University of Agronomic Sciences
and Veterinary Medicine of Bucharest

Faculty of Veterinary Medicine

International Conference

"Agriculture for Life, Life for Agriculture"

BOOK OF ABSTRACTS

Section 4

VETERINARY MEDICINE

2023
Bucharest

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COMPARATIVE LEVELS OF LEAD AND CADMIUM IN SHEEP WOOL AND COW HAIR

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Abstract

This study aimed to examine the use of wool from sheep and hair from cows raised in the commune of Bran, Romania as a possible indicator of environmental exposure to lead and cadmium. In addition, the samples collected from sheep and cows were analysed both unwashed and washed in order to determine a possible difference between lead and cadmium concentrations. The samples were analysed for heavy metal concentrations using Inductively Coupled Plasma Mass Spectrometry. Statistical analysis showed that there are no significant differences between the concentrations of lead and cadmium in washed and unwashed sheep wool and cow hair, respectively.

Key words*: lead, cadmium, sheep, cows, ICP-MS.*

HEALTH BY PLANTS: ANTISPASMODIC PROPERTIES OF TRUNK BARK OF *Acacia nilotica* var. *adansonii* (Guill and Perr) O. Ktze (*Mimosaceae*), PLANT USED TO TREAT OF DIARRHEA AND COLIC IN TRADITIONAL MEDICINE

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Abstract

The results obtained by Boly et al. (2018), showed that extract of Acacia nilotica had anthelmintic properties. The objective of this study was to evaluate in vitro antispasmodic properties of the aqueous extract of the trunk bark of Acacia nilotica. Method: A maceration of the powder of the bark of the trunk of Acacia nilotica was realized. After the extraction, the phenolic compounds content of the extract was determined. The antispasmodic activity (Magnus, 1904) realized at different concentrations (260 µg/ml; 560 µg/ml; 1160 µg/ml; 1960µg/ml; 2960µg/ml) of the extract. Dosage showed that extract had a high content of phenolic compounds, tannin more than flavonoids. Extract also showed a better antispasmodic effect (IC50= 1.302 mg/mL; 1.902 mg/mL) at 1 mM of contraction induction with acetylcholine and 160 µg/mL with BaCl2. Conclusion: Aqueous extract of Acacia nilotica has antispasmodic properties. Its use in traditional medicine to treat of diarrhea must be encouraged

Key words*: Acacia nilotica, antispasmodic, dosage, diarrhea.*

COMPARATIVE HISTOLOGICAL STUDY BETWEEN FILLET MUSCLE TRADITIONAL PREPARATION AND INDUSTRIAL PREPARATION

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Abstract

The aim of this paper is to highlight the invaluable contribution of histological techniques used to assess the quality of meat products deemed for human consumption. Additionally, histological analyses assist with the study of what effect natural vegetarian solution extracts have on the products' quality, effect reflected by the impact on preservation properties of meat products. One hundred industrially and traditionally processed and preserved fragments of tenderloin samples were prepared for histological analysis. After prelevation tissue samples were fixed with formalin solution. Samples were individually rinsed with distilled water, stained with hematoxylin-eosin and with Mallory technique. Results: muscle fibres rarely displayed their biological integrity and numerous vacuole were identified as a result of the use of brine in the industrially processed samples. Traditionally processed tenderloin displayed an unaltered muscular fibre structure. The quality of the traditionally processed product was assessed as superior when compared to the industrially processed product. Conclusion: traditional methods of preservation were assessed as giving a superior quality to the end meat product.

Key words*: histological analyses, industrial, muscle fillet, traditional.*

IDENTIFICATION OF THE SOD1:c.118G>A MUTATION RESPONSIBLE FOR CANINE DEGENERATIVE MYELOPATHY

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Abstract

Canine degenerative myelopathy (CDM) is a recessive autosomal disease with incomplete penetrance, characterized by neurodegenerative processes of the spinal cord. The aim of this study was to identify the SOD1:c.118G>A mutation responsible for CDM in a few individuals belonging to the following large dog breeds. German Shepherd (n = 2), Bucovina Shepherd (n = 4) and Romanian Mioritic Shepherd (n = 2) which were tested for the presence of the mutation. Oral swab samples were collected and analyzed by PCR-RFLP to identify the presence of c.118G>A mutation in exon 2 of the SOD1 gene. The mutation was identified in half of the tested dogs (4/8; 50%; CI 95% 21.52-78.48). One German Shepherd Dog, with paralysis on the hind legs, was genotyped as homozygous for mutant alleles. The second German Shepherd Dog and both Romanian Mioritic Shepherd Dogs tested were genotyped as heterozygous. All the four Bucovina Shepherd Dogs were genotyped as homozygous dogs for the normal allele. To our knowledge, this is the first documentation of the mutation associated with CDM in a Romanian dog breed.

Key words*: canine degenerative myelopathy, PCR-RFLP, SOD1, Romanian Shepherd Dogs.*

SECONDARY CARDIAC INVOLVEMENT OF MEDIASTINAL T-CELL LYMPHOMA IN A YOUNG SCOTTISH FOLD CAT - CASE REPORT

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Abstract

Mediastinal lymphoma in cats affects the lymph nodes in the cranial mediastinum and/or the thymus. The tumor comprises 10-20% of feline lymphomas. Males appear to be overrepresented. A 2-year-old neutered male Scottish Fold cat with hypertrophic cardiomyopathy treated according to the results of the medical investigation was presented for a second opinion consult. X-ray examination showed a gigantic neoplastic mediastinal mass, and the ultrasound examination revealed a right-sided deviation of the heart axis. Due to the poor prognosis, the cat was euthanized, and the necropsy was performed. Mediastinal T-cell lymphoma with neoplastic invasion into the pericardium and discreetly into the epicardium was diagnosed based on gross pathology, histopathology, and immunohistochemistry. The left atrium presented endocardial fibroelastosis, while the ventricular myocardium showed intercellular edema, myocardocyte laceration, vacuolar and hyaline degeneration, and necrosis in small, isolated areas. Additionally, the lung displayed diffuse collapse, edema, and congestion.

Key words*: fibroelastosis,T- lymphocytes, heart metastasis, CD3, immunohistochemistry.*

MICROSCOPIC DIFFERENCES BETWEEN MUSCLE TISSUE IN BIRDS RAISED IN HOUSEHOLD VS. INTENSIVE SYSTEM

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Abstract

Following numerous pieces of research that highlighted the value of histological techniques applied in assessing the quality and safety of meat food products, a histological examination has become mandatory in many countries. This paper describes in detail the quality characteristics of poultry meat from two different rearing systems. Fragments were taken from the breast of chickens raised in a household system and an intensive industrial system. The fragments taken were processed using the usual histological techniques and stained by the H&E (Hematoxylin & eosin) and Mallory staining methods. After analyzing the permanent histological preparations, numerous differences were observed between the two growth systems. In the household system, the muscle fibers are more developed, which shows that they do a lot of movement, at the same time, the white adipose tissue is less represented. In the industrial system, the muscle fibers show a smaller number of striations, which indicates that they do no movement, a large amount of white adipose tissue being observed. Through the histological evaluation of the chicken muscle tissue from the two different growth systems, a series of differences resulted.

Key words*: intensive system, household system, chicken meat.*

RESEARCH ON THE VALUES OF SOME ELECTROCARDIOGRAPHIC PARAMETERS IN GOAT RECORDED USING DUBOIS LEADS

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Abstract

The aim of the present research paper was to evaluate the main electrocardiogram parameters in goat. The electrocardiograms were performed on a batch of 20 Carpathian goats, using the Dubois lead system. By analysing the results obtained, we concluded that, using the Dubois lead system, the best method of performing the electrocardiogram in goats is using lead II, the amplitude values being 0.117 mV for the P wave, 0.310 mV for the ventricular complex and 0.386 mV for the T wave, while lead I is not suitable for the EKG exam in this species, due to the extremely low waves' amplitude, resulting in an almost obscure recording. Regarding the duration of the electrocardiographic waves, the values obtained were 0.048 ± 0.016 seconds for the P wave, 0.046 ± 0.014 seconds for the QRS complex and 0.088 ± 0.016 seconds for the T wave. As for the segments and intervals, the durations obtained were 0.062 ± 0.020 seconds for the P-R segment, 0.246 ± 0.014 seconds for the Q-T interval, 0.384 ± 0.037 seconds for the P-T interval and 0.096 ± 0.020 seconds for the T-P segment. The heart rate, electrographically calculated, was 128.5 bpm ± 12.215.

Key words*: goat, leads, Dubios lead system.*

FATAL GOUT IN A MUTE SWAN (*Cygnus olor*): RETROSPECTIVE ANALYSIS

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Abstract

The article describes and analyzes the results of the pathological examination of a mute swan (age 2 years 8 months) who died of gout and was hatched and raised in captivity. The swans were fed combined feed for poultry and periodically - minced meat (medication was added to the minced meat). During the complete dissection of the corpse of the dead swan, low-power optical lenses were used to better visualize the changes. Thickening of the visceral serous membranes due to deposits of a chalk-like substrate (localized on the air sacs, liver capsule, pericardium) was detected. Cardiac pathologies dominated the severity of damage in the dead swan`s body: crystal-induced valvulitis with massive vegetations (tophus), sclerosis of damaged areas of heart valves. A complex of cardiac pathologies and their effects (venous stasis, pulmonary edema) played a key role in the thanatogenesis of the studied swan.

Key words*: gout, mut swans, pathoanatomical analysis.*

STUDY REGARDING THE DISTRIBUTION OF THE CELIAC ARTERY IN NEWBORN CALVES

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Abstract

Ruminants are characterized by the presence of four separate gastric compartments. The volumetric ratio between the proper stomach and the compartments preceding it is not the same throughout the life of the individual. At the early stage of a calf life, the proventriculus is reduced and is not involved in the digestive process. In the specialized literature, there are insufficient data on the distribution of vascular formations in early life and the following evolution of these structures. Our study aims to identify some characteristics of the branches of the celiac artery at an age when the only functional compartment is the abomasum. Following the dissection of the arteries, the classic distribution of some formations was found, but also specific elements: the poorly development of the reticular artery, the presence of a collateral from the left ruminal artery destined for the cardia and the presence of three hepatic branches. Surgery in young cattle requires a thorough knowledge of possible individual arterial variations.

Key words*: vascularization, celiac artery, calf, digestive system.*

THE AGE IMPACT ON THE URINARY BEHAVIOUR IN CATS - COMPARATIVE CASE STUDY

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Abstract

The urinary behaviour in cats can be influenced by a series of physiological factors like age, physiological status and water intake. The present study highlights the age impact on the urinary behaviour, in terms of frequency and behavioural manifestation duration in different age groups. The study was carried out on 3 groups of clinically healthy cats, each consisting of 10 individuals grouped according to age: group 1 - youth, aged 3 months - 2 years old, group 2 - adults, aged 2 - 10 years old, group 3 - seniors, aged above 10 years old. The urinary behaviour was studied by performing individual ethograms, based on 24 hours/day video recordings, 5 consecutive days. The results showed that the highest urinating frequency/24 hours was recorded in youth, 62% higher than in adults, while in seniors the average frequency was 48.5% higher than in adults. Concerning the average length of the urinating session, the lowest mean value was recorded in youth, 27.9 seconds, 32.6% lower than adults, while in seniors the average value was 53.2 seconds, 28.5%, respectively 90.7% higher than adults, respectively youth.

