University of Agronomic Sciences
and Veterinary Medicine of Bucharest

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International Conference

"Agriculture for Life, Life for Agriculture"

BOOK OF ABSTRACTS

Section 4

VETERINARY MEDICINE

2025
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THE COMPLEXITY OF GILL RACKERS EPITHELIA IN *GOBIO CARPATHICUS* (CYPRINIFORMES: GOBIONIDAE) – A MORPHOLOGICAL AND HISTOCHEMICAL DESCRIPTION

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Abstract

Gill rackers represent the inner surface of the gill arch, composed of rows of stiff strainers that serve to sort and position large food particles in the oesophagus. Due to their complex role combined with their anatomical disposition, the gill rackers epithelia display a high histological complexity. Paired gills were harvested from Carpathian gudgeon fish Gobio carpathicus Vladykov, 1925 and fixed in 10% buffered formalin. The samples were processed with the paraffin embedding technique and subsequently stained with Goldner's trichrome method, PAS, Alcian Blue (AA) and combined PAS-AA techniques. The obtained results show that the gill rackers are covered by a stratified epithelium composed of several layers of cells, including basal cells and mucus-producing cells, that integrate taste buds. The histochemical assessment revealed mucous cells able to produce complex mucins, that are both PAS and AA- positive. Thereby, even if the gill rackers are part of the gills, the covering epithelium reveals some features similar to the histo-morphology of the anterior pharynx, but also the gill rackers epithelia display common features with the epidermal structure.

Key words*: fish epithelia, gills, histochemical reaction, mucus-producing cells.*

STRUCTURAL PECULIARITIES OF THE VENOUS WALL BEFORE AND AFTER VALVES IN THE FEMORAL VEIN IN BROILER CHICKENS

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Abstract

This study aims to describe the microscopic structure of the femoral vein in broiler chickens, before and after the valves. The right femoral vein was collected from a 10-day-old broiler chicken that was histologically processed and the sections were stained by the Verhoeff-trichrom method. In the case of the femoral vein in broiler chickens, before the valves, the tunica media is made up of smooth muscle cells without being compactly arranged, while the tunica adventitia is predominantly fibrous. In the segment after the valves, the tunica media is more compact than in the segment before the valves and the tunica adventitia is fibro-elastic. At the borderline between the media and the adventitia, there are 3-4 elastic lamellae similar to those in the external elastic lamina of the arterial wall. At the level of the agger, the tunica media is twice as thick as in the segment after the valves. These structural differences of the venous wall are directly related to ensuring changes in the hemodynamic parameters in the phases of the valvular cycle (opening, equilibrium, closing and closed phases).

Key words*: femoral vein, microscopic structure, broiler chickens, valves, Verhoeff-trichrome.*

USEFULNESS OF EARLY ULTRASOUND THORACAL ASSESMENT FOR A GROUP OF NEWBORN FOALS, UNDER SUSPICION OF *RHODOCCOCCUS EQUI* INFECTION, IN INCREASING THE SURVIVAL RATE ASSOCIATE WITH EARLY TREATMENT

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Abstract

The paper aimed to present the importance of early thoracic ultrasound assessment for a group of newborn foals, under suspicion of Rhodoccoccus equi outbreak, in order to increase survival rate. We studied a group of 32 Pure Bred Arabian pregnant mares, that gave birth of 7 nonviable foals and 25 viable foals, out of wich 7 foals were dead between 14 days – 8 months of age, with clinical and post mortem signs associates with enzootic Rhodoccoccus equi pneumonia. Out of the 25 viable foals, we have performed an ultrasound examination of thorax and lungs for a number of 12 foals, with age between 2 days and 3 months and establish a prophylactic treatment protocol for all the foals that had significant to mild ultrasound changes (without or with mild clinical signs associate with ultrasound assessment). In conclusion, all foals that undergone prophylactic treatment, according to ultrasound assessment, have survived over 8 months of life, while most of foals that were born before and after the assessment, died, with clinical and post mortem signs of severe pneumonia, or developed a severe debilitating chronic bronchopneumonia.

Key words*: thoracic ultrasound, survival rate, newborn foals.*

PARTICULARITIES OF THE THYROID CONTROL OF LAYING CYCLE IN EGG-LAYING CHICKEN HYBRIDS DIFFERENTLY SELECTED FOR EGG PRODUCTION

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Abstract

The present work investigates the changes in thyroid control of the laying cycle in Lohman and Leghorn egg-laying selected hybrids versus Sussex non-selected breed. From 20 to 32 weeks of age (wk), blood thyroxine (T4) showed an upward trend, then T4 concentration followed a slow upward until 100 wk. The blood T4 evolution curve of Sussex hens was consistently below hybrid chickens ($P<0.05$). Blood triiodothyronine (T3) also showed an upward trend from 20 to 32 wk, followed by a plateau until 36 wk, after which, the T3 showed a slow downward trend until 100 wk. The increase in T4 and T3 during the period of entry into lay was related to the increase of photoperiod. Both hybrid and Sussex hens showed a decrease in T4 to T3 conversion after peak laying. The conversion capacity decrease was higher in hybrids versus Sussex. Blood T3 evolution level correlated negatively and weakly with laying intensity ($r=3.34$ in Sussex, -0.05 in Lohmann and 0.17 in Leghorn) but positively with ovary weight/body weight ratio ($r=0.96$ in Sussex, $r=0.66$ in Leghorn and $r=0.03$ in Lohmann hens).

Key words*: control, egg-laying chicken hybrid, iodinated thyroid hormone.*

CHANGES OF THE PITUITARY-OVARIAN AXIS IN THE CONTROL OF THE EGG-LAYING CYCLE IN CHICKEN HYBRIDS DIFFERENTLY SELECTED FOR EGG PRODUCTION

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Abstract

The selection process led to changes in the pituitary-ovarian axis control in egg-laying chicken hybrids. This work investigates the particularities of the control exercised by the pituitary-ovarian axis on reproductive function in Lohmann and Leghorn egg-laying selected hybrids versus the Sussex breed. The blood level of follicle-stimulating hormone (FSH) of the hybrids was higher than that of Sussex hens in the first part of the laying cycle, falling below that of Sussex hens in the second part of the cycle. The concentration of LH showed a peak at the peak egg-laying moment in all categories of hens, the values in hybrid hens being consistently higher than those of Sussex hens (P<0.05). The analyzed hybrids showed particularities of the ovarian endo-secretory response, characterized by a higher estrogen secretory peak at the beginning of laying and a higher secretory level in hybrid compared to Sussex hens (P<0.05), throughout the laying cycle. Both FSH and LH concentrations are positively correlated with laying intensity, the correlative values being higher for LH. Correlations with ovary and oviduct weight and ovarian follicle number were also identified.

Key words*: egg-laying hybrid chicken, pituitary control, egg-laying cycle, ovary response.*

POLYMICROBIAL ETIOLOGY OF SEVERE RESPIRATORY DISTRESS IN SWINE: A CASE STUDY FROM WESTERN ROMANIA

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Abstract

The porcine respiratory disease complex is a typical polymicrobial production disease and one of the swine industry`s most significant health and production problems. This study aimed to assess the presence of respiratory pathogens on a farm in Western Romania, with animals showing severe respiratory distress. On-site, post-mortem examination was performed, and tissue samples and swabs were collected. Actinobacillus pleuropneumoniae, Streptococcus suis, and Pasteurella multocida were isolated. Five pools of samples were tested by Real-time PCR and revealed the presence of Actinobacillus pleuropneumoniae in all of them, type A influenza virus was detected in two pools, and porcine circovirus type 3 in one pool. All pooled samples were negative for porcine reproductive and respiratory syndrome virus type 1 and type 2, porcine circovirus type 2, and Mycoplasma hyopneumoniae. Histopathology revealed necrotizing hemorrhagic pneumonia or fibrinous suppurative bronchopneumonia. This study confirms the presence of multiple respiratory pathogens in swine exhibiting severe respiratory distress, with Actinobacillus pleuropneumoniae as a predominant pathogen. The findings highlight the complex nature of porcine respiratory disease and underscore the need for targeted interventions to enhance swine health and production.

Key words*: swine, respiratory disease, Actinobacillus pleuropneumoniae.*

CANINE EXTRASKELETAL OSTEOSARCOMA AND SKELETAL OSTEOSARCOMA IN IMMUNOHISTOCHEMISTRY AND MOLECULAR COMPARATIVE INVESTIGATION

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Abstract

Extraskeletal osteosarcoma (EOS) is a form of osteosarcoma (OS), which rarely affects soft tissues, with characteristics overlapping with those of skeletal osteosarcomas and, therefore, also associated with variable production of osteoid matrix. After having performed a series of investigative tests characterizing some immunophenotypic aspects of extraskeletal osteosarcomas, our research group has developed in parallel the same investigation protocols also on spontaneous canine skeletal osteosarcomas. These results represent the continuation of the work started and previously described in the same context and characterize their evolution. This pathway program is aimed to understand the main phenomena involved their etiopathogenetic determinism, to identify their main biological features. These characteristics shed light on our attempts to interpret the factors of variability and instability of these tumors that fundamentally limit the possibilities of therapeutic and diagnostic determinations of these aggressive malignant forms. The aim of our work is to provide an exploratory comparative framework of the immunohistochemical expression of RUNX2, KPNA2, KI-67 to identify new diagnostic and prognostic patterns to mark the challenging differential process of these sarcomas.

Key words*: extraskeletal osteosarcoma canine, KI-67, KPNA2, osteosarcoma canine, RUNX2.*

MORPHOLOGICAL CHARACTERISTICS OF THE LONG BONES OF THE PELVIC LIMB IN THE RED-NECKED WALLABY (*MACROPUS RUFOGRISEUS*)

Petronela Mihaela ROȘU[1], Diana Marilena ȘERBĂNESCU[1], Sorina Andreea BENCHIA[1], Adela Ioana MUSTĂȚEA[1], Iliana RUZHANOVA-GOSPODINOVA[2], Cristian Romeo BELU[1], Bogdan GEORGESCU[1]

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Abstract

Red-necked wallaby (Macropus rufogriseus) belongs to the Diprotodontia order, Marsupialia infraclass, Macropodidae family, and the genus Macropus, and is spread particularly on the Australian continental. The Macropodidae family encloses all the marsupial herbivores, from which the kangaroos and the wallabies are the best known. This case study provides a complete description of the long pelvic limb bones in the red-necked wallaby. The morphological features of the skeleton provide valuable data in practice, allowing accurate species identification in case of disputes. The following conclusions emerged: the gluteal line is very high, the ischial tuberosity is rounded and drawn lateral, the iliopubic eminence is very developed, the greater trochanter is large, rectangular and undivided, the tibial intercondylar eminence is very high and elongated, and the articular surfaces relatively equal, the epipubic bones are L-shaped and the cranial extremity is the longer half.

Key words*: wallaby, pelvic girdle, femur, tibia.*

THE RELATIONSHIP BETWEEN MATING BEHAVIOR, INCIDENCE OF TRAUMATIC INJURIES, AND PRODUCTIVITY IN A REPRODUCTIVE POULTRY POPULATION

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Abstract

This study was conducted in a poultry breeding farm, aiming to analyze the mating behavior of birds from a population consisting of parental lines used for slow-growing colored broiler production. The research focused on direct observations made in the growing hall, investigating the causal relationship between reproductive activity and the incidence of traumatic injuries due to sexual aggression, as well as their impact on final productivity. Following the analysis of reproductive behavior, based on the examination of 1000 mating attempts, a detailed ethogram was developed. Data collected included details on courtship behavior, the hen`s response, and the outcome of each attempt. A total of 166 cases of aggressive trauma in hens were identified, with descriptions of each injury location and size. Productivity was evaluated based on the hatching rate obtained. The results revealed a significant correlation between mating behavior, traumatic injury incidence, and productivity. The intensity of aggression peaked early in the laying period, within the first 5 weeks, when the population was still young and inexperienced.

Key words*: mating aggression, poultry behavior, slow-growing colored broiler, traumatic injuries.*

RESEARCH REGARDING THE FUNCTION AND STRUCTURE OF THE PINEAL GLAND OF THE PIG

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Abstract

Research on the pineal gland in pigs has gained significant interest due to the physiological similarities between pigs and humans, making pigs a relevant animal model for studying pineal function and its potential applications in medicine. All though recent studies have focused on the pineal gland (mostly regarding structure and innervation of the gland), our own research highlighted in the present paper, as a result of optical and electronic microscopy (TEM and SEM), details of histological and ultramicroscopic organization of the constituent cell types of the pineal gland in pigs. We focused on demonstrating the possible physiological mechanisms of secretion, as well as the elimination pathways of the active endocrine biological products (indole and peptide hormones) of the component cells of the pineal gland. Our research significantly contributes with important information about the function and the internal cell mechanisms of this important endocrine gland and provides valuable insights for biomedical applications that can translate in human medicine.

Key words*: electro-microscopy, light pathway, pineal gland, pinealocytes, secretion.*

CLINICAL SCIENCES

EGFR OVER-EXPRESSION IN CANINE GASTRIC ADENOCARCINOMA IN 36 DOGS

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Abstract

Gastric adenocarcinoma is the most frequent tumor which affects the stomach of dogs, having multiple causes. EGFR (Epidermal Growth Factor Receptor) has an important impact in the development and expansion of gastric tumors, representing the first receptor which provides the connection between overexpression and cancer. The present study included 36 dogs with digestive syndromes, expressed as vomiting and melaena. Routine hispopathological examinations on full-thickness gastric biopsies sampled by endoscopy, and on the tissue samples taken during necropsy, were completed by EGFR identification by immunohistochemistry to estimate prognosis and select therapy. It have been concluded that 14 cases presented signet ring cell adenocarcinoma, nine patients with tubular adenocarcinoma, ten with papilary adenocarcinoma, while the rest of three patients had undifferentiated adenocarcinoma. The highest rates of EGFR expression were identified in 38.4% of cases (n = 10), highlighting a worse prognosis. EGFR expression was associated with the location of tumoral type, tumor size, cell differentiation, invasion, being positive in 26 cases of gastric cancer tissue (72%), while in the rest of ten cases (28%) were featured by low expression.

Key words*: EGFR, gastric adenocarcinoma, gastritis.*

EPIZOOTIC SITUATION OF BOVINE TUBERCULOSIS IN EUROPE FOR A TEN YEAR PERIOD

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Abstract

Bovine tuberculosis is a chronic animal disease caused by members of the Mycobacterium tuberculosis complex, primarily by M. bovis. It is a major zoonotic disease, cattle being the main source of infection for humans. It also affects other domesticated animals such as sheep, goats, equines, pigs, dogs and cats, and wildlife as wild boars, deer, and antelopes. This is a disease of international importance, subjected to mandatory reporting to the WOAH. Bovine tuberculosis remains a serious problem for animal and human health in many developing countries. In order to analyze the tendencies in the disease prevalence in Europe we used data from the Animal Disease Information System. The generated information over a decade from 2013 to 2023, showed that 12 Member States and 2 non-EU countries have declared cases of bovine tuberculosis. The total number of outbreaks detected over the years has decreased, as in 2013 and 2014 it was 211 and 136 respectively, and in 2022 and 2023 - 144 and 163. At the end of the period a decrease of about 23% in the registered outbreaks was observed.

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

UPPER AND LOWER JAW FRACTURES MANAGEMENT IN DOG AND CAT

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Abstract

Car accidents, bites trauma or high-rise sindrome are the main causes of mandible and maxilla fractures in dog and cat. This article presents the surgical approaches for the treatment of different types of fractures resulting from traumatic maxillofacial and mandibular injuries. Maxilar or mandibular body fractures are the most common oral fractures seen in dogs. In cats, fractures of the mandibular ramus are less common than those of the symphysis. The surgical technique must be adapted to each case according to the complexity of the fracture. The assessment of the integrity of the soft tissues and their eventual surgical restoration is performed intraoperatively. Postoperative recovery must be correlated with the degree of trauma to the adjacent soft tissues. Osteomyelitis and delayed union are common complications in the upper and lower jaw fracture repair process in dog and cat.

Key words*: maxilar, mandibular, fracture, dog, cat.*

OPHTALMIC DISORDERS CAUSED BY DENTAL DISEASE IN DOGS

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Abstract

Dental conditions such as tooth crown fracture, periodontitis or apical tooth root abscess in dogs can cause eye damage. Ophthalmological examination of patients from small dog breeds (Bichon, Yorkshire Terrier, Pomeranian) or brachycephalic dogs (Pug, Shih-tzu, Peckinez, French Bulldog) diagnosed with conjunctivitis, keratitis, corneal ulcer or uveitis must be completed with a dental examination. The information obtained through imaging (x-ray or CT) shows the degree of dental damage that can be one of the causes of the eye disease. The position of the roots of the 4th premolar in the dog and the maxillary molars near to the incomplete orbit allows periodontal disease to develop orbital (retrobulbar) cellulitis. The therapy should primarily include treating the primary dental condition as quickly as possible to prevent secondary ocular complications (panophthalmia) that can lead to enucleation.

Key words*: eye, periodontitis, orbital cellulitis, dog.*

RAPID AND RELIABLE REAL TIME PCR WORKFLOW FOR DETECTION OF AFRICAN SWINE FEVER VIRUS

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Abstract

ASF is a fatal haemorrhagic disease affecting pigs, posing a significant threat to global agriculture as it rapidly spreads across UE, Asia. Due to the lack of a vaccine or treatment, initial outbreaks require pursuit of stringent biosecurity measures, trade restrictions. The disease development is causing significant economic losses due to the stamping out of pig holdings in the affected areas, the pursuit of disease control measures including the imposition of trade restrictions to prevent disease spread. Since the onset of the ASF, Romania has been severely affected economically, socially, suffering losses in commercial, backyard farms, unemployment among workers in the pig and meat processing industries, significant expenditure on disease control and surveillance. ASF remains a major threat with no available vaccine and challenging eradication. Rapid, sensitive diagnostics are crucial. Proposed workflow offers multiple advantages, including the ability to verify extraction, amplification efficiency for each sample through amplification of two internal control systems, ensuring accurate pathogen detection regardless of nucleic acid presence, confirming sample cellularity to validate result accuracy and prevent false negatives due to inadequate collection, transport, or storage.

Key words*: ASF, ASFV, cellularity, diagnosis, Real-Time PCR.*

MANAGEMENT OF DIFFERENT TYPES OF PNEUMOTHORAX IN CATS

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Abstract

Traumatic pneumothorax in cats can arise from a variety of thoracic injuries. Common aetiologies include blunt force trauma, which may result from incidents such as high-rise syndrome, motor vehicle accidents, altercations, or cases of animal abuse. Pneumothorax is generally categorized into two primary etiological types: acquired and spontaneous. Acquired pneumothorax can be further subclassified into traumatic and iatrogenic categories, while spontaneous pneumothorax is divided into primary and secondary forms. Additionally, pneumothorax can be classified based on pathophysiological characteristics, distinguishing between open versus closed and tension versus simple types. Identifying the specific type of pneumothorax and determining the appropriate treatment can be particularly challenging in patients with a history of trauma. Pneumothorax diagnosed in 42 cats due to traumatic injuries in University Veterinary Emergency Hospital "Prof. dr. Alin Bîrțoiu` last year. This article focuses on different types of pneumothorax, emergency stabilization, diagnosis based on CT scans and surgical management of primary spontaneous pneumothorax.

Key words*: primary spontaneous pneumothorax, lobectomy, trauma.*

PLANNING ORBITAL AND FACIAL BONE IMPLANTOLOGY IN CATS USING CT VOLUMETRIC RECONSTRUCTIONS AND CAD TECHNOLOGIES: CASE REPORT AND FINANCIAL CHALLENGES

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Abstract

Advanced imaging and 3D reconstruction technologies are transforming veterinary surgical planning by enabling precise and customized interventions. This case report describes a 14-year-old cat with a facial mass, where CT imaging revealed extensive bone lysis affecting the orbit and adjacent facial bones. Volumetric CT reconstructions facilitated the creation of 3D models used in CAD software to design titanium prosthetic implants fabricated through 3D printing. While these implants provided a potential solution for restoring anatomical integrity, the surgery was ultimately declined due to financial constraints. This report highlights the potential of integrating CT imaging, 3D reconstructions, and CAD technologies in veterinary implantology, while emphasizing the financial and logistical challenges that limit the accessibility of these advanced solutions.

Key words*: 3D printing, bone lysis, CAD technologies, CT volumetric reconstructions, orbital reconstruction, veterinary implantology.*

ADVANCED IMAGING AND SURGICAL INTERVENTION IN THE MANAGEMENT OF A CANINE ADRENAL PHEOCHROMOCYTOMA – A CASE REPORT

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Abstract

Pheochromocytomas are rare adrenal neoplasms in dogs with systemic implications. This report details a 4-year-old spayed mixed-breed dog presented for a corneal melting ulcer, where polyuria-polydipsia prompted further investigations. Biochemical tests showed low serum cortisol (1.5 µg/dL) and cTSH (<2.5 ng/dL), with no other abnormalities. Abdominal ultrasound revealed a left adrenal mass adherent to the kidney and caudal vena cava, further confirmed by CT to involve significant vascular structures. Surgical intervention included total nephrectomy, adrenal mass excision, and vena cava reconstruction. Despite the procedure`s technical success, the patient died from arrhythmia and hypertension complications 48 hours post-surgery. Histopathology confirmed pheochromocytoma without renal infiltration. This case highlights the essential role of advanced imaging in diagnosis and surgical planning and underscores the perioperative risks of managing such aggressive tumors.

Key words*: pheochromocytoma, adrenal neoplasm, computed tomography (CT), abdominal ultrasound, nephrectomy.*

PREVALENCE OF *LEPTOSPIRA* ANTIBODIES IN HORSES FROM ROMANIA

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Abstract

Leptospirosis, a zoonotic disease with a worldwide distribution, can affect horses causing reproductive disorders, such as abortion, embryonic absorption and stillbirths. The aim of the current study was to determine the prevalence of Leptospira antibodies in mares and stallions belonging to a breeding farm in the southern region of Romania. Blood samples were collected from 91 horses and were analysed by the microscopic agglutination test (MAT) using 12 distinct live antigens. To determine if acute infection was present, the positive individuals were retested after 14 days. The results showed that Leptospira antibody prevalence was high, with 67.03% of samples testing positive. Of the 91 samples included in the study, 40 tested positive for one serotype, 11 samples for 2 serotypes, 2 samples for 3 serotypes and 1 sample reacted positive with 5 serotypes.

Key words*: equine leptospirosis, horses, MAT, reproduction, serological survey.*

SUBLUXATION T10-T11, WITH SLIGHT VENTRAL DISPLACEMENT OF THE T10 VERTEBRAL BODY – CASE PRESENTATION

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Abstract

In this paper we present a 3-year-old male sex feline with a surgically treated T10-T11 subluxation. Anteoperatively, the patient experienced paraplegia, properception absent, superficial sensitivity absent and deep present on the pelvic limbs. Examen CT, shows a subluxation T10-T11, which is not, with slight ventral displacement of the T10 vertebral body producing moderate bone marrow compression. Disk degeneration and protrusion T10-T11 that produces moderate bone marrow compression. Therapy was surgical and consisted of a T10-T11 laminectomy, with medullary decompression and intervertebral stabilization with screw-referenced prosthesis in order to cancel a postoperative fracture or dislocation. In conclusion, correct surgical therapy of an intervertebral subluxation, consists of a laminectomy on the compression site, followed by an intervertebral stabilization.

Key words*: laminectomy, stabilization., subluxation, marrow compression.*

EFFECT OF CULTIVATION PARAMETERS ON BACTERIAL DENSITY AND TOXIN PRODUCTION OF A *CLOSTRIDIUM PERFRINGENS* TYPE C STRAIN

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Abstract

The purpose of the current study was to investigate the effect of certain cultivation parameters, such as pH adjustment, stirring and nutrient addition, on the bacterial density and toxin production of a Clostridium perfringens type C culture. Bacterial cultures were grown simultaneously on a 30-liter Bionet bioreactor and an industrial 500-liter bioreactor. Both experiments were performed using the same culture media, the same nutrients and the same inoculum, and during the same timeframe. Differences in bioreactor equipment, such as homogenization systems and pH measuring equipment, resulted in different final cultivation outcomes. The toxicity of the experimental Bionet culture was determined at 3200 LD50, while the industrial bioreactor culture tested at only 800 LD50 toxicity.

Key words: *beta toxin, immunogenic, Clostridium perfringens, cultivation, vaccine.*

INFLUENCE OF HABITAT AND FEED TYPE ON HEAVY METAL CONCENTRATIONS IN DOGS

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Abstract

Heavy metals are more ubiquitous as their uses have grown over the years. This researched aimed to assess the concentrations of some heavy metals (Pb, Cd, Hg, Ni) using dogs' hair as a bioindicator, while also taking into consideration the living and feeding conditions of the dogs. The hair samples were analysed by Inductively Coupled Plasma Mass Spectrometry. Generally, dogs that ate homecooked food had higher levels of heavy metals compared to those that ate commercial food. In addition, dogs that lived outdoors had statistically significant higher Pb and Ni concentrations, compared to indoor dogs. The findings of this research support the assumption that dogs which are raised outdoors, in a polluted environment, accumulate higher levels of some heavy metals.

Key words*: lead, cadmium, mercury, habitat, dogs.*

THE CLINICAL AND LESIONAL PRESENTATION OF *ERYSIPELOTHRIX RHUSIOPATHIAE* INFECTION IN SHEEP

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Abstract

Erysipelothrix rhusiopathiae is a bacterium that poses a significant health threat in sheep, manifesting through a range of clinical signs and lesions. Clinical presentations of infection include fever, joint swelling characterized by arthritis, and systemic signs such as erythema and necrosis of the skin. Affected sheep may exhibit difficulty in movement or lameness, indicating discomfort and severe illness. Lesion formation often involves pronounced inflammation of the skin, and in advanced cases, there may be indications of septicemia. Furthermore, complications such as fibrinous pericarditis and endocarditis can arise in severe instances of the infection. Understanding the clinical and lesional manifestation of Erysipelothrix rhusiopathiae is crucial for effective diagnosis and management in sheep populations.

Key words*: Erysipelothrix rhusiopathiae, sheep, clinical signs, lesions, septicaemia.*

INCIDENCE OF RESPIRATORY DISEASES IN POST-WEANED HEIFERS ON A DAIRY FARM

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Abstract

Bovine respiratory disease (BRD) is a leading cause of morbidity and mortality in cattle worldwide, significantly affecting both beef and dairy production systems. This article explores the epidemiology, risk factors, and management strategies linked to BRD. It emphasizes the multifactorial nature of the disease, with key contributions from infectious agents like Mannheimia haemolytica, Pasteurella multocida, and viral pathogens, including infectious bovine rhinotracheitis (IBR). Environmental and management factors such as poor ventilation, high animal density, and stress during transport or weaning further increase the disease`s incidence and complicate prevention efforts. The study shows that calves aged 2 to 4 months are most vulnerable, particularly during the post-weaning phase when immune defence is weakened, making them more susceptible to infection. Early detection through clinical observation and advanced diagnostic tools is essential, alongside preventive measures like vaccination, proper colostrum management, and stress reduction. The article highlights the significant economic impact of BRD, including slower growth, reduced productivity and higher veterinary costs, and advocates for integrated approaches that combine management, diagnostics, and vaccination to control the disease effectively and reduce long-term losses.

Key words*: Bovine Respiratory Disease, morbidity, mortality, economic impact.*

DETECTION OF *LEPTOSPIRA* ANTIGENS IN EQUINE URINE SAMPLES BY RT-PCR

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Abstract

Leptospirosis is a zoonotic disease, transmitted either through direct exposure to the urine of infected animals, or via contact with contaminated materials. Horses are generally considered an unlikely source of infection, although recent studies show they may carry an important role in the maintenance and spreading of leptospirosis, especially in areas of the world with a tropical climate. The purpose of the current study was to determine the presence of Leptospira sp. antigens in urine samples collected from mares belonging to a reproduction farm in Romania. The subjects included in the study were Haflinger mares with no apparent manifestations of leptospirosis. The samples were analysed using RT-PCR, and the results we obtained demonstrate that equines can be asymptomatic shedders of leptospires.

Key words*: equine, leptospirosis, horses, reproduction, RT-PCR.*

OUTCOMES ASSOCIATED WITH SUPERIOR SUBPALPEBRAL LAVAGE TREATMENT SYSTEM PLACED IN 11 EQUINE EYES

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Abstract

Corneal diseases in horses are common and very painful and this is why local treatment using eye drops is a great challenge. Local treatment in corneal diseases in horses for corneal ulcers or after corneal reconstructive surgery is long-term. The frequency of eye drops administration is 4-6 times a day and in the case of horses that also have eye pain it will be a stress factor. The use of the subpalpebral eye lavage system in horses reduces the animal`s stress and a correct and efficient treatment is achieved ensuring the healing of corneal diseases. The aim of this article is to highlight the efficiency of the subpalpebral eye lavage system in 11 horses treated in the Veterinary Teaching Hospital Prof. Alin Bîrţoiu.

Key words*: subpalpebral eye lavage system, corneal ulcer, corneal surgery, horses.*

COMPARATIVE STUDY OF THE USE OF AMNIOTIC MEMBRANE SUSPENSION (EYEQ AMNIOTIC EYE DROPS®) IN NON-VASCULARIZED AND VASCULARIZED INDOLENT CORNEAL ULCERS IN DOGS

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Abstract

Indolent corneal ulcer in dogs known as canine spontaneous chronic corneal epithelial defects (SCCEDs) is a challenge for the veterinarian due to its frequency and recurrence, especially in brachycephalic breeds. Debridement is an important condition for the healing of indolent corneal ulcers in dogs. Over time, combinations of eye drops containing antibiotics and corneal healing agents have been used. In this study, the effectiveness of amniotic membrane suspension (EyeQ Amniotic Eye Drops®, Vