the subsequent mapping of the intermediate host are necessary to assess the epidemiology of the parasites and the associated risk in areas important for animal husbandry in Bulgaria.

Keywords: freshwater snail, trematode, liver fluke, rumen fluke, Bulgaria.

O3IP7

HYGIENE INDICATORS OF PORK MEAT TREATED WITH ELECTROACTIVATED WATER

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ABSTRACT

Electroactivated (dissociated) water (EAW) has been growing in popularity in recent years in many countries. It is applied in the form of anolyte and catholyte. The use of EAW in meat production improves some hygiene indicators, and is a cheap, safe, non-toxic and effective option for increasing the quality and extending the shelf life of meat.

In the present study, the influence of different types of EAW on some hygiene indicators of pork meat was studied. The following indicators were studied: total microbial count (TMC); total count of *Escherichia coli*; presence of *Salmonella spp.*; total count of coagulase-positive staphylococci and presence of *Listeria monocytogenes*. The results show an improvement in meat hygiene in some types of EAW.

Keywords: Electroactivated (dissociated) water, hygiene indicators, pork meat.

O3IP8

PREVALENCE OF NOROVIRUSES, HEPATITIS A AND HEPATITIS E VIRUSES IN MUSSELS FROM BULGARIAN BLACK SEA COAST

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ABSTRACT

Foodborne viruses are a serious public health problem. They also cause a significant economic burden worldwide. Foodborne illnesses are associated with the consumption of bivalve mollusks (mussels and oysters), which have the ability to accumulate virus particles from the water and are traditionally consumed after insufficient heat treatment. Noroviruses (NoV), Hepatitis A (HAV) and Hepatitis E (HEV) viruses are of the greatest importance for public health. The aim of the present study was to assess the prevalence of NoV, HAV and HEV in mussels (*M. galloprovincialis*) produced and consumed along the Bulgarian Black Sea coast. A total of 59 samples (n=10 individual mussels/each sample) were tested during the active summer season of 2023. Presences of NoV, HAV and HEV were analyzed by real-time reverse transcription polymerase chain reaction (real-time RT-PCR) according to ISO 15216-2. The obtained results will provide a good basis for risk assessment in the consumption of mussels and for compliance with European food safety standards.

Keywords: noroviruses, hepatitis A virus, hepatitis E virus, mussels, real-time RT-PCR.

O3IP9

THE CHALLENGES OF HEPATITIS E VIRUS

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ABSTRACT

Hepatitis E virus (HEV), a single-stranded positive-sense RNA zoonotic virus that belongs to Hepeviridae family, is the most common cause of acute viral hepatitis worldwide and has been recognized as a global public health problem. Pregnant women, infants, older people, males, immunocompromised individuals, patients with comorbidities as well as workers who come into close contact with HEV-infected animals represent the major risk groups. HEV infections are usually self-limiting and asymptomatic in people with a normally functioning immune system. In immunocompromised individuals there is an increased risk of developing chronic infection with all the subsequent complications (cirrhosis and liver failure, the development of hepatocellular carcinoma is not excluded). Currently there is no globally licensed anti HEV vaccine and specific antiviral treatment is not available. Since HEV infections can be transmitted zoonotically, they should be considered under the One Health concept to prevent the spread of HEV from animal hosts to humans.

ACKNOWLEDGEMENTS: Grant № КП-06-Н33/2 from 13.12.2019, National Science Fund, Bulgarian Ministry of Education and Science.

Keywords: Hepatitis E virus, acute / chronic infection, zoonosis, One health concept.

P3IP1

AN OVERVIEW REGARDING PHYTOBIOTICS EFFECTS ON AVIAN ENTERIC DISEASES

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ABSTRACT

Enteric diseases in domestic poultry species are present both in the industrial breeding system and in the domestic one, leading to significant losses to poultry flocks. Among these, can be listed avian colibacillosis (*Escherichia coli*), avian salmonellosis (*Salmonella sp*.) and avian campylobacteriosis (*Campylobacter jejuni*). Salmonellosis is the second most reported foodborne gastrointestinal infection in humans, after campylobacteriosis, being a major cause of foodborne outbreaks in EU. Moreover, in 2023, 335 laboratory-confirmed *Salmonella Enteritidis* ST11 cases were reported in 14 EU/EEA, UK, and US countries. In 2022, 2884 Campylobacteriosis positive sampling units were reported in 17 EU/EEA and UK countries, in broilers and turkeys. Regarding colibacillosis, approximately 30% of commercial flocks in the US are affected at any given time. Currently, numerous studies are presented in the specialized literature in which plant extracts and essential oils (EOs) are used as phytobiotics to demonstrate the presence of antimicrobial action on the germs responsible for the occurrence of these enteric diseases.

The aim of the present paperwork is to outline the importance of plant extracts and essential oils effects on avian enteric diseases. One of the key advantages of using plant extracts and essential oils is their potential to combat enteric diseases without contributing to antibiotic resistance, which is a significant concern associated with the long-term use of antibiotics in poultry production. Therefore, the exploration of plant-derived alternatives offers a promising avenue for mitigating the impact of enteric diseases on poultry health and reducing the reliance on antibiotics in the poultry industry.

ACKNOWLEDGEMENTS: This research was funded by the University of Agronomic Sciences and Veterinary Medicine of Bucharest—Romania, Research Project 846/30.06.2023, acronym EnterGreenFood in the Competition IPC 2023.

Keywords: avian colibacillosis, avian salmonellosis, avian campylobacteriosis, plant extracts, essential oils.

P3IP2

MEAT QUALITY IN BEEF CATTLE FED WITH BULGARIAN HIGH-PROTEIN SUNFLOWER MEAL

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ABSTRACT

A healthy lifestyle introduces a change in consumption preferences, with a sustainable trend among consumers by choosing food products according to their origin and quality. A number of scientific researches analyse the relationship between the feed used for livestock animals, the quality of the obtained production and the health of consumers. The aim of the present study was to investigate the application of Bulgarian high-protein sunflower meal in beef cattle diet, establishing its impact on the quality of the meat. The fattened animals were slaughtered between 17 and 22 months of age and a body weight of 650 to 750 kg. Muscle samples obtained from experimental and control groups were evaluated in laboratory conditions. Results of our study demonstrate that meat from beef cattle fed with high-protein sunflower meal had evenly distributed subcutaneous and intermuscular fatty tissue, slightly higher fat content, lower water content, and reduced water-holding capacity. The analysis of shear force and texture revealed better values with the inclusion of sunflower meal in animal diet. However, there were no statistical differences between groups in pH and ash content.

Keywords: meat quality, beef cattle, sunflower meal.

P3IP3

OVERVIEW OF EUROPEAN AND NATIONAL LEGISLATION RELATED TO OFFICIAL CONTROLS OF RAW COW'S MILK

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ABSTRACT

The Official Controls legislation is harmonised at the European level and obliges Member States to develop national measures to ensure strict enforcement. Traditionally, the dairy products production is one of the most important sectors of the Bulgarian economy. Therefore, it should be emphasised the enormous importance of increased official control regarding to raw milk quality and its placing on the market.

The aim of the study was to analyse the European and national law documents in this field. The conducted research showed that the requirements of the European legislation in relation to the hygiene of raw cow's milk are fully implemented in Bulgarian low.

Keywords: legislation, official controls, raw cow's milk.

P3IP4

DETECTION OF COXIELLA BURNETII DNA IN MILK AND TISSUE SAMPLES FROM CATTLE, SHEEP AND GOATS USING DIFFERENT PROTOCOLS OF CONVENTIONAL PCR

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ABSTRACT

Q fever is a worldwide zoonosis caused by the obligate intracellular bacterium Coxiella burnetii. The purpose of the study was to compare the sensitivity of different protocols of conventional PCR, performed with three different pairs of primers for the detection of genome of C. burnetii in milk and tissue samples from cattle, sheep and goats. Thirty-six samples were examined, including 15 bulk tank milk samples (BTM), 2 cheese samples, 12 placentas, and 7 vaginal swabs. Samples were examined by PCR with primers Trans ½, C.B ½ and in nested PCR with primers OMP 1-4. The results show a different sensitivity of the reaction when performed with primers targeting different genetic markers. In samples from cattle, a significantly higher level of detection was found with primers OMP 1-4 compared to the other two primer pairs This probably reflects the presence of genetic differences in the strains circulating among animal populations.

Keywords: Q-fever, Coxiella burnetii, PCR, primers.

P3IP5

HEAVY METAL DETERMINATION IN BEES FROM BULGARIA

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ABSTRACT

Bees, as pollinators, play a crucial role in maintaining ecosystem stability and agricultural productivity. However, their populations worldwide have been facing significant declines, primarily due to various environmental stressors, including pollution. Among the pollutants of concern, heavy metals have emerged as particularly detrimental to bee health and survival. In the present study we investigated using X-ray fluorescence bee samples from several diverse beekeeping locations in Bulgaria – Parvomay, Trigrad and Tutrakan. We found traces of titanium (Ti) in the samples from Parvomay and traces of cesium (Cs) and bromine (Br) in the samples from Trigrad. We speculate that the source of titanium may be the titanium oxide white paints used for the beehives and that the sources of bromine are flame retardants used in some beekeeping materials, while the cesium may come from cesium rich mineral waters in the region. Further studies are needed to test those hypotheses.

Keywords: bees, heavy metals, x-ray fluorescence.

P3IP6

ABSENCE OF HEPATITIS E VIRUS CIRCULATION AMONG EUROPEAN BROWN HARE POPULATION DURING 2015 IN TWO BULGARIAN DISTRICT

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ABSTRACT

The aim of this study was to assess the presence of zoonotic hepatitis E virus genotype 3 (HEV-3) in 43 liver samples from European Brown Hares in two administrative regions of Bulgaria (Plovdiv and Burgas) in 2015. Nested and Real time RT-PCR were used for HEV nucleic acid detection. In addition, liver transudate was tested for the presence of anti-HEV class IgG antibodies by ELISA (ID Screen® Hepatitis E Indirect Multi-species, IDVet, Grabels, France) following the manufacturer's protocol. No positive samples for the presence of nucleic acid were proven in the conducted research by nested and Real time RT-PCR. Anti-HEV antibodies were also not detected. Further studies need to be conducted to assess the presence of the virus in the European Brown Hare population in Bulgaria in order to establish the role of this host in the epidemiology of the disease in humans as well.

Keywords: Hepatitis E virus, wildlife, European Brown Hare, Bulgaria, HEV, RT-PCR, ELISA.

P3IP7

SEROPREVALENCE AGAINST CANINE DISTEMPER VIRUS IN VACCINATED SHELTER DOGS FROM BULGARIA

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ABSTRACT

Canine distemper virus (CDV) belongs to the genus *Morbillivirus* in the *Paramyxoviridae* and is the causative agent of a multi-systemic viral disease with high morbidity and mortality in susceptible animals. Disease control is based on the widespread use of vaccination of the most vulnerable age groups. The aim of the current study was to assess the serum antibody titers against canine distemper virus in vaccinated shelter dogs. Antibody prevalence was demonstrated in 88.44% (283/320) of the vaccinated animals through modified ELISA and in 11.56% (37/320) was estimated vaccination failure. The results confirmed that the approved shelter vaccination protocol can provide a successful post vaccination antibody titer. However, the relatively high rate of failed CDV vaccinations in this study may serve as an indication of possible breakthroughs in herd immunity and the risk of a potential disease outbreak.

Keywords: canine distemper virus, antibodies, shelter medicine.

P3IP8

EFFECT OF PROPOLIS ON REPLICATION OF BOVINE ALPHAHERPESVIRUS 1 (BoHV-1) *IN VITRO*

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ABSTRACT

It is well know that the propolis (bee glue) has been used by man since ancient times for its pharmaceutical properties. For quite some time the main attention was on his inhibitory effect on the bacterial pathogens, *fungal* growth and inflammation. After discovering that the propolis has an antiviral activity on several plant viruses, new possibilities for this bee product were discovered. Extract of propolis was evaluated for his inhibitory effect on the replication of bovine alphaherpesvirus 1 (BoHV-1). The toxicity of the extract of propolis on the permanent MDBK bovine kidney cell line was tested. Nontoxic dose for cell morphology was determined.

To evaluate the activity of the propolis intracellular and the extracellular fractions of the virus were used. The medium compositions only varied in the concentration of the propolis. The titer of the virus was examined on the 24, 48 and 72 hours. The results indicate that propolis is an inhibitory factor for the replication of the BoHV-1.

Keywords: propolis, bovine herpesvirus-1, inhibitory effect.

P3IP9

INFLUENZA D VIRUS ANALYSIS OF THE PREVALENCE OF IDV IN DOMESTIC AND WILD ANIMALS WORLDWIDE

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ABSTRACT

Influenza D virus (IDV) is a relatively recent discovery, first identified in 2011 in pigs in the US, although evidence suggests it has been circulating in cattle populations since at least 2003. Currently, the virus is distributed in various countries in Europe, North America, South America, Africa, Asia and recently Australia. The virus has been isolated from both cattle and pigs, while the presence of antibodies to IDV has been identified in various animal species. Histochemistry confirmed the potential of the virus to bind to receptors in the airways of a variety of domestic and wild animals. IDV seroprevalence has also been found in humans, especially those in contact with cattle. Studies in poultry have not shown susceptibility to IDV infection, but molecular diagnostics revealed the presence of RNA in aerosol samples from poultry farms in Malaysia. Our review provides information on the occurrence of influenza D infections in multiple domestic and wild animal species.

Keywords: Influenza D virus, cattle, pigs, worldwide.

SESSION
STUDENT RESEARCH

O4S1

RETAINED PLACENTA IN A COW – A CLINICAL CASE

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ABSTRACT

Retained placenta in cows is defined as failure to expel all or part of fetal membranes within 6 hours after parturition. Risk factors contributing to this include abortion, dystocia, twin delivery, stillbirth, hypocalcemia, premature delivery, placentitis and others. Retained placenta is characterized by various levels of degenerating, discolored and foul-smelling membranes protruding from the vulva. Treatment can be conducted through manual removal or medications. The clinical case concerns a cow in the village of Tsalapitsa within the discipline of Mobile Clinic in obstetrics and gynecology. In the morning, we diagnosed retained placenta in a cow which had given birth unassisted during the night. Vaginal and rectal examinations were performed and treatment was conducted by intrauterine placement of antibiotic pessaries. The cow expelled the retained placenta within three hours following the administration of the medication.

Keywords: cow, retained placenta, treatment.

O4S2

CANINE VECTOR-BORNE DISEASES IN GREECE

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ABSTRACT

Canine vector-borne diseases (CVBDs) are a group of diseases transmitted to dogs by vectors such as ticks, fleas, lice, mosquitoes and phlebotomine sandflies. CVBDs pose a significant threat to the health and well-being of dogs in Greece. This study aimed to provide an overview of the current status of CVBDs in the country, including the prevalence of different pathogens, their distribution, and the associated risk factors. The diseases are a significant concern in Greece due to their potential to cause severe illness in dogs and their role as reservoirs for zoonotic pathogens. These diseases can cause a range of clinical signs, from mild to severe, and can even be fatal in some cases. The studies involved the analysis of data from veterinary clinics, diagnostic laboratories, and research institutions across Greece with varying degrees of prevalence. The results revealed the most prevalent CVBDs - ehrlichiosis, leishmaniasis, babesiosis, anaplasmosis and dirofilariasis. These pathogens were found to be widely distributed throughout different regions of Greece, with varying degrees of prevalence. Additionally, the study identified several risk factors associated with CVBDs, including geographic location, seasonality, and dog breed. Molecular techniques, such as PCR and serological assays, were employed to detect the presence of specific pathogens. The results provided insights into the genetic

diversity and distribution of CVBDs. The findings underscore the need for continued surveillance, research, and collaborative efforts among stakeholders to develop comprehensive strategies for the prevention and control of these diseases in the country in order to protect the well being of both animals and humans. To conclude, the studies provide valuable information on the current status of CVBDs in Greece.

Keywords: vector-borne diseases, geographic location, seasonality, dogs, Greece.

O4S3

OTITIS IN THE DOG – AETIOLOGICAL AGENTS AND THERAPY

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ABSTRACT

Ear infections in dogs are one of the most common nowadays. Since in practice the isolation and testing of the etiological agent is associated with additional work, time and equipment, the appropriate therapy necessary for the specific causative agent is not always prescribed. Long-term treatment with inappropriate medications can lead to the development of multi-resistance of infectious agents. In the present study, we summarize the latest scientific information on the problem. The article discusses the main causes of otitis in dogs, such as: *Malassezia pachydermatis, Pseudomonas aeruginosa, Staphylococcus pseudintermedius, Escherichia coli, Finegoldia magna, Klebsiella* spp., *Proteus* spp. and other. Their resistance to different types of antibiotics and which are currently the most effective among them are shown. Some studies related to breeds predisposition to otitis are also indicated.

Keywords: otitis, dogs, causative agents, antibiotic resistance.

O4S4

ODONTOCLASTIC RESORPTIVE LESIONS IN A CAT WITH INFECTIOUS PERITONITIS AND CALICIVIRUS INFECTION – A CASE REPORT

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ABSTRACT

Feline Odontoclastic Resorptive Lesions (FORL) in cats is a painful condition in which odontoclasts (cells similar to osteoclasts) destroy tooth components. Feline Infectious Peritonitis (FIP) is a deadly viral disease caused by mutant strains of Feline Coronavirus.

The presented case reports a young domestic cat in which the first clinical sign is the refusal of hard food granules. Hematological analysis indicated the presence of chronic kidney disease. Calicivirus infection was detected by polymerase chain reaction – it was treated with recombinant interferon omega of feline origin. Type I odontoclastic resorptive lesions were found in the cervical area of some teeth. Surgical treatment – tooth extraction was applied. Subsequently, the antibody titer for feline coronavirus was tested and a dry pyogranulomatous form of feline infectious peritonitis

was found. Experimental treatment with molnupiravir, a drug used to treat SARS-CoV-2 infected humans, was performed.

Keywords: odontoclastic resorption, infectious peritonitis, calicivirus, coronavirus, chronic kidney disease, cat, molnupiravir.

O4S5

REGULATORY REQUIREMENTS CONCERNING THE LABELLING AND PRESENTATION OF PET FOOD

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ABSTRACT

The manufacture of pet food is highly diverse and dynamically evolving, this is partially related to the increasing number of pets, especially dogs and cats. The production of these foods, as part of the global food industry, is subject to strict control, ensuring the delivery of a final safe product for consumption. The key factors in achieving quality products are proper labelling and presentation, in accordance with legislation. The aim of the current study was to analyze the fundamental European regulations, concerning the quality and safety of dogs' and cats' food. The provided information on labels of various types of food, including dry extruded, wet and raw pet food was examined following the legislative requirements. It was observed that labels on food of premium class include additional non-obligatory information, such as health claims regarding the presence of ingredients that improve health status.

Keywords: quality and safety; labelling; pet food.

O4S6

ANALYSIS OF EUROPEAN AND NATIONAL LEGISLATION RELATED TO MALE CHICK CULLING

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ABSTRACT

Around seven billion one-day-old chicks are killed annually by maceration or suffocation. This controversial theme among the European Union countries causes discussions about abolishing this practice and finding a more moral and ethical solution to the problem. There are no unified legislative changes in the Member States relating to prohibiting these cruel actions and searching for possible ways out. In this regard, the aim of the study was to analyze the European and national legislation according to the topic. Based on the conducted legislative analysis and literature review, it was established that the public demands an alternative to male chick culling.

Keywords: male chick culling, legislation, maceration, suffocation.

O4S7

INVASIVE ORAL SQUAMOUS CELL CARCINOMA IN A DOMESTIC FOUR-TOED HEDGEHOG (*ATELERIX ALBIVENTRIS*)

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ABSTRACT

Neoplasms in the oral cavity of hedgehogs have a high prevalence and originate from a variety of tissues, including the tongue, gum, hard palate, or oral mucosa. In this tumor type, the prevalent presentation often encompasses ulcerated and erythematous masses.

The presented clinical case describes the invasiveness of oral squamous cell carcinoma in the mandibular bone of a domestic four-toed hedgehog, known also as an African pygmy hedgehog (*Atelerix albiventris*). Radiographic studies of the altered area were done and after the fatal outcome, a histological examination of the tumor mass was performed. The results of the studies are described and compared with those reported by other authors for oral masses in hedgehogs kept as pets.

Keywords: squamous cell carcinoma, hedgehog, malignant tumor, oral cavity mass, histology.

O4S8

ADVANCED SURGICAL MANAGEMENT WITH POLYPROPYLENE MESH OF RECURRENT PERINEAL HERNIA IN CANINES

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ABSTRACT

Traditional surgical repairs often bear the risk of recurrence, underscoring the need for innovative approaches to enhance treatment efficacy and durability. This study elucidates the clinical outcomes of six male dogs afflicted with recurrent perineal hernias, one of which presented a bilateral manifestation. The patients were treated surgically, employing synthetic mesh. Post-operative follow-ups revealed substantial clinical improvement with no signs of immediate or short-term recurrence. The use of synthetic mesh not only facilitated the structural reinforcement of the perineal region but also promoted tissue integration, thereby reducing the risk of future herniation. The incorporation of synthetic hernia mesh in the surgical repair of recurrent perineal hernias represents a viable and effective strategy. This approach significantly enhances the prognosis by providing durable support to the perineal region and reducing the propensity for recurrence, thereby improving the quality of life for affected canines.

Keywords: dog, perineal hernia, synthetic polypropylene mesh

O4S9

A CASE OF HYPOCALCEMIA IN *PSITTACUS ERITHACUS* (JACO), FRACTURE AND LYSIS OF THE TIBIOTARSAL BONE ACCOMPANIED BY STAPHYLOCOCCAL INFECTION

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ABSTRACT

This report describes a clinical case of a 3-yaer-old male grey parrot (*Psittacus erithacus*) with hypocalcemia due to improper feeding. Fracture and lysis of the tibiotarsal bone are also observed, accompanied by staphylococcal infection. It leads to appearance of pyoderma on the dorsal surface of the bone, progressing to necrosis. Treatment includes splinting of the fracture, application of antibiotics, probiotics and nutritional additive. For skin lesions is used ointment based on bee products and lavender oil.

Keywords: parrot, Jaco, calcium, treatment, diagnosis, prevention, lavender oil.

O4S10

ADENOMA OF PITUITARY GLAND IN FANCY RATS

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ABSTRACT

Tumors of pituitary gland are one of the most common cause of death in aged unspayed female fancy rats. In some cases, the symptoms of a such pathological condition are specific and the clinical diagnosis is not challenging. Unfortunately, there is a significant chance in which the signs may overlap with other diseases and the clinical differentiation is not easy. Our case series concern three unneutered female rats of 14 months, 23 months and one over 13 months old. All them were with general manifestation of neurological problem. Despite a symptomatic therapy, all rats died. Postmortem examinations were preformed and samples of the pituitary lesions were taken. The histopathological examination revealed an adenoma of pituitary gland.

Keywords: rat, pituitary gland, neoplasia, histopathology.

O4S11

BOVINE DYSTOCIA CAUSED BY CARPAL AND SHOULDER FLEXION – A CASE REPORT

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ABSTRACT

The term dystocia comes from the Greek words "dys," meaning difficult, and "tokos," meaning birth. The condition represents the inability of the fetus to pass through the birth canal. Dystocia is a major cause for increased mortality rate during parturition. This clinical case describes a dystocia in a four-year-old Holstein Friesian cow. The animal was notice early in the morning with signs of non-progressive labor. The obstetric examination revealed a dead fetus in a longitudinal anterior presentation, dorsal position and left thoracic limb flexed in the carpal joint and right thoracic limb flexed in the shoulder joint. The diagnosis was dystocia due to fetal disposition which was corrected by manual manipulation followed by fetal extraction.

Keywords: bovine, dystocia, carpal, shoulder, flexion.

O4S12

MACROSCOPIC AND ANATOMICAL IMAGING FEATURES IN THE MORPHOLOGY OF THE BEAR KIDNEY

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ABSTRACT

A morphological study of the multipyramidal kidneys of two male and two female brown bears (*Ursus arctos* L.) was executed, and macroscopically they were compared with this organ of animals classified with this type of kidney. Additionally, the excretory urinary tracts were researched on corrosion cast. Using computed tomography and ultrasonography, the kidneys of a male American black bear (*Ursus americanus* P.) were also examined in order to clarify the anatomical image and topography of this organ in our mammalian studies. The obtained results, apart from morphological interest, also contribute to the image-anatomical diagnosis of the pathology, malformations and dislocations of the kidneys in bears.

Keywords: multipyramidal kidneys, brown and black bear, computed tomography, ultrasonography.

O4S13

COMPARATIVE MORPHOLOGICAL STUDY OF THE INTERNAL AND CARDIOVASCULAR ORGANS OF TWO SPECIES OF MONKEYS AND HUMAN – CASE REPORT

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ABSTRACT

A morphological study of the internal organs, the heart and some major arteries of the mantle baboon (*Papio hamadryas* E.) and the green monkey (*Chiorocebus sebaeus* L.) which belong to the family of Cercopithecids (*Cercopitethericidae*) as well as human species (*Homo sapiens* L.) was performed. The differences between the lobes of the liver and lungs, the shape of the spleen and the heart, and the presence of the appendix of the two monkey species with humans were researched and photo-documented. Distinctions were found between monkeys in the representation of the type of kidney as well as in the separation of major arteries by arcus aortae. The reported features contribute to the comparative anatomy between the human and monkeys, the study of which for many years has aroused great morphological interest on the one hand, and on the other hand, it can help to clarify the pathology and malformations of the internal and cardiovascular organs in monkeys studied by us.

Keywords: baboon, green monkey, apex thick-walled, lungs, liver, kidneys.

O4S14

APPLICATION OF ELECTROACTIVATED AQUEOUS SOLUTIONS IN THE MEAT INDUSTRY

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ABSTRACT

Electroactivated water (EAW) has been increasingly used in the food industry in recent years. The electroactivation of aqueous solutions is based on electrolysis, which occurs in a device composed of a pair of electrodes immersed in an electrolyte, the anode and cathode sections being separated by a membrane.

The use of EAW has a positive effect on the organoleptic, physico-chemical and microbiological characteristics of meat and meat products. EAW treatment significantly reduces the total microbial count of red meat, poultry carcasses and fish during storage, and has been shown to effectively reduce the number of pathogenic bacteria on their surface. EAW is also used in the pre-packaging of seafood, chicken and other products without changing their taste.

Keywords: electroactivated water, application, meat industry.

O4S15

A CASE OF CONGENITAL FLEXOR DEFORMITIES OF THE THORACIC LIMBS IN A 3-YEAR-OLD HORSE

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ABSTRACT

The subject of this study is a 3-year-old horse with a contractual flexor deformity of both thoracic limbs with a predominance of the left limb. Infrared thermography was conducted, and the radiographs provided were reviewed regarding the assessment of the musculoskeletal system. Congenital flexural limb deformities are a well-known group of developmental orthopedic diseases that can be effectively treated if diagnosed early. Our study aims to evaluate the degree of permanent changes in a patient not promptly treated and to compare thermography results to x-ray findings. The radiograph analysis revealed extensive pathological changes in both the passive and active locomotor systems. Moreover, the thermographic examination further confirmed some of those findings.

Keywords: contractual flexor deformity, developmental orthopedic disease, infrared thermography, x-ray examination.

O4S16

ROBOTICS IN VETERINARY SURGERY

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ABSTRACT

Robotic surgery, also known as robot-assisted surgery, has emerged as a groundbreaking approach to minimally invasive procedures. By utilizing advanced robotic platforms, such as the da Vinci Surgical Robot, surgeons gain unprecedented precision, flexibility, and control. The da Vinci System enables magnified 3D vision and precise manipulation of robotic arms, resulting in smaller incisions and faster patient recovery. Although widely adopted in human medicine, its application in veterinary practice remains limited due to insufficient literature and feedback. Proper training is crucial for safe and effective use of robotic systems. In conclusion, robotic surgery continues to revolutionize surgical practices, promising improved patient outcomes and shaping the future of healthcare.

Keywords: veterinary surgery, minimally Invasive procedures.

O4S17

A REVIEW ON MANAGING RABBIT'S MALOCCLUSION – CHALLENGES AND STRATEGIES

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ABSTRACT

Dentistry practices in rabbits present unique challenge due to the particular anatomy and dental characteristics of lagomorphs. Rabbits have continuously growing, open-rooted incisors and cheekteeth (premolars and molars), which necessitates regular dental care to prevent overgrowth and associated complications. The present review focuses on malocclusion as one of the most common oral pathologies in pet rabbits. The condition is characterized by misalignment of the teeth, elongation, abnormal growthor sharp edges of the crown often leading to discomfort, pain and impaired nutrition.

A proactive approach to dental care, coupled with regular monitoring and prompt intervention, is essential for maintaining optimal oral health and well-being in pet rabbits. Further research is warranted to explore novel treatment modalities and preventive strategies for managing malocclusion in rabbits effectively.

Keywords: malocclusion, rabbit, lagomorph, dentistry, overgrowth, teeth.

P4S1

INVESTIGATION OF GENETIC AND ANTIMICROBIAL RESISTANCE DIVERSITY OF VETERINARY AND FOOD *SALMONELLA* TYPHIMURIUM ISOLATES IN BULGARIA

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ABSTRACT

Salmonella enterica subsp. *enterica* serovar Typhimurium is one of the main serotypes causing salmonellosis worldwide. The aim of this study is to analyse food (38) and veterinary (12) *S.* Typhimurium isolates for their genetic diversity by the multiple-locus variable number of tandem repeat analysis (MLVA) and their antimicrobial resistance (AMR) by the classical disk – diffusion method (Bauer- Kirby).

Results showed that isolates were divided into thirty-nine MLVA and nineteen AMR profiles. The AMR testing revealed that 14% of the isolates were sensitive and 46% were resistant to ≥4 antimicrobials. The most frequent resistotypes were resistance to sulphonamides (n=6) and sensitive

to all compounds (n=7). The most frequent MLVA profiles were 3-12-11-21-311 (n=3); 2-20-9-7-21 (n=2); 3-11-17-16-311 (n=2); 3-12-9-NA-311 (n=2); 3-12-10-NA-211 (n=2); 3-13-10-NA-211 (n=2); 3-14-14-13-311 (n=2); 3-14-14-15-311 (n=2); 4-14-4-NA-211 (n=2). The MLVA profiles were presented according to the order of the loci sequenced: STTR9, STTR5, STTR6, STTR10 and STTR3. We searched for similar *S. typhimurium* MLVA profiles in published data. A partial match was found for some profiles only. It could be concluded that the MLVA profiles of *S.* Typhimurium obtained in this study (the first ones for Bulgaria) have not been frequently isolated in other counties.

Keywords: Salmonellosis*; S. typhimurium;* zoonoses; genetic testing.

P4S2

GLYCAEMIA IN DOGS WITH DIFFERENT FORMS OF ACUTE PANCREATITIS

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ABSTRACT

The early diagnosis of pancreatic necroses is essential for adequate and efficient treatment. Routine research methods do not provide a reliable opportunity to predict the complications and contrast-enhanced computed tomography is very expensive for veterinary medicine. Ultrasound examination is also limited due to the edematous conditions of the pancreatic and peripancreatic structures and the presence of gas collections into the bowel. The purpose of this study was to establish the diagnostic and prognostic value of glucose (Gl) in various forms of canine acute pancreatitis. Seventeen dogs with spontaneous pancreatitis and 12 dogs with experimentally induced pancreatitis were used. In spontaneous cases, 72.2% of dogs with Gl >8 mmol/l had pancreatic necroses, whereas those with Gl <8 mmol/l, exhibited necroses in only 11%. It was concluded that 1) high Gl in acute pancreatitis were a poor prognostic sign and that 2) the probability for pancreatic necroses in patients with normal Gl was very low.

Keywords: glucose, acute pancreatitis, dogs.

P4S3

CHANGES IN LIPID AND MINERAL PROFILES IN COWS WITH SUBCLINICAL AND CLINICAL KETOSIS

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ABSTRACT

The aim of the present study was to establish the changes in lipid and mineral metabolism in cows from the Holstein breed with ketosis. Blood samples were obtained from 158 cows for determination of β-hydroxybutyrate (BHBA), non-esterified fatty acids (NEFA), total cholesterol, high-density lipoproteins (HDL-C), low-density lipoproteins (LDL-C), triglycerides (TG), calcium (Ca), phosphorus (P) and magnesium (Mg). The cows were divided in three groups: pregnant, recently calved and lactating. Target cows were classified as healthy (C), affected with subclinical (SCK) and with clinical ketosis (CK) depending on their blood BHBA levels.

The levels of NEFA in cows with SCK were elevated, while in cows with CK – decreased. The quantities of total cholesterol and HDL-C decreased, while the blood levels of LDL-C and TG were increased in cows with SCK and CK ketosis. The parameters of the mineral profile Ca, P and Mg were decreased in cows with SCK and CK.

Key words: ketosis, cholesterol, mineral profile, cows.

P4S4

MULTIPARAMETRIC STUDY OF THE QUALITY OF RAM SPERM STORED IN DIFFERENT EXTENDERS AND TEMPERATURE REGIMES

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ABSTRACT

The aim of the study is to determine the influence of different extenders and temperature regimes for ram sperm storage on spermatozoa parameters and enzyme activity, with a view to optimizing protocols for in vitro storage. The study was performed with 5 ejaculates from 5 rams, diluted with 6AG extender (sodium citrate, lactose, sucrose, egg yolk and glycerol) and 6AG + Trolox®. All ejaculates were monitored for changes in spermatozoa parameters: motility, kinematic parameters, morphology and sperm plasma activity of the enzymes - CK, AST, ALT, ALP and GGT, after collection and storage for 24h at 5°C, -80°C and -150° S. As a result of the research, it was found that the addition of Trolox® to 6AG extender resulted in a higher percentage of motile and morphologically normal sperm compared to the use of 6AG alone, as well as a positive effect on enzyme activity. The addition of Trolox® to 6AG extender preserved the quality of ram spermatozoa after storage at -80°C and -150°C.

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Keywords: sperm, extenders, temperature regimes, ram.

P4S5

OXALATE CRYSTALLURIA – EARLY INDICATOR FOR ACUTE ETHYLENE GLYCOL INTOXICATION IN RABBITS

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ABSTRACT

Six female New Zealand white rabbits were treated internally by gavage with ethylene glycol at a dose of 3.3 g/kg. Urinalysis and ultrasound examinations of the test subjects were performed at 0, 4, 8, 16, 24, and 48 hours after the treatment. At hour 0, only calcium carbonate crystals were observed in the urine. Four hours after treatment with ethylene glycol, single crystals of calcium oxalate monohydrate were detected in the sediment. Eight hours after the treatment, abundant calcium oxalate dihydrate and calcium oxalate monohydrate crystals were present in the urine, but no calcium carbonate crystals were established. The increase in renal echogenicity started at the 16th hour and was clearly visible at the 24th hour after the treatment with ethylene glycol.

Calcium oxalate crystals were detected in the urine of rabbits 4 hours after oral intake of ethylene glycol. Oxalate crystalluria may be an early marker of ongoing ethylene glycol intoxication.

Keywords: urine sediment, ethylene glycol, rabbits.

P4S6

3D PRINTED PROSTHETICS IN VETERINARY MEDICINE

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ABSTRACT

The application of 3D printing in veterinary medicine is a great development in creating orthotic and prosthetic devices for pets. This review article examines the development of prosthetics in veterinary medicine, following their evolution from ancient materials to digital fabrication methods. Moving to 3D printing brings several advantages, such as improved customization, shorter production time, and the capability to tackle complicated anatomical issues. Selecting materials is important, with a variety of biocompatible metals and polymers used for orthopedic purposes. The process of creation includes 3D scanning, digital modeling, and fabrication to produce personalized designs for patients using radiological imaging. An example from a real medical case illustrates how 3D printing technology is used to create a tailor-made prosthetic beak for an Oriental stork that has suffered avulsion injuries.

Keywords: 3D printing, prosthetics, orthotic devices.

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