Key words*: urinary behaviour, domestic cats, age.*

PCR PROTOCOLS FOR MOLECULAR SEXING IN MONOMORPHIC BIRDS

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Abstract

More than a half of bird species around the world are monomorphic, therefore they do not show distinct sexual dimorphic traits. The paper aims to present three molecular methods for sex identification of monomorphic companion birds. Samples of feathers, oral swabs and blood were collected from Psittaci formes (Ara ararauna, Psittacus erithacus and Psittacula krameri) and Columbiformes (Columba livia domestica). All samples were tested by three different PCR protocols in order to identify the chromo-helicase-DNA-binding (CHD1)-W gene and CHD1-Z genes in females and the CHD1-Z gene in males. Two protocols were conventional PCR, using P2 and P8, respectively P2 and NP primers, while the third protocol was a multiplex PCR using P0, P2 and P8 primers. As a conclusion, all three PCR protocols can be used for molecular sexing of monomorphic Psittaciformes and Columbiformes companion birds. Feather, oral swab and blood samples provided adequate DNA templates for the sex identification of birds.

Key words*: monomorphic birds, feathers, oral swab, blood, PCR.*

THE IMPACT OF AGE ON SOME BIOCHEMICAL PARAMETERS IN FELINES WITH CHRONIC KIDNEY DISEASE

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Abstract

According to specialty literature, the incidence of chronic kidney disease in felines had substantially risen in the recent years. This research is intended to show a correlation between the increasing age of felines (over 10 years) and the variations of some biochemical parameters (urea, creatinine, phosphorus and also symmetric dimethylarginine), in the progression of the chronic kidney disease. The research was performed over a period of two years at the University Emergency Hospital Prof. univ. Dr. Alin Bîrțoiu, Bucharest, on a total of 20 cases of felines suspected of chronic kidney disease, 10 of them older than 10 years were considered suitable for this study. One feline, an 11-year-old patient in uremic coma (n = 1), had the highest serum phosphorus, urea, creatinine and symmetric dimethylarginine levels. The other nine patients (n = 9) between 11 and 15 age had urea levels higher than 79.2 mg/dl, creatinine levels above 2 mg/dl and serum phosphorus levels higher than 7.35 mg/dl.

Key words*: felines, chronic kidney disease, biochemical parameters.*

MORPHOLOGICAL PARTICULARITIES OF THE ZONOSKELETON, STYLOPODIUM AND ZEUGOPODIUM OF THE THORACIC LIMB IN THE EURASIAN BROWN BEAR (*Ursus arctos arctos*) - CASE STUDY

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Abstract

This study aims to analyze and describe the morphological features of the bones that comprise the pectoral girdle (zonoskeleton), stylopodium, and zeugopodium of the thoracic limb of the Eurasian brown bear (Ursus arctos arctos) from Romania. The bones of a brown bear specimen, belonging to the collection of the discipline of Anatomy, were used. This species is protected and hunting is restricted. These particularities play an important role in differentiating this species from other carnivores. The data in the specialized literature is limited, to bone pathology, mechanics of the forelimb joints, and skull particularities. The analysis of the bones` morphological particularities leads to the following conclusions. The ratio of the supraspinous fossa and the infraspinous fossa is 1:1, as seen in most carnivores. In this species, the infraspinous fossa is limited caudally by a straight and high thoracic edge (supplementary spine), smaller compared to the scapular spine. Posterior to the additional spine is another surface, intended to insertthe teres major muscle. The humeral tubercles are short, and the lateral epicondyle crest is high, sharp, and drawn craniolaterally.

Key words*: bear, infraspinous fossa, humeral tubercles, lateral epicondyle crest.*

IMMUNOGLOBULINE-G LEVEL AND BODY WEIGHT OF BALB/C RECEIVING COMBINATION TREATMENT OF LYOPHILIZED *Curcuma longa* AND *Curcuma xanthorrhiza* DURING AN ANGIOGENESIS EXPERIMENTAL

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Abstract

*Immunoglobuline synthesis is largely determined by the presence of the type of antigen that enters the body. However, various biological bioactive substances have the potential to boost individual immunity processes. In this study, 5 weeks old BALB/c was used. This study aims to evaluate the role of the combination of Curcuma xanthorrhiza and Curcuma longa lyophilisate on serum immunoglobuline-G level, angiogenesis process and BALB/c body weight. The bio-active substances were distrubuted through drink water. This study used a randomized complete design arranged with factorial 2*4. The results showed that treatment had no significant effect on IgG levels and the process of angiogenesis (P>0.05), but had a significant effect on body weight (P<0.05). We concluded that combination of Curcuma xanthorrhiza and Curcuma longa lyophilisate could be used in wound healing during an angiogenesis process.*

Key words*: Curcuma, immunity, liopylisate, body weight, BALB/c.*

EVOLUTION OF SEMEN TRAITS IN ROOSTER FED ON VITAMIN A, VITAMIN E OR VITAMIN A+E SUPPLEMENTED DIETS

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Abstract

The paper presents the effects of long-term dietary supplementation with vitamin A (600 IU or 180 mg/kg diet), vitamin E (600 IU or 270 mg)/kg diet) or vitamin A+E (same values) on some biological traits of sperm in Cornish hybrid roosters from 40to 57 weeks of age versus control. Ejaculate volume, sperm density, and motility were analyzed weekly from 47 to 57 weeks of age of the roosters. The analyzed traits decreased from week to week reaching the levels of the control two or three weeks later than control, showing an effect of improving of the analyzed properties of the sperm and prolonging the reproductive capacity of the roosters at least up to the age of 57 weeks of the roosters. These effects were recorded for both A and E investigated vitamins. Vitamin A better (significantly) improved ejaculate volume and sperm density, while vitamin E predominantly improved sperm motility. The association of the two vitamins in dietary supplements did not lead to potentiating, or mutual inhibition phenomena of the biological traits of sperm in any aged roosters.

Key words*: roosters, sperm traits, vitamin A, vitamin E.*

EFFECT OF LONG-THERM VITAMIN A AND VITAMIN E SUPPLEMENTED DIETS ON THE REPRODUCTIVE SYSTEM MORPHOLOGY IN ROOSTERS

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Abstract

The paper presents the effects of long-term dietary supplementation with vitamin A and vitamin E on the testicular and epididymal morphology in roosters. The roosters were fed on diets enriched in vitamin A (600 IU/kg) and/or vitamin E (60 IU/kg) from 40 to 57 weeks of age. Histology and morphometry studies were performed on the testicle and epididymis duct at the end of the experimental feeding. A better preservation of the seminiferous epithelium, refinement of seminiferous pericanalicular connective tissue, small islands of Leydig cells as well as the relative maintenance of the richness of the seminiferous pericanalicular blood vasculature are noted for vitamin supplemented groups versus control. The two vitamins diminished the age-induced thickness and structure disorganization of the epididymal epithelium. Both vitamins led to the maintenance of Sertoli cell density ($P < 0.01$ versus control). The lumen epididymal fluid contained smaller amount of detached cytoplasmic fragments, cilia, and nuclei versus control. Vitamin A mainly protects the spermatogenesis line, while vitamin E mainly protects Sertoly and Leydig cells. No mutual inhibition or potentiating effects of the two vitamins were revealed.

Key words*: epididymis, rooster, testicle, vitamin A, vitamin E.*

MICROBIAL CONTAMINATION OF PHARMACEUTICAL PRODUCTS - TRUTH OR MIT?

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Abstract

The paradigm of the need to test finished products, especially those pharmaceuticals which contain antimicrobial substances, continues to be present. Microbiological quality must be taken into account in all critical areas of concern in the development of robust formulations of pharmaceutical product (raw material control, manufacturing process, quality tests of product, packaging design, storage and usage, etc). Contamination of pharmaceuticals with microorganisms whether they are harmful or nonpathogenic can bring changes in physicochemical characteristics of the medicines and may have repercussions on the product safety. The requirements of the European Pharmacopoeia regarding the classification of microbiological parameters within certain limits for any product, regardless of the pharmaceutical form, are clear and unambiguous and the quality of the finished product must meet the established criteria.

Key words*: pharmaceutical products, antimicrobial substances, microbial contamination.*

A CASE REPORT: INCIDENTAL NECROPSY FINDING OF CANINE EOSINOPHILIC PULMONARY GRANULOMATOSIS IN A DOG WITH *Dirofilaria immitis* INFESTATION

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Abstract

Known as the heartworm disease, the nematode is usually found in right heart chambers, pulmonary artery and corresponding branches in dogs. Deeper intrapulmonary migration of this nematode and subsequent pulmonary eosinophilic granulomas are rarely encountered in animals. The present case report describes a necropsy incidental finding of Dirofilaria immitis infestation in an adult half-breed female dog associated with multiple eosinophilic granulomas in the pulmonary diaphragmatic lobes. Gross examination revealed extended areas of pulmonary consolidation and numerous, variable sized granulomas, with white-grayish color and firm consistency. Single or multiple coiled nematodes have been identified after cross-section of granulomas. Histopathologically, parasitary granulomas with thick fibrous capsule, large numbers of mononuclear cells alongside a large number of eosinophiles have been identified. Aditional areas of bronchointerstitial pneumonia, consolidation and pulmonary fibrosis were associated with chronic pulmonary congestion, thrombosis and corresponding lesions of pulmonary hypertension.More often described in humans with Dirofilaria immitis infestation, the pulmonary eosinophilic granuloma seems to also be a lesion encountered in dogs. Therefore, this nematode needs to be taken into account as etiologic agent of granulomatous pneumonia in this species.

Key words*: Dirofilaria immitis, heartworm disease, necropsy, eosinophilic pulmonary granuloma.*

CLINICAL SCIENCES

A REVIEW OF PATHOGENESIS, DIAGNOSTIC APPROACHAND TREATMENT STRATEGIES OF UTERINE PATHOLOGY IN MARES

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Abstract

Uterine pathology is one of the leading causes of reproductive failure in mares. The aim of this paper is to review some of the most important uterine pathologies in mares, such as endometritis, endometriosis, pyometra, uterine cysts. This review focuses on evaluating the pathogenetic mechanism of each disorder, the diagnostic methods, including: physical examination of the reproductive tract, ultrasound, endoscopy, biopsy, cytology and culture, as well as the treatment strategies for each disease. A specific emphasis is placed on endometritis, as one of the most common uterine pathologies encountered in mares. The concepts of resistance and susceptibility to endometritisare addressed, discussing the immunological and contractile functions of the uterus and the way in which abnormalities at one or both of these levels can make certain individuals more prone to developing endometritis.

Key words*: mare, uterine pathology, endometritis, review.*

BOVINE HERPES VIRUS QUANTIFICATION BY QPCR IN THE BLOOD OF ASIMPTOMATIC LATE-TERM COWS

Nicolae Tiberiu CONSTANTIN, Florin Petrișor POSASTIUC, Florin IORDACHE, Loredana STANCA, Ovidiu Ionuț GEICU, Liviu Luca BÎLTEANU, Andreea Iren ȘERBAN

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Abstract

Bovine herpesvirus-1 (BHV-1) infections can be asymptomatic nonetheless it can also cause systemic illness in young calves and several diseases in adult cattle, including infectious bovine rhinotracheitis, infectious pustular vulvovaginitis and abortions. BHV-1 can also establish recurrent life-long latent infections after primary infection. For viral load detection and quantification, we analysed blood samples form 19 asymptomatic pregnant cows from three breeds (Montbéliard, Holstein, and Holstein-Friesian). Viral DNA extraction from plasma was performed using the Nucleic Acid Extraction or Purification Reagent Kit (Medicalsystem Biotechnology Co., Ltd. Ningbo, China), and the Auto-Pure 32A automatic extractor (Allsheng Instruments Co., Ltd. Hangzhou). For qPCR amplification the BHV-1 putative fibronectin binding protein Genesig Advanced Kit (Primerdesign Ltd, UK) was used. Amplification was performed on a CFX96 Touch Real-Time PCR Detection System (Bio-Rad Laboratories, Hercules, CA, USA). After analysis of the amplification curves only one sample out of 19 was positive with a viral load of 4×103 copies/mL of blood. The affected animal was asymptomatic, which emphasizes the need for recurrent testing for transmissible infectious pathogens, and increasing biovigilance for minimizing eventual economical losses.

Key words*: pregnant cows, blood, bovine herpes virus, QPCR analysis.*

PARTIAL INTRAVENOUS ANESTHESIA WITH ISOFLURANE AND ALFAXALONE FOR AN ADULT SHEEP UNDERGOING SOFT TISSUE SURGERY

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Abstract

A 6-year-old Tsurcana male sheep was anesthetized in hospital conditions for a soft tissue surgery - bilateral orchidectomy. After intramuscular premedication with midazolam (0.2 mg/kg), butorphanol (0.1 mg/kg), and ketamine (5 mg/kg), anesthesia was induced intravenously with alfaxalone (1.6 mg/kg IV). The subject was intubated with an 8.5 mm endotracheal tube and anesthesia was maintained with isoflurane (1.5-2.5 vol % in O2) and 3 boluses of alfaxalone (1.0 mg/kg) delivered intravenously every 10 minutes. The total surgical time was 40 minutes and the whole inhalation anesthesia time was 78 minutes, including the preparation of the subject at the beginning and after the surgical procedure. The mean arterial blood pressure was maintained at 80 mmHg throughout anesthesia, the average end-tidal CO2 at 51 mm Hg, the mean oxygen saturation of haemoglobin was 99.5%, the mean heart rate was 130 beats per minute, respectively 31 respirations per minute. In conclusion, this anesthetic protocol may be clinically applicable for a male sheep undergoing invasive soft surgery, especially if there is a particular case involving a risk patient.

Key words*: alfaxalone, isoflurane, sheep, surgery.*

THE IMPORTANCE OF CLINICAL EXAMINATION FOR THE DIAGNOSIS OF HEART DISEASE AND LEFT CONGESTIVE HEART FAILURE SYNDROME IN DOGS AND CATS- A REVIEW

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Abstract

The aim of this systematic review is to present the clinical examination of the cardiovascular system in dogs and cats. The heart is an organ deeply interconnected with the hemodynamics of the entire body. Anamnesis and physical examination allow early diagnosis of heart disease. The stages of the examination are represented by inspection, palpation, percussion, auscultation and thermometry. This can establish the treatment schedule, prolonging the patient's life and improving its quality. Important clinical changes in left congestive heart failure syndrome must be quickly and correctly identified: respiratory distress, cough, syncope, heart murmur, or gallop sound. This allows the establishment of emergency therapeutic protocol. Clinical monitoring is still important for both the clinician and the owner. It shows the effectiveness of the action of drugs and the risk of cardiovascular decompensation, requiring adaptation of therapy

Key words*: clinical, cardiovascular, dyspnea, murmur, heart failure.*

DERMAL MELANOMAS IN A GREY HORSE: CASE STUDY

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Abstract

Melanoma is a relatively common type of cancer in horses, particularly in those with gray or white coats. As horses age, the likelihood of developing melanoma increases, and it is estimated that around 80% of aged populations of gray horses will develop the condition. A 20 year-old grey Standard bred female was referred to the Faculty of Veterinary Medicine Bucharest presenting with insidious weight loss over the past year, depression, inappetance, cutaneous masses and pigmented peri-anal masses likely melanomas. Clinical examination revealed normal respiratory rate, cardiac frequency în normal parameters. Different firm well-circumscribed masses were also palpable in the various locations. The X-ray revealed the absence of pulmonary masses or pathogenetic consequences of primary tumor, without modifications of the pulmonary area and the absence of specific pattern lung. The ultrasonographic examination revealed the presence of inhomogeneities with areas of hypoechogenicity, well delimited by a hyperechogenic capsule. . The cytological aspects characteristic of the diagnosis of melanoma were presented and identified regardless of the collection site.

Key words*: dermal melanomas, horse.*

STUDY ON TICK INFESTATIONS OF SMALL RUMINANTS, IN SOUTHERN ROMANIA

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Abstract

Ticks (Acari: Ixodidae) are the most important vectors of zoonotic diseases, presenting a high risk of causing diseases in animals and humans. The purpose of this study was to investigate the prevalence of ticks species infesting small ruminants in Southern Romania. The study was undertaken from March 2019 to October 2020, including nine sheep and goats flocks in four Prahova County premises. A total number of 2463 sheep and 1202 goats were examined and 76.53% of sheep and 81.2% of goats respectively were infested. Overall, from the infested animals 2233 ticks were collected and the following species were morphologically identified: Haemaphysalis punctata, with an overall prevalence of 51.86%, followed by Dermacentor marginatus (19.08%) and Ixodes ricinus (7.09%). The annual dynamics of tick infesting small ruminants in the investigated areas showed maximum tick abundance in April, for H. punctata and D. marginatus, and May for I. ricinus, respectively. To reduce the high prevalence of ticks and their impact on productivity in small ruminants, immediate attention is required as control interventions.

Key words*: infestations, small ruminants, southern Romania, ticks.*

COMPLEX INVESTIGATIONS IN DIAGNOSIS OF MAREK'S DISEASE IN POULTRY

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Abstract

Marek`s Disease is an oncogenic disease thataffects both commercial and backyard poultry, caused by Alphaherpesvirus. Lymphoproliferative syndromes are characterized by lymphoma and are most commonly represented by T lymphocyte proliferation, with involvement of several visceral organs. Six poultry from the same population, aged between 1-12 years, non-vaccinated, have been examined after death. The following investigations have been done: gross examination, histopathology, immunohistochemistry (anti-CD3 antibody for T-lymphocytes and anti-PAX5 antibody for B-lymphocytes), and polymerase chain reaction (RT-PCR). Macroscopically, all the poultry presented hepatic tumour nodules, along with tumoral enlargement of the sciatic nerve. Inconsistently, neoplasms in other organs, such as the spleen, heart, pharynx, and ovary, have been observed. The histopathological findings on the tumour mass showed a proliferation of small to large lymphocytes. Tumour cells were characterized by large pleomorphic nuclei with prominent nucleoli. The immunophenotype of transformed cells was identified as CD3 positive by immunohistochemistry; in contrast, PAX5 was negative. Virus presence confirmation was achieved through PCR. In conclusion, Marek`s Disease can manifest in chronic form, at any age, being characterized by pleomorphic lymphocytic infiltration on a systemic involvement.

Key words*: Marek's Disease, T lymphocytes, anti-CD3 antibody, systemic.*

THERAPEUTIC MANAGEMENT IN A POSTTRAUMATIC HERNIA IN A GOAT - STUDY CASE

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Abstract

Abdominal hernia is indeed a condition that can occur in animals. It is a result of a weakness or defect in the abdominal wall that allows abdominal organs, such as the small intestine, rectum, prostate, bladder, or fat, to protrude through the wall and into the subcutaneous tissue. The treatment options for abdominal hernia in animals depend on the severity of the hernia, the size of the defect, and the overall health of the animal. The primary method of treatment is often surgical repair, which may involve primary suturing of the abdominal wall, muscle flaps, polypropylene mesh, or collagen grafts. In some cases, conservative management may be appropriate, such as reducing the hernia by manual manipulation or using supportive therapy to help the animal recover. However, in most cases, surgical intervention is required to prevent further complications, such as bowel obstruction or strangulation. It is important to note that abdominal hernias can be a serious condition and should be evaluated and treated by a veterinarian as soon as possible. Early detection and treatment can lead to a successful outcome for the animal.

Key words*: hernia, surgery, goat.*

FIELD CASTRATION OF TEN STALLIONS: ANESTHESIA AND RECOVERY MONITORING

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Abstract

This study evaluates an anesthetic protocol for 10 mixed-breed horses (2-22 years old) that have undergone field surgical castration. Premedication was administered intravenously in the left jugular vein with Detomidine ($\bar{X}$ = 0.02 mg/kg). Induction was achieved with a combination of Ketamine ($\bar{X}$ = 2.38 mg/kg) and Midazolam ($\bar{X}$ = 0.038 mg/kg), administered intravenously, in the same syringe. Heart rate ($\bar{X}$ = 43.46 bpm), respiratory rate ($\bar{X}$ = 20.65 bpm), capillary refill time ($\bar{X}$ = 1.26 sec), Oxygen saturation ($\bar{X}$ = 85.73), and rectal temperature ($\bar{X}$ = 37.15°C,) were measured from induction until full recovery. We evaluated the time between premedication and induction (T0 - $\bar{X}$ = 5.5 minutes), from induction until lateral recumbency (T1 - $\bar{X}$ = 1.4 minutes), surgery duration (T2 - $\bar{X}$ = 10.5 minutes), time from the surgery until recovery in standing position (T3 - $\bar{X}$ = 22.9 minutes). All animals required assistance until complete recovery and were ataxic while standing/walking for T4 - $\bar{X}$ = 12.3 minutes. The anesthetic protocol provided good analgesia and muscle relaxation. All horses recovered well and no postoperative complications were seen.

Key words*: anesthesia, equine, castration, midazolam, recovery.*

EFFICIENCY OF SURFACE DISINFECTION BY NEBULIZATION USING CUBE ATOMIZERS IN A VETERINARY UNIT - PRELIMINARY STUDY

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Abstract

Maintaining proper asepsis and hygiene conditions in spaces intended for veterinary surgery remains a paramount for compliance with professional ethics. Moreover, environmental surfaces can contribute to the spread of cross-infections, and therefore constitute a likely transitory site for the accumulation of microorganisms. The aim of the current study was to evaluate, implement and measure the efficacy of a novel nebulization technique method for surface disinfection. The procedure was carried out in ten enclosed spaces used as surgery rooms within veterinary clinics. Disinfection was performed using Cube Atomizers, a nebulizer with a revolutionary spraying system, which transforms the biocide substance into microparticles that persist in the air for a long period of time, ensuring decontamination of the treated volume (air and all types of surfaces). Thus, using an approved biocide, the device ensured a successful disinfection of spaces, eliminating bacteria, and other biological pathogens. The microbiological tests were carried out before and after disinfection on different growth mediums (Agar for the total bacteria count, Chapmann for Staphylococcus, Holmes for Streptococcus, Levine for Gram-negative Cocci and Sabouraud for fungi). An increased efficiency of disinfection was observed, with a significant decrease in total bacteria count of almost 90-97% and the value of colony-forming units reaching 0 after nebulization in some cases; for Staphylococcus (Chapmann) there was a significant decrease, between 85-95%; for Streptococcus (Holmes) the decrease was almost 90-99%; for Gram-negative Cocci (Levine) the decrease was almost 92-99%; and for fungi (Sabouraud) the decrease was around 50%. The Cube Atomizers device is easy to use, can be fitted anywhere and guarantees safety for the user, environment, and all treated materials. Its revolutionary system ensures decomposition of the biocide into microparticles, leaving no residues.

Key words*: disinfection, Cube Atomizer, veterinary unit, nebulization.*

COMPARATIVE LEVELS OF ANTIBIOTIC RESISTANCE IN PIGS RAISED UNDER DIFFERENT TECHNOLOGIES

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Abstract

Swine are considered one of the most important species of food animals worldwide, the majority of meat for human consumption in numerous countries being represented by pork. Sometimes heavily treated with antibiotics to maintain herd health, swine could be considered a sentinel species for humans in respect to antibiotic resistance. The research compared the dynamics of antibiotic resistance by distance between an intensive farm (A), where antibiotic use is considerable, and small households, with no antibiotic use, at 5 and 10 kilometers from A. Twenty-eight clinically healthy pigs (n = 16, A, n = 6 B, n = 6 C) were sampled. Standard microbiological techniques, identification of the strains by Vitek 2 system and Kirby Bauer test to assess the antimicrobial resistance were applied. Of the total bacterial species identified, E. coli (72%) dominated while 10% were Gram+ bacilli and 10% Gram - unidentified coco-bacilli. The highest MAR (multiple antibiotic resistance) index was calculated in E. coli (MAR = 0.88, B) and also two other strains from A (MAR = 0.77). The high MAR indices stand for the presence of antibiotic resistance in untreated animals, urging for a more accurate surveillance of the phenomenon.

Key words*: swine, farming technology, antibiotic resistance, spatial dynamics.*

SEROLOGICAL SCREENING FOR *Neospora caninum* INFECTION IN A DAIRY CATTLE FARM WITH REPRODUCTIVE DISORDERS, IN SOUTHEASTERN ROMANIA

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Abstract

Neospora caninum is an apicomplexan protozoan parasite that causes reproductive disorders in cattle worldwide. Despite the high seroprevalence reported in Romania, there are limited data on N. caninum infection in dairy cattle, and no studies have evaluated the presence of infection over time in a limited area. Therefore, this study aimed to asses the seroprevalence of N. caninum in a dairy cattle farm in Southeastern Romania where a previously study reported about the cattle exposure to N. caninum infection. A total of 85 cattle, assigned in four groups, according to the reproductive status (repeated breeding syndrome, history of abortion, pregnant cows, and fresh cows) were tested for the presence of N. caninum antibodies. The overall seroprevalence was 28.23%. According to the reproductive groups, the seroprevalence varied between 19.04% (in fresh cows) and 38.09% (in cows with repeated breeding syndrome). By these findings new information is provided about the disease`s presence in the studied farm, implying that infection with N. caninum may be the primary cause of reported reproductive disorders, as well as about the infection's persistent nature.

Key words*: Neospora caninum, seroprevalence, dairy cattle farm, reproductive disorders, Romania.*

USE OF VETSHIELD®/SOFTSHIELD® COLLAGEN CONTACT LENSES IN MELTING CORNEAL ULCERS IN DOGS: 342 CASES (2013-2022)

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Abstract

Melting corneal ulcers in dogs develop secondary to the imbalance between proteinases and proteinase inhibitors in the healing process of corneal wounds. Common complications of melting corneal ulcers in dogs are descemetocele, staphyloma and uveitis, which can lead loss of vision. Medical records of 342 dogs diagnosed with melting corneal ulcers from May 2013 to November 2022 treated surgically using VetShield® and SoftShield® collagen bandage lenses and third eyelid flap. Dogs included in the study had a clinical diagnosis of melting corneal ulcer without evidence of retinal detachment or lens luxation confirmed by ocular ultrasonography. 204/342 cases (59.65%) of treated dogs regained their vision and corneal transparency; 113/342 cases (33.04%) had corneal fibrosis and pigmentation with improved vision; 17/342 cases (4.97%) had lost vision due to corneal scarring and 8/342 (2.34%) underwent intrascleral prosthesis due to secondary glaucoma as a complication. Placement of bandage collagen lenses and third eyelid flap in melting corneal ulcers in dogs is an easy, straight forward surgical procedure which can be performed by any veterinarian practitioner with good results.

Key words*: bandage collagen lens, corneal scar, melting corneal ulcer, third eyelid flap.*

USE OF DIODE LASER IN OPHTHALMOLOGY SURGERIES IN DOGS AND CATS: 161 CASES (2019-2022)

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Abstract

Recently used in veterinary medicine, the diode laser represents the surgical option for the entire eye pathology in dogs and cats. It is indicated in: eyelid tumours, trichiasis, distichiasis, conjunctival tumours, iris melanosis, uveal cysts, iris tumours, intraocular tumours, retrobulbar tumours and glaucoma. The diode laser for veterinary use has programs set for each surgical option, which provides intraoperative comfort for surgeon. The study was conducted over a period of 3 years (November 2019-November 2022) in 161 patients. The favourable postoperative evolution with the absence of complications was highlighted in the case of tumours, uveal cysts, and iris melanosis. In glaucoma cases, transscleral cyclophotocoagulation is not effective, 85% of the cases remained blind. The use of the diode laser in the case of symblepharon highlighted the rapid recurrence accompanied by neovascularization. Experimental using of diode laser in pigmentary keratitis revealed a short period of time with clear cornea after removing the pigmentation and the neovascularization was abundant.

Key words*: diode laser surgery, glaucoma, ocular tumours, symblepharon.*

THE APPEARANCE OF DIARRHEA IN THE NEONATAL PERIOD - CASE STUDY

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Abstract

Neonatal calf diarrhea syndrome, also known as calf scours or enteritis, is a common condition that affects young calves, particularly those between one and three weeks of age. This syndrome has a multifactorial etiology and has a negative impact on farm economics and welfare. The severity of diarrhea can range from mild to severe, and it can lead to dehydration, electrolyte imbalances, and even death in severe cases. Early recognition and prompt treatment of diarrhea are essential to minimize the negative impact on calf health and productivity. This study was conducted on a private farm at the request of the owner on a 3-week-old female in October 2022. The clinical examination was requested due to changes in the general condition such as apathy, uncontrollable diarrhea, dehydration, colic syndrome, inappetence, high body temperature. This abstract provides an overview of the causes and management of diarrhea in neonates, including prevention strategies and treatment options. Understanding the appearance of diarrhea in the neonatal period is crucial for healthcare providers and caregivers to ensure the optimal health and well-being of newborns.

Key words*: cattle, diarrhea, therapy.*

CLINICAL MANIFESTATIONS OF ACUTE PANCREATITIS IN DOGS - DIAGNOSTIC AND PROGNOSTIC VALUE

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Abstract

The clinical signs of acute pancreatitis depend largely on the severity of the disease, which can range from subclinical to life-threatening. The more common clinical signs are a direct result of inflammation of the pancreas or of the systemic effects of inflammation. The present study was performed in 83 dogs with spontaneous acute pancreatitis and 12 dogs with experimentally induced acute pancreatitis. The indicators general condition, appetite, vomiting, defecation, pain, mobility and reactivity were assessed. Both the frequency and the degree of manifestation of the individual clinical signs were taken into account. The most common symptoms were lethargy, anorexia, vomiting, diarrhea, and abdominal pain. There was a statistically significant difference between the experimental groups in the degree of manifestation of some of the signs, but not in the frequency of their manifestation.

Key words*: pancreatitis, dog, clinical signs, prognostic value.*

OUTCOME OF 2 CATS WITH SQUAMOUS CELL CARCINOMA TREATED WITH 1 ½ MANDIBULECTOMY

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Abstract

The objective is to describe the outcome and complications of two cats treated with a hemi plus rostral part contralateral mandibulectomy (1 ½ mandibulectomy) technique for the management of oral squamous cell carcinoma (SCC) with bone infiltration. Mandibulectomy can be performed in cats but unlike canine patients, they may require additional supportive care. Two cats were presented for progressive mass growing on the mandible. Both had bone invasion and were diagnosed with SCC by biopsy examination. The procedure involved a left/right mandibulectomy and the rostral part of the right/left hemimandible caudal to the lower canine tooth (1 ½ mandibulectomy), at least 1 cm far from the macroscopically visible lesions. Both cats had feeding tubes placed. The surgical outcome for one of the two cats was excellent, surpassing 302 days of survival, the other cat did not regain the ability to eat and the owners opted for euthanasia 35 days after surgery. Both histopathological reports confirmed SCC and clean margins. The hypothesis of the study reported here was that 1 ½ mandibulectomy would be effective for control of superficial subcentimetrical, caudal to the canine tooth oral SCC with bone invasion in cats but could also lead to permanent loss of feeding function and compromised quality of life.

Keywords*: squamous, carcinoma, mandibulectomy, surgery, cats.*

STUDY OF AN EPISODE OF SUBCLINICAL KETOSIS IN A SHEEP FARM IN SOUTHERN ROMANIA

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Abstract

Subclinical ketosis in sheep is considered a disorder of carbohydrate metabolism, which causes the mobilization of lipids, disturbance of fatty acid metabolism and the formation of ketone bodies. The main objective of this work is to identify local and general factors that contribute to the occurrence of subclinical ketosis in a sheep farm in Dolj county (Southern Romania) and to highlight by laboratory analysis the disturbances of energy metabolism, as well as other conditions closely related to them. A good nutritional management of the ewes before and after lambing is essential knowing that their nutritional requirements increase in this period and the peak will be reached in the first two-three weeks of lactation. Careful monitoring of the ewes in this period: trained personal to identify early signs of disease, diagnostic tests and quick intervention is also needed to prevent these episodes and other complications, such as pregnancy toxemia, which can lead to severe nervous manifestations (secondary to hypoglycemia) and significant economic losses.

Key words*: subclinical ketosis, sheep, ketonemia, anemia, ketonoruria.*

REPORT ON A CLINICAL BABESIOSIS OUTBREAK IN CATTLE, IN THE DANUBE DELTA AREA (SOUTHEASTERN ROMANIA)

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Abstract

Bovine babesiosis is a severe tick-borne disease caused by intra-erythrocytic apicomplexan protozoan belonging to the Babesia genus (Piroplasmida: Babesiidae). The disease impacts seriously animals`health and their productivity. Here we describe an outbreak of clinical babesiosis which occurred in July-August 2019 in cattle from two premises in the Danube Delta area (south-eastern Romania). The case reports' details of five affected cattle (of which, one pregnant female) are described, including clinical presentation, hematological and biochemical profiles, parasitological diagnostic, treatment, and follow-up. The clinical signs included depression, anorexia, fever (40.5°C-41.5°C), pale mucousmembranes or jaundice, haemoglobinuria, and abortion in the pregnant female. The microscopic examination of blood smears revealed small intra-erythrocyte parasites (2.4 x 1.5 µm) consistent with Babesia bovis in all clinically affected cattle. The common pathological findings included marked anemia, trombocytopaenia, lymphopaenia, and elevated values of liver enzymes. All animals were successfully treated with diminazen aceturate (3.5 mg/kg b.w., IM). In conclusion, these findings provide new data on the clinicopathological aspects of bovine babesiosis and highlight that babesiosis must be taken in consideration for implementing parasitological control programs in tick-endemic areas of Romania.

Key words*: babesiosis, cattle, clinicopathological aspects, Southestern Romania.*

THE LONG TERM USE OF ENFLICOXIB IN DOGS WITH OSTEOARTHRITIS: CLINICAL SAFETY AND EFFICACY

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Abstract

Osteoarthritis (OA) is a pathologic condition characterized by progressive destruction of various components of synovial joints. The OA is generally associated with pain and inflammation and therefore lameness, which are capable to decrease the quality of dog life for a long period of time. Unfortunately, there is no treatment for solving OA, but it is possible to slow down its progression through a correct therapeutic approach which could relieve pain and improve the quality of life of the dog and, consequently, of the owner. The objective of the present study was to evaluate the efficacy and safety of enflicoxib for the treatment of naturally occurring canine OA. Fourteen dogs were treated for 13 weeks with enflicoxib (Daxocox®, Ecuphar NV, Italy) administered once a week at 4 mg/kg, with an initial loading dose of 8 mg/kg. From day 0 to day 90 efficacy was assessed by the veterinarian by using clinical pain and lameness scores, and by the owners using the Canine Brief Pain Inventory. At day 0 and 90 a complete blood count and a biochemistry profile were performed in all treated animals. From the first weeks of treatment, a meaningful improvement in the clinical and owner scores was noticed. In conclusion, long term weekly administration of enflicoxib at the proposed dosage, resulted in great benefit for the quality of life of the dog affected by OA.

Key words*: Osteoarthritis, enflicoxib, COX-2, NSAID, dog.*

HEMATURIA IN ONE ALPACA - CASE STUDY

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Abstract

Hematuria is characterised as the presence of 5 or more RBCs per high-power (40x) field in a fresh, centrifuged probe obtained by either manual compression of the bladder catheterisation, or cystocentesis. This study was conducted in a private laboratory at the request of the owner on one intact male Alpaca of 4 years in june of 2022. The clinical examination was requested due to modifications of general state as apathy, colic syndrome, decrease of ruminal frecquency, inappetence, terminal hematuria, pollakisuria, stranguria and normal body temperature. The results consisted in the presence of RBC on the urine citology in large number and the crystals of ammonium magnesium phosphates. The biochemical evaluation of the alpaca revealed slight modifications not relatable with th cause and there were not systemic consequences of hematuria on the organism. In summary, the diagnosis of urolithiasis should also be considered in young alpacas with urinary dysfunction even if small amounts of urine are excreted.

Key words*: hematuria, Alpaca, urolithiasis.*

HUMAN LACTOFERRIN CAN ENHANCE THE OSTEOGENIC DIFFERENTIATION OF EQUINE MESENCHYMAL STEM CELLS?

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Abstract

Mesenchymal stem cells (MSCs) are harvested after birth; they are adult stem cells and, due to their unique potential, are considered very valuable tools for equine regenerative medicine. MSCs have self-renewal capacity and multilinear differentiation potential. Multiple protocols are used to induce the directed differentiation of these cells. The aim of our study was to evaluate the osteoinductive potential of a glycoprotein from the transferrin family, lactoferrin (Lf) on MSCs isolated from equine synovial fluid. The cell line (syMSCs) used for this study was obtained from synovial fluid samples from a healthy horse. The isolated cells were characterized morphologically, immunophenotypically and functionally respecting the standards of the International Society for Cell Therapy which were originally drawn up for human MSCs (cellular plastic adherence, expression of specific surface markers and trilinear differentiation capacity). The cells were cultivated in normal propagation medium for MSCs. For osteogenic differentiation, syMSCs were seeded at a concentration of 1×10^5 cells/3 mm well, and cultured in osteogenic induction medium with (3 different concentration: 20, 50, 100 µg/mL) and without Lf. The proliferation potential of the cells were assessed using CCK8 assay and the markers of osteogenic differentiation (alkaline phosphatase, ALP) were detected using fluorimetric assay. Our results demonstrate the osteogenic potentiation capacity of human lactoferrin correlated with concentration, thus our future studies will try to elucidate the osteoinductive mechanism of lactoferrin by applying genomics and proteomics techniques.

Key words*: mesenchymal stem cells, equine, differentiation, osteogenic, lactoferrin.*

SURVEY ON INTESTINAL PARASITES INFECTIONS IN WATER BUFFALO CALVES, IN CENTER ROMANIA

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Abstract

A cross-sectional survey was carried-out to investigate the occurrence and associated risk factors for digestive parasite infections in water buffaloes (Bubalus bubalis) calves, in Center Romania. For this, individual faecal samples were collected from a total of 56 calves and tested for protozoan and helminth infection by using qualitative and quantitative (Mini-Flotac) copromicroscopic techniques. Overall, 76.8% [95% CI: 63.58-87.03] of the tested animals were positive for at least one parasite infections, as single (51.8%; 95% CI: 38.03-65.35) or mixed (25.0%; 14.39-38.38) infections. Among the parasites detected, the most frequent was Eimeria spp., followed by Toxocara vitulorum, Giardia intestinalis, Cryptosporidium parvum, and Strongyloides papillosus, with high parasite infections for Eimeria spp. and T. vitulorum. These findings show the presence of parasites that may seriously impact the animal health, some of them with also zoonotic potential. Altogether the results of this study emphasize the requirement for specific measures for control parasite infections in water buffalo farms.

Key words*: water buffaloes, digestive parasites, copromicrospic investigation, Romania.*

NEGATIVE PRESSURE WOUND THERAPY AND MEDICAL-GRADE HONEY COMBINATION SWIFTLY HEALS A LOWER EXTREMITY INJURY WITH BONE EXPOSURE IN A CAT

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Abstract

Introduction: Lower extremity injuries in cats can present significant challenges by a lack of tissue, bone exposure, and bacterial contamination, requesting effective treatment methods. This case report describes the use of a combination of negative pressure wound therapy (NPWT) and medical-grade honey (MGH) dressing in the treatment of a complex lower extremity injury in a cat. Materials and Methods: An old injury in the metatarsal area of a 3-year-old male cat resulted in an open fracture of all the metatarsal bones. The wound was left open after osteosynthesis via intramedullary pin insertion. A combination of NPWT and MGH dressing was used to promote healing and prevent bacterial contamination. Discussions: The combination of NPWT and MGH dressing was effective in promoting the healing and full closure of the soft tissue injury in this case. NPWT supported granulation tissue formation, maintained a moist wound environment, and prevented infection. The MGH dressing helped prevent further bacterial contamination and promoted wound healing. Conclusions: This case highlights the benefits of using a bimodal staged approach in the management of challenging lower extremity injuries in cats.

Key words*: negative pressure wound therapy, medical grade honey, lower extremity wound, secondary intention healing.*

CANINE RHABDOMYOSARCOMA - LITERATURE REVIEW

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Abstract

Rhabdomyosarcoma (RMS) is a rare malignant neoplasm arising from skeletal muscle, occurring predominately in young individuals.
In dogs, is most commonly located in the urogenital tract, followed by head, neck, face, limbs and skin, mammary gland included. This article reviews the microscopic patterns, diagnostic and prognostic aspects of RMS in dogs. In veterinary medicine, the classification of RMS into subtypes is based only on histologic characteristics, with no relevance in regard of prognosis. The prognosis depends on the severity and extent of invasiveness, as well as the presence of metastases. Macroscopic aspects are variable, as well as cellular morphology and histological patterns. Immunohistochemistry is used to confirm the diagnosis, RMS being positive for vimentin, desmin, muscle and sarcomeric actin, myoglobin, myogenin and negative for cytokeratin and α-smooth muscle actin. Further investigations are needed to better understand the biological behaviour and outcomes of this tumour.

Key words*: rhabdomyosarcoma, canine, immunohistochemistry, prognosis, histopathology.*

CLINICAL-THERAPEUTIC MANAGEMENT IN THE COMPLEX OF RESPIRATORY DISEASES IN YOUNG CALVES

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Abstract

Respiratory disease are a common and costly problems in young calves and its clinical-therapeutic management is crucial to prevent negative impacts on animal health and productivity. Clinical-therapeutic management of respiratory diseases in young calves involves various aspects, including accurate diagnosis, prompt and appropriate treatment, supportive care, and preventative measures. This study was carried out in a private farm, at the request of the owner, on 6 cattle, aged between 6 and 10 weeks, in November 2022. Clinical signs of respiratory disease included coughing, nasal discharge, fever, decreased appetite, lethargy, and dyspnea. Timely diagnosis and appropriate treatment are essential to prevent disease progression and minimize the negative impact on animal health and productivity. Treatment options included antimicrobial therapy, anti-inflammatory drugs, bronchodilators, and fluid therapy, among others. In addition, supportive care such as nutritional support, adequate housing conditions and minimizing environmental stressors was implemented for the recovery and prevent further complications.

Key words*: calves, respiratory disease, therapy.*

IS ANTIOXIDANT CAPACITY CONNECTED TO BIOLOGICAL EFFECTS OF *Salvia glutinosa* L.?

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Abstract

The active principles extracted from plants prove to be useful in preventing or treating various diseases through their influence at molecular level. This potential of plants could reduce the negative effects of existing therapies due to lesser side effects and the results of bioavailability studies are encouraging. Hydro-alcoholic Salvia glutinosa L. extracts were examined for their antioxidant potential and anti-bacterial activity and for their in vitro immune stimulating effects. The dry aerial part of the plant (herba) was used for these experiments, after minced and solubilized in methanol and also in aqueous solution. The antioxidant capacity was investigated by free radical scavenging effect over 1,1-diphenyl l-2-picrylhydrazyl radical, the antimicrobial effect by the Kirby Bauer radial diffusion test and the immune stimulating effect by tests on whole blood cultures. The results indicated a stronger antioxidant capacity (RSA% 88.89), antibacterial effect (E. coli, P. aeruginosa, x = 12 mm <, S. aureus, ATCC/clinical strains, x = 23mm) and immune stimulation of the methanol extract compared to the aqueous one. These results indicated the plant as a potential complex source to be implemented in alternative therapy.

***Key words**: Salvia glutinosa L., extract, antioxidant, antimicrobial, immune stimulating, therapy.*

OVERVIEW OF BLUETONGUE OUTBREAKS IN EUROPE AND DISEASE CONTROL IN BULGARIA IN THE PERIOD 2011-2021

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Abstract

Bluetongue (BT) is an acute, viral, vector-borne, non-contagious disease of ruminants caused by Bluetongue virus (BTV). Twenty-six different serotypes have been identified, and the ability of each strain to cause disease varies widely. BTV can infect a wide range of domestic and wild ruminants - sheep, goats, cattle, buffalo, deer, most species of African antelope and camels. For the study period (2011-2021), outbreaks were declared in 21 member states in Europe with predominant serotypes 1, 4 and 8. Based on data from Animal Disease Information System (ADIS) with the present paper we analyzed the distribution of the BTV serotypes within the affected countries and found that particular serotypes tend to spread to particular countries. The development of regulatory measures for prevention, surveillance and eradication of BT is discussed based on the European legislation.

Key words*: animal health, Bluetongue, legislation, disease control, surveillance.*

ROLE PLAYED BY MICROBIOTA IN OBESITY AND HEALTHY WEIGHT RESTORATION IN DOGS

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Abstract

The paper intends to present a short overview of recent findings of microbiota impact in obesity and prevention and therapeutic approaches. Body weight and BCS play an important role in the wellbeing and lifespan of pet's because excessive adiposity reduces life expectancy and quality of life by causing chronical medical conditions and shorten life span. Microbiota dysbiosis has been associated with a group of medical issues among them: obesity, diabetes mellitus, metabolic syndrome among others. Recent studies showed that microbiota seems to be another important compound in the complex causality of obesity, next to disbalance between intake and energy consumption. Therefore, deeper studies might be needed to evaluate involvement of microbiota of shifting metabolic profiles in patients form obese to normal weight patient and long term normal healthy microbiota maintenance. Nutritional modulation of key bacterial taxa for normal wight is promising directions. Latest findings revealed that canine subjects could be a study model for metabolic pathways interactions and monitoring of metabolites prediction in order to identify methods of treatment obesity in both pets in humans.

Key words*: digestive microbiota, nutrition, fibres, obesity, body condition score.*

THERAPEUTIC MANAGEMENT IN ANEMIA DUE TO CHRONIC KIDNEY DISEASE

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Abstract

Chronic kidney disease is an increasingly common condition among felines in the geriatric segment. The symptomatology takes on an initial appearance, erased or uncharacteristic, with a detection of renal pathology made at a time when renal function is already compromised, which inevitably leads to mortality. Due to chronic kidney disease, non-regenerative anemia caused by insufficient production of erythropoietin was recorded in many of the patients. So that, in addition to the supportive treatment, the stimulation of erythropoiesis was also sought. Anemia occurs following the loss of erythropoietin-producing cells from the kidney or against the background of an inflammatory state resulting in iron sequestration, bleeding from the gastrointestinal mucosa, reduced red blood cell survival due to uremia, or due to adverse drug effects and poor nutritional status.

Key words*: erythropoiesis, anemia, chronic kidney disease.*

SPECIFIC THERAPEUTIC MANAGEMENT IMPLICATIONS IN NEONATAL LAMBS MORTALITY

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Abstract

Curative interventions, expensive and long, are often followed by clinical recovery, but with compromise and reduction of weight dynamics and productive growth. In this context, the precocity of the therapeutic approach, together with the consistency and dynamic modulation of the treatment of peri- and neonatal diarrhea syndromes in lambs conditions the recovery of such affected patients (with minimal productive consequences), contributes to ensuring the well-being of the animals and reducing the risk of inducing antibiotic resistance. The research took place between 2022-2023 on 196 lambs of different breed and age, within the county of Tulcea, the locality of Baia. The animals included in the study were divided into 2 groups, namely study group 1 consisting of 98 lambs in which the diagnosis was established clinically and study group 2 consisting of 98 lambs that benefited from a definite etiological diagnosis (rapid Rainbow test Bio K) along with an etiologically oriented and specific therapeutic protocol. The percentage analysis of the mortality rate in the diarrheal syndrome in lambs shows an increased value in lambs treated with non-specific medication compared to lambs in which the therapeutic protocol approached was of an etiological nature where the percentage value is reduced. The calculated productive difference in body weight between etiologically diagnosed and related treated group 4 versus group 1 without etiotropic approach resulted in a 15% greater weight gain at day 60 in the group 4 member compared to the group 1 member.

Key words*: lambs, mortality, therapy.*

DIAGNOSTIC APPROACH TO BRAINSTEM DYSFUNCTION IN DOGS AND CATS - A CASE SERIES REPORT

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Abstract

Neurological pathology has known a marked expansion in recent years in veterinary practice in Romania, the diversity and complexity of cases representing a constant challenge for clinicians. Consequently, the diagnostic methodology was in a continuous dynamic, being influenced by the particularities of each patient and the accuracy of the available diagnostic methods. However, identifying the localisation of the lesion according to the correspondence of the neurological deficits with the functional segment of the brain (forebrain, brainstem, cerebellum, vestibular apparatus) remained an essential stage. Decerebrate rigidity, a comatose mental status accompanied by a decrease in the activity of the vital centres, and multiple deficits of the cranial nerves are cardinal signs of a brain stem lesion. This paper aims to present the clinical, neurological, and imaging features of 15 patients (dogs and cats) diagnosed with brainstem deficits in the Faculty of Veterinary Medicine of Bucharest, in 2021. Each case was conducted according to a standard protocol and the results were analysed to observe the population dynamics and possible predisposing factors.

Key words*: neurological examination, brainstem, decerebrate rigidity, nervous system, MRI.*

THE EFFECT OF GENERAL ANESTHESIA ON UREA AND CREATININE VALUES IN A GROUP OF DOGS

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Abstract

All anesthetic drugs act on renal function, the kidney being the primary organ involved in the excretion of the anesthetic drugs. Also, anesthesia influences kidney function, especially through hemodynamic and neuroendocrine changes. Anesthesia and renal function are highly interconnected and can potentially influence each other. Understanding the anesthetic effects on renal function can help to develop safe perioperative care and to optimize the after-surgery outcome. The study will focus on how general anesthesia influences renal parameters, blood urea nitrogen (BUN) and creatinine (CREA). The results of our study show the impact of general anesthesia for both BUN and CREA, in correlation with the medication used for premedication, and the patient`s condition.

Key words*: general anesthesia, kidneys, urea, creatinine.*

SPONTANEOUS PNEUMOTHORAX WITH BULLAE SECONDARY TO HIGH-RISESYNDROME IN A DOG

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Abstract

High-rise syndrome is the term given to define falling from a height of 2 or more floors in urban areas. This falling generally results with multiple injuries including thoracic, abdominal, orthopedic and craniomandibular or craniomaxillofacial trauma. The combination of multiple traumatic injuries can be life threatening. Cats after they knowledge high-rise syndrome mostly having thoracic trauma with pneumothorax and/or pulmonary contusion with combination of some orthopedic trauma. Comparing to cats, dogs suffer more due to their bigger body mass as well as the impact force they are facing when hitting the ground. 2.5 years old crossbreed dog clinically presented with superficial, paradoxical breathing with multiple orthopedic injuries on the front right and back left limbs after felt from 4 stories. The dog diagnosed with spontaneous pneumothorax, unfortunately stabilization methods with thoracentesis procedures were not sufficient for three days. After CT scans provided, dog was taken to surgery for lung lobectomy due to several bullae.

Key words: *bullae, lung lobectomy, spontaneous pneumothorax, thoracic trauma.*

THORACIC WALL RECONSTRUCTION WITH POLYPROLENE MESHIN A DOG WITH SEVERE FLAIL CHEST

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Abstract

Blunt force traumas that are caused by hit-by cars, animal abuse and bite wounds on the thoracic region can end up with flail chest in dogs. Flail chest, is one of the serious injuries with presence of two or more continuous ribs fractured. As a result, a portion of the thoracic wall with fractured ribs moves paradoxicallyin inspiration and expiration. According to many previous case reports, mortality rate is high in this life-threatening situation. Patients present in emergency with thoracic pain and shortness of breath (SOB). 9 years old, female Shih-Tzu breed dog clinically presented with severe dyspnea, pain and paradoxical movement of the chest on the left side of the thorax. 24 hours after the patient's stabilization, CT scans revealed loss of the intercostal muscle integrity and5 ribs fractures on the left thoracic region. After the imagistic certain diagnosis, the dog was taken to reconstructive thoracic surgery.

Key words*: blunt force trauma, flail chest, mesh, reconstructive surgery.*

THORACIC TRAUMA UPDATES IN FELINE HIGH-RISE SYNDROME. WHAT CHANGED IN 30 YEARS? 50 CASES IN ONE YEAR

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Abstract

High-rise syndrome is a general definition of multiple traumatic injuries that cats experience after falling from a height of 2 or more floors of high-rise buildings in urban areas. This falling generally results with multiple injuries including thoracic, abdominal, orthopedic and craniomandibular or craniomaxillofacial trauma. The combination of multiple traumatic injuries can be life threatening. 50 cats diagnosed with high-rise syndrome between period December 2021-December 2022 in Veterinary Emergency Hospital, Faculty of Veterinary Medicine. Thoracic trauma was diagnosed in 82% of cats. Pneumothorax was diagnosed in 54% of cats and Pulmonary contusions diagnosed in 50% of cats. Some cats diagnosed both pneumothorax and pulmonary contusion. Past 30 years, some authors pointed and rated the injuries they diagnosed in their articles and case reports. The aim of this study is to point increased thoracic trauma after high-rise syndrome related with hitting more hard grounds than past years in urban areas.

Key words*: high-rise syndrome, pneumothorax, pulmonary contusion, thoracic trauma.*

DYNAMICS OF THE ANTIBIOTIC RESISTANCE PROFILE IN HEAVY METAL-POLLUTED HABITATS

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Abstract

Heavy metal pollution is recognized for its adverse effects on humans, domestic and wild animals by its interaction with the genome, thus interfering with the development and survival of the species. Despite the numerous studies on heavy metal pollution and its influence on humans, relatively few of these underline the importance of the impact of heavy metal pollution on animals, beyond the effects on the food products of animal origin and its safety. Similarly, investigations were directed at the transfer of multidrug-resistant bacteria from foodstuffs or feed to humans and animals, respectively. However, there are no recent, comprehensive and correlated data on the toxicity of heavy metals such as Pb, Hg, Cd to bacteria of health importance isolated from humans, farm or wild animals. Investigations to interconnect the extent of heavy metal presence with the changes in bacterial genome towards multiple antibiotic resistance in heavy metals polluted areas are scarce. This review intended to summarise the favourable factors influencing the potentially increased antimicrobial resistance as influenced by various heavy metals in the environment, humans and animals from specific polluted habitats.

Key words*: pollution, antimicrobial resistances, heavy metals, humans, animals.*

STUDY ON ECTOPARASITE INFESTATIONS OF THE NORTHERN WHITE-BREASTED HEDGEHOG (*Erinaceus roumanicus*), in ROMANIA

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Abstract

The northern white-breasted hedgehog (Erinaceus roumanicus) is a small, insectivorous mammal increasingly adapting to urban environments. Data regarding their parasite fauna is scarce, therefore this study aimed to investigate ectoparasites infesting hedgehogs in Romania. For this, ticks and other ectoparasites have been collected from thirty-four hedgehogs admitted to a rehabilitation center or found in their naturalhabitat, and subjected for morphological identification. In total, 486 ticks (Acari: Ixodidae) were collected and the following species were identified: Ixodes ricinus, Ixodes redikorzevi, Ixodes hexagonus, Haemaphysalis punctata, Rhipicephalus sanguineus, Rhipicephalus rossicus, Rhipicephalus turanicus, Hyalomma marginatum, Hyalomma aegyptium, and Dermacentor reticulatus. The ticks were analyzed according to the originating ecoregion, type of anthropic environment, and seasonality. Additionally, other ectoparasites included Neotrombicula autumnalis (Acari: Trombiculidae), Caparinia tripilis (Acari: Psoroptidae), and Archaeopsylla erinacei (Siphonaptera: Pulicidae). These findings emphasize a high diversity of ectoparasites infesting hedgehogs in Romania, including species of zoonotic concern. Therefore surveillance of their parasites and associated potential risks are of both veterinary and human health importance. To the best of our knowledge, this is the first report on C. tripilis in hedgehogs in Romania.

Key words*: ectoparasites, infestations, Erinaceus roumanicus, hedgehog, Romania.*

ANIMAL PRODUCTION, PUBLIC HEALTH AND FOOD QUALITY CONTROL

DEMOGRAPHIC CHARACTERIZATION AND CONSUMPTION HABITS OF PORTUGUESE HUNTERS

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Abstract

Hunting is the most popular rural activity in Portugal. Currently, the number of licensed hunters in Portugal is around 115 000, preferentially hunting large game, particularly wild boar. The objective of this study is the demographic characterization of the hunters who consume game meat. In an ongoing anonymous survey of hunters on `wild boar consumption habits`, were raised questions about personal demographic data (age, gender, scholar level, and residency) and wild boars' meat self-consume, such as the number of hunted animals per season and their self-consume and if, they consume it undercooked or make traditional products, as sausages. Of the 206 hunters from all over Portugal who responded to the survey, the majority are males aged between 31 and 50 years (n = 106; 51.5%) and practice self-consumption of wild boar meat they hunt (average wild boar hunted per hunting season is 4). 177 do not make traditional products based on raw game meat (86%), nor do they consume it undercooked. Knowing these data is important to understand the attributable risk of self-consuming game meat and the perception of hunters about this.

Key words*: game meat, social data, wild boar, zoonoses.*

MORTALITY OF HONEY BEE COLONIES IN ALGERIA: IDENTIFICATION OF THE MAIN CAUSES.

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Abstract

Pollinators are insects essential for the reproduction of plants; they participate in the pollination of more than 80% of flowering plants, they are also essential for agricultural activity and food production. Among these insects, honey bees have been marked for more than thirty years by a phenomenon of decline, which results in a weakening of colonies and higher than normal mortality rates. This excess mortality is explained by a multitude of factors which act alone or in combination to weaken the bees or even cause their disappearance. Among them, two causes seem preponderant: chemical causes, due to the use of phytosanitary products which disturb the state of health of pollinators, and biological causes due to the existence of parasites and predators which threaten the colonies. This situation is worrying and represents a threat to biodiversity and food security. Algeria is affected by this mortality problem, beekeepers suffer from a low beekeeping production and a fairly high mortality rate. The situation in Algeria is worrying and requires emergency measures to save Algerian beekeeping and improve the income of beekeeping.

Key words*: honey bee, mortality, Algeria.*

BIOSECURITY COMPLIANCE IN POULTRY PRODUCTION MEASURED USING A RISK-BASED SCORING SYSTEM

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Abstract

Biosecurity quantification tools allow better understanding of the relationship between farm biosecurity levels and farm characteristics like, animal health, antimicrobial usage and production performance. In this study a weighted risk-based scoring tool was developed to measure biosecurity in breeder, turkey, duck, free-range layer and free-range broiler production. Biosecurity levels measured in poultry farms showed that the breeder farms of Belgium (n = 3) (69% vs. 74%) scored lower for external than internal biosecurity whereas in Netherlands (n = 3) (85% vs. 83%) and Hungary (n = 2) (85% vs. 83%) and in tested duck farms (n = 5) (75% vs. 61%) it was vice versa. Free-range layer farms of Netherlands (n = 4) had better internal biosecurity scores (71% vs. 74%). The free online accessibility of the Biocheck.Ugent (https://biocheckgent.com/ent) tool has allowed worldwide usage and from its launch in August 2022 the tool is used in many countries, e.g. turkey farms of Finland (n = 6) (66% vs. 84%) and Sweden (n = 9) (64% vs. 84%), and breeder farms of Finland (n = 33) (74% vs. 80%) had better internal biosecurity scores. The scoring system allows benchmarking and in providing farm-specific advice for improvements.

Key words*: Biocheck.ugent, biosecurity, netpoulsafe, poultry, scores.*

DETERMINATION OF CHEMICAL-ANALYTICAL QUALITY CRITERIA OF KING SCALLOP (*Pecten maxima*), ATLANTIC SEA SCALLOP (*Placopecten magellanicus)* AND QUEEN SCALLOP (*Aequipecten opercularis*) SAMPLES FROM NORTH ATLANTIC OCEAN, ENGLISH CHANNEL AND FROM THE TRADE MARKET

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Abstract

King scallops (Pecten maximus), Atlantic sea scallops (Placopecten magellanicus) and Queen scallops (Aequipecten opercularis) were were directly caught from natural environment of North Atlantic Ocean and English Channel Bay of Biscay during four of Walther Herwig's III (WH III) expeditions and compared with an enlarged range of frozen scalloppurchased on the German market. Proximate composition, was examined in the muscle to identify changes as a result of freezing and processing. Investigations took place on-board and at the Max Rubner Institute Hamburg. In the investigated purchased bivalve molluscs samples, in two cases (Pecten spp., Placopecten magellanicus) perfect positive correlations (R2 = 1) were observed between the amount of phosphate and the pH values, while in the other 5 samples, the correlations were negative (R2 = –1). A negative but weak correlation was established between protein percentage and TVB-N % (R2 = –0.26). There were calculated reasonable positive correlations between phosphate and ice glaze (R2 = 0.48).

Key words*: phosphates,water content, scallops, proximate composition, additives.*

SURVEY ON FACTORS AFFECTING HONEY BEES COLONIES IN ROMANIA: PRELIMINARY DATA

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Abstract

The longevity of honey bees, although genetically conditioned, is impacted by numerous factors including diseases, poisoning, climatic and environmental disturbances. Additionally, the decrease in pollen resources reduces the queen's brood and finally the longevity of the bee colony. Therefore, a survey, based on clinical examinations in apiaries and a questionnairy completed by beekeepers, was conducted in 2022-2023 to analyse the major factors that impact the honey bees colonies. For this a total of 50 beekeepers from five counties in Central and South-eastern Romania were enrolled in the study. Among the factors causing honey bee losses, diseases (including varroosis, wax moth, nosemosis, others) and unfavourable climatic conditions, such as longer cold periods, strong winds, rains, dryness, were reported. These findings emphasize on the importance of continuous monitoring, investigations, and specific control measures to be taken in order to preserve the health and activity of honey bee colonies.

Key words*: honey bee, colony survival, colony losses, Romania.*

IDENTIFICATION OF ANTIBIOTIC RESISTANCE PATTERNS IN *Escherichia coli* BACTERIA FROM CLOACAL SWAB SAMPLES OF BROILER CHICKENS FROM FARM THAT USE PROBIOTIC *Lactobacillus* sp.

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Abstract

This study aims to determine the resistance pattern of Escherichia coli in broiler chickens given Lactobacillus sp. during the maintenance period. A total of 48 chicken cloacal swab samples given Lactobacillus sp. and 48 samples of untreated chicken cloacal swabs were taken from farms in Cimarigi Village, Sukadana District, Ciamis Regency. E. coli was isolated and identified, followed by an antimicrobial susceptibility test using the disc diffusion method according to the Kirby Bauer method against the antibiotics amoxicillin (20 µg), erythromycin (15 µg), and ciprofloxacin (5 µg). Data on the diameter of the antibiotic inhibition zone were compared with standard bacterial sensitivity and classified as sensitive, intermediate, and resistant. The results showed that E. coli from both sample groups were 100% resistant to amoxicillin and erythromycin. The pattern of resistance to ciprofloxacin in the sample group given probiotics was 76% intermediate and 24% resistant, while the sample group that was not given probiotics was 96% resistant, 2% intermediate, and 2% sensitive. Changes in resistance patterns in this study are thought to be influenced by the anti-adhesive mechanism of Lactobacillus sp., which prevents the attachment of ciprofloxacin-resistant Escherichia coli.

Key words*: Escherichia coli, Lactobacillus sp., resistance pattern of antibiotics, broiler chicken.*

EFFECTS OF ISOLATION ON HIGH FREQUENCY CALLS PARAMETERS IN DAIRY COWS - PARTIAL RESULTS

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Abstract

The aim of the current pilot-study was to evaluate the effects that isolation has on high-frequency calls (HFCs) in dairy cows. This experiment was undertaken at the Research and Development Institute for Bovine, where 10 lactating Romanian Black and White Spotted multiparous cows were recorded continuously for 4 hours post-isolation, using Sennheiser MKH416 microphones, Marantz PMD661 recorders and the Praat-v.6.0.31 software for sound analysis. The fundamental frequency (F0) was on average of 183.86 ± 7.24 Hz during the 1st hour post-isolation, and of 196.0 ± 11.0 Hz during the 4th hour, with significant differences ($p \leq 0.05$) between the two time-intervals. The minimum F0 frequency, frequency values at the upper limit of the first (Q25%), second (Q50%) and third (Q75%) quartiles were as well influenced by the isolation time ($p \leq 0.05$). However, parameters such as maximum F0 frequency, call duration (s), mean peak-to-peak variation (dB), cumulative variation in amplitude (dB/s) and Wiener entropy were not influenced ($p \geq 0.05$) by the time post-isolation. Current results showed that isolation has a significant influence on some HFCs parameters in adult dairy cattle, providing new insights on habituation effects to negative stimuli.

Key words*: animal behaviour, bioacoustics, cattle, vocal communication, welfare-indicators.*

THE USE OF HISTOLOGICAL METHODS IN MEAT AND MEAT PRODUCTS FOR FRESHNESS DETERMINATION – A POSSIBLE FUTURE TREND?

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Abstract

Food products preservation was and will be of general interest, especially due to the current challenges faced by the industry. In this regard, data collection methods diversity represents an opportunity for extending the current knowledge in meat preservation. Meat and meat products microscopical imaging leads to obtaining some extremely useful information that cannot be substituted by any numerical equivalents of other comparative methods. This fact has been noted in many countries worldwide and was adopted as a complementary method for assessing the integrity, quality and shelf life of food products. In this regard, the aim of this literature review was to assess the benefits of using the histological method for freshness determination in meat and meat products, along with the documented procedure and interpretation.

Key words*: meat, meat products, histological assessment, meat freshness.*

COMPARATIVE STUDY OF SOME TRACE ELEMENTS AND MACROMINERALS IN PIG LEG DEPENDING ON THE COOKING METHOD

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Abstract

A comparative study of trace elements and macrominerals in pork can provide valuable information about how the safety and nutritional level of the meat is affected by the cooking method. This study aimed to assess the effects of three cooking methods (roasting, boiling, and microwaving) on the mineral composition of pig leg. In this study, minerals' concentration in raw and cooked pork samples were determined by ICP-OES. Roasting, boiling, and microwaving can lead to different effects on the minerals and the toxins present in the meat. The studied cooking methods influenced the mineral composition and nutritional value in cooked pig leg samples compared to raw ones, with impact on the minerals' intake. Generally, macromineral levels increased in cooked pork samples and trace elements decreased, with roasting improving the mineral nutritional value of pig leg.

Key words*: pig leg; trace elements; macrominerals; cooking method.*

COMPARATIVE STUDY ON THE VARIATION OF THE SERUM CORTISOL LEVEL DEPENDING ON THE CATTLE SLAUGHTERING METHOD

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Abstract

Over time, meat has played an essential role in human evolution and is an important component of a healthy and balanced diet, a fact due to the nutritional richness that varies depending on a number of factors. Pre-slaughter stress is a crucial factor in meat quality and safety. Animals intended for slaughter are stressed by a variety of endogenous and exogenous factors. Slaughter is a complex process, and there is clear evidence in the literature, that pre-slaughter stress is harmful to the meat quality. Therefore, the purpose of stunning is to render animals unconscious during bleeding, without causing pain or stress. In some countries, cattle are slaughtered by a religious method, without stunning, namely the halal slaughter practiced by Muslims and the kosher slaughter practiced by Jews. The study was carried out during 2020-2022, on two batches of conventionally slaughtered cattle (with stunning), on one batch of halal slaughtered cattle (without stunning and on one batch of traditionally slaughtered cattle (without stunning). Within the slaughterhouses, the technological flow of slaughtering cattle was followed and blood samples were collected in order to extract serum and dose cortisol. Cortisol was dosed in a specialized laboratory using the immunoenzymatic method with chemiluminescence detection. Comparing the analyzed batches, it can be seen that higher average values of the cortisol level were recorded in the batches slaughtered in the traditional halal system, compared to the conventionally slaughtered batches. The values recorded for all four batches, exceed the reference range of 0.47-0.75 μg/dL. Excessive handling of cattle induces their stress, therefore special attention must be paid to the rest period before slaughter, to physiologically rebalance the body, but also to the slaughtering process, to minimize stress levels and ultimately improve meat quality obtained, because it has been shown that there is a direct correlation between the quality of the meat and the way the animals are slaughtered, more precisely with stunning or without stunning.

Key words*: cattle, cortisol, halal, slaughter, stress.*

THE WORLD OF MYCOTOXINS - A SYSTEMATIC REVIEW

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Abstract

Mycotoxins are secondary toxic metabolites produced by filamentous fungi, which are predominantly found in agricultural products worldwide. Mycotoxins appear in the food chain due to fungal contamination of crops both before and after harvest. Exposure to mycotoxins can occur by consuming contaminated food (a direct factor) or by consuming feed contaminated by animals, through milk (an indirect factor). Fungal proliferation and mycotoxin production have a higher input due to environmental factors. Chemically, most mycotoxins are stable and thus survive food processing. Among the most important mycotoxins are aflatoxins, ochratoxin A, zearalenone and trichothecenes. The species that synthesize these mycotoxins belong to the genera Aspergillus, Penicillium and Fusarium and, unfortunately, they can trigger mutagenic, nephrotoxic, carcinogenic, teratogenic, cytotoxic, neurotoxic and estrogenic effects. This paper provides an overview of the world of mycotoxins, from emergence to adverse effect on contamination of agricultural products, which is of major importance as it affects food and feed safety, food security and trade.

Key words*: contamination, fungi, mycotoxins.*

THE EFFECT OF THE USE OF DURIAN SEED FLOUR (*Durio zibethinus* Murr) AS A FILLER ON THE PHYSIOCHEMICAL AND MICROBIOLOGY OF SALAMI

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Abstract

The purpose of this study was to determine the physicochemical and microbiological of salami using durian seed flour as a filler. The research has been successfully carried out using a completely randomized design with five treatments P0(0%), P1(5%), P2(10%), P3(15%), and P4(20%) each treatment was repeated four times. Parameters measured include physical and chemical, and microbiology. The data used by ANOVA and continued with the Tukey test. Based on the results of the study, it was found that the cooking losses decreased from 24.48%- 8.31%'; Water Holding Capacity increased from 27.78%-51.97%; Softness increases from 13.94-22.39 mm/g/10 seconds. While the chemical quality of the water content increased from 40.46%-44.84%; Fat decreased from 19.95-13.75%; Protein decreased from 24.90-20.74%; Carbohydrates increased from 40.46-44.84%; Microbiological such as pH 4.07-4.08; Total Plate Count decreased from 3.57 x 103 CFU/gram - 3.038 x 103 CFU/gram. The conclusion of this study shows that durian seed flour can be used as a filler in salami it can improve the physicochemical and microbiological with a level of 15%

Key words*: Durian seed flour, Chicken laying hens, salami.*

PRELIMINARY ANALYSIS OF RELEVANT BIOSECURITY FACTORS IN COMMERCIAL PIG HOLDINGS IN ROMANIA - AFRICAN SWINE FEVER CONTEXT

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Abstract

The present paper is based on a study performed by the Romanian veterinary services and the European Food Safety Authority during 2020-2021 and focuses on the analysis of the risk factors that led to the numerous ASF outbreaks in domestic pigs in Romania. The study represented a case-control (14/28) epidemiological inquiry questionnaire-based investigation in ASF free and infected farms, tailored for the particularities of the pig husbandry system in Romania. Type A and commercial pig farms were inspected in order to assess the relevant biosecurity measures enforced and to identify and rank the most important critical risk factors for the occurrence of ASF outbreaks. The results of the study show that there are numerous critical control points for the prevention of ASF that are not taken into consideration by the provisions of the veterinary legislation in force. The biggest impact the present study showed to have on ASF outbreaks in type A and commercial swine establishments was attributed to the socio-traditional animal husbandry practices in Romania.

Key words*: African Swine Fever, biosecurity, risk analysis, veterinary epidemiology, socio-traditional animal husbandry practices.*

EXPERIMENTAL MEDICINE

THE DEVELOPMENT OF A PRECLINICAL MODEL FOR OSTEOINTEGRATION OF DENTAL IMPLANTS - A PILOT STUDY

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Abstract

Functional tooth replacement and bone regeneration are areas of interest in modern dentistry and dental implant research involves increased attention to osteointegration. The aim of the study was to develop a small, inexpensive and reproducible animal model for testing dental implants. Fifteen male Wistar rats, 20 weeks old, average weight of 400 grams were included in the study. They were subjected to a rigorous bone support preparation protocol so that the maxillary first premolar was extracted from the left half arch. After a period of 30 days, necessary for the bone refilling of the dental alveolus, the radiological examination was performed. Then a surgical intervention was performed to mount the titanium implants of an adapted size. Clinically, the evolution was favorable, with no signs of discomfort or oral infection. At the radiological evaluation, optimal bone regeneration could be observed. necessary to ensure a suitable place for implant mounting. The implantation procedure was laborious due to the limited working area. However, rats are proving to be suitable animal models for implant-related studies or innovative treatments administered under pathological conditions.

Key words*: implant, osteointegration, rat, tooth extraction.*

PRELIMINARY RESULTS IN INDUCING MENINGITIS IN BALB/C MICE USING A HUMAN STRAIN OF *Neisseria meningitidis*

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Abstract

Neisseria meningitidis (Nm) is the pathogen carried asymptomatically in the nasopharynx but which under certain conditions can produce meningitis or even multi-organ failure. Experimental induction of meningitis in an animal model is necessary for testing new nanopharmaceutical products. Thus, the aim of the study was to establish the concentration of Nm capable of inducing the disease. We carried out 2 studies where we tested different concentrations of Nm obtained by the nephelometric and spectrophotometric methods. In the first study we included 20 BALB/c mice, and in the second 24. Local and general clinical signs, complete with body temperature values, body weight, hematological, microbiological and histopathological examination were important indicators for the assessment of the establishment of meningitis. The clinical results have pronounced depression in the first 2 days after inoculation, then the general condition will appear. The microbiological and histopathological examination indicated the presence of bacteria at the brain level and specific meningeal lesions only in the case of the second attempt, but the early mortality, requires additional testing of the bacterial concentration that induces meningites in a stable and persistent way so that treatment against the condition can be tested later.

Key words*: intracisternal inoculation, meningitis, mouse, Neisseria meningitidis.*

EFFECT OF ISOFLURANE ANESTHESIA ON THE VITAL SIGNS MONITORING IN LABORATORY MICE

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Abstract

Inhalation anesthesia systems are used in laboratory animal experimentation due to their safety, easily adjustable dosage and rapid return to consciousness. Isoflurane is currently the most common volatile anesthetic used in mouse studies. The study aimed to investigate the influence of isoflurane on the vital functions during inhalation anesthesia in two mouse strains (inbred and outbred), suitable for blood collection and minor surgery. Heart rate, pulse distention, respiratory rate, peripheral arterial oxygen saturationand rectal temperature were measured during anesthesia and compared to the same parameters measured on awake animals. Results showed a decrease in the heart rate by 26% during 2% isoflurane anesthesia, while the breath rate decreased by 42%. Oxygen saturation remained at 95%–98% and the vascular distension caused by the pulse was relatively constant. Both groups showed a decrease in the rectal temperature by 1.6-2.2°C during anesthesia, with temperature values normalizing in 1.5-2 hours after anesthesia. The overall effects of isoflurane on mice vital signs were moderate, both induction and recovery from anesthesia proceeded quickly (1-4 minutes), with a rapid return of the animals to their normal state.

Key words*: inhalation anesthesia, isoflurane, vital signs, laboratory mouse.*

COST ANALYSIS OF TISSUE MICROARRAYS FOR CLINICAL DIAGNOSTIC

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Abstract

The need of issuing medical diagnoses withfastturn-around times (but without compromising accuracy)is generating technical challenges in all stages of histological processing. Because of the multiple variables related to tissue harvesting, processing, and sectioning quite often the resulting histological slides reach the pathologist with fragmented or incomplete tissue sections.In the present study we evaluated the feasibilityof a new method of multiplexing tissue specimens with irregular shapes by placing themduring grossing into sectionable matrices (BxFrame™ GRID).The working time required for a histotechnologist in obtaining multiplexed preparations as well as the costs oflaboratory supplies was compared with conventional methods. Five different types of tissue (duodenum, brain, heart, tail, and skin) were placed in BxFrame™ matrices, and subjected to histological processing, sectioned, and stained. The new multiplexing method reduced the total working time with 45% to 70% when compared to conventional methods(depending on the type of tissue)whilethe cost of consumableswas reduced with up to 70%.

Key words*: clinical diagnostic, clinical tissue microarray, cost reduction, laboratory consumables, sectionable matrix.*

VETERINARY EDUCATION

AUDIOBOOKS IN VETERINARY MEDICINE IN STEP WITH THE REALITY OF THE MULTILINGUAL WORLD DIDACTIC PROCESS

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Abstract

In the conditions of worldwide turmoil, pandemics and expansionists, the conventional, traditionalist teaching process must continuously adapt, and provide the student with fast, easy-to-access, stable, intuitive ways of information based on the end users' tendencies to access certain communication and socialization channels. Thus, the rethinking of the student-faculty partnership is required, and the improvement of the didactic process, through the use of sets of informational tools, which have the role of maximizing pedagogical efficiency, in several languages of study through: educational software, computerized programs necessary for the development of work guides electronic practices, of electronic course supports (for teachers-students); of other audio, video materials used to stimulate learning, but also to verify the acquisition of the basic knowledge acquired.

Key words*: audiobook evolution, didactic process, informational tools, electronic course supports, worldwide teaching.*

CHALLENGES IN IMPLEMENTING THE ONE HEALTH CONCEPT IN THE VIEW OF VETERINARY MEDICINE STUDENTS AND EARLY VETERINARY PRACTITIONERS

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Abstract

The concept of One Health is gaining increasingly importance as an effective way to control health issues at the human-animal-environment interface. The successful implementation of the One Health concept requires the cooperation of human, animal, and environmental health partners. The paper seeks to investigate the challenges in implementation of the One Health concept in the opinion of students and early veterinary practitioners, whose role is crucial and thus their attitudes are of key importance in the implementation process. The research was elaborated among students and graduates of International Veterinary Program at the Warsaw University of Life Sciences. The results indicate the importance of two groups of factors. On one hand, to cope with challenges related to sectoral factors, in particular increasing frequency and scale of zoonotic diseases. On other hand, to struggle with challenges related to the pressure of adapting qualifications and interdisciplinarity of activities. Consequently, the results indicate the need for changes in the education and training of young veterinarians and the necessity to develop LLL trainings oriented to One Health concept to respond to these challenges.

Key words*: One Health, Life-Long-Learning, practitioners.*

MISCELLANEOUS

CHUTE SCORE INFLUENCE ON PRODUCTION AND REPRODUCTION OUTPUTS IN DAIRY CATTLE

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Abstract

Indicators of temperament, such as fearfulness or aggressiveness can be measured on-farm during stressful handling procedures, with chute scoring being previously validated as a restraint method for assessing docility in beef cattle and shown to have implications on growth rates and fertility. The aim of this study was to evaluate the effects that chute score has on production levels, reproduction outputs and animal welfare indicators in dairy cows. The study was conducted at the Research and Development Institute for Bovine Balotesti, on 110 multiparous Romanian Black Spotted lactating cows. The chute score (CS) was evaluated using a 4-point subjective scale (1 - calm to 4 - extremely restless), with each cow being restrained for one minute in a Patura® A5000 chute (2.20/0.82 m). The CS significantly influenced ($p \leq 0.05$) the milk yield, with docile cows outperforming their reactive counterparts. However, no significant influence ($p > 0.05$) of the CS was found on body weight, calving interval, age at first calving or animal-based welfare indicators. Current results showed that CS in dairy cows has a significant effect on milking yield, and no effects on reproduction efficiency.

Key words*: chute score, behavioral reactivity, dairy cows, animal-based indicators, human-animal interactions.*

STUDIES REGARDING THE CYTOTOXICITY OF ANTIMICROBIAL GELS FORMULATED WITH NATURAL BIOPOLYMERS

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Abstract

Two antimicrobial gels, formulated with natural biopolymers, limonene, and an imidazole derivative, were subjected to cytotoxicity tests. In these two compositions, the limonene content was 0.4% and 0.67%. The cytotoxicity tests were performed in vitro, using MTT methodology, and a standardized human normal cells line, HUVEC type. These cells were exposed to different levels of gel concentrations in the culture media. The final concentration of each gel type in culture media was situated between (0-0.125) microL/mL. The cell viability was determined after 24, 48 and 72 h of exposure. The analyses showed that after 24h of exposure, the viability of the cells is greater than 91 %, after 48h the viability is greater than 80 %; after 72 h of exposure, the viability of the cells is greater than 74%. These values reveal that both selected gels do not exhibit cytotoxicity for the normal cell line.

Key words*: antimicrobial gels, biopolymers, cytotoxicity.*

FAUNISTIC EXAMINATION OF *Culicoides* IN SPREAD BELGRADE AREA

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Abstract

Genus Culicoides spp. are small insects usually grey or black and at first glance very similar to mosquitoes. They are strictly hematophagous, feeding by attacking hosts outdoors and indoors. In addition, the insects carry and transmit a multitude of diseases like bluetongue virus, Schmallenberg virus, etc. and therefore are of great epidemiological importance. In our paper we presented results of examination performed in spread Belgrade area during 2019. Species identification of Culicoides spp. has based on the morphology of adult insects. Culicoides spp. from Obsoletus complex were detected in 59.91% of the samples. Males were found in 20.54%, unpigmented (young) females in 68.91%, females which feed on the blood in 7.17%, and 3.38% were gravid females. Culicoides spp. from the Pulicaris complex were found in 34.06%. Males were found in 19.76%, unpigmented (young) females in 65.66%, females which feed on the blood in 11.01%, and 3.57% were gravid females. Other types of Culicoides spp. have been detected in less than 10% of the examined samples.

Key words*: Culicolides spp., biodiversity, Belgrade.*

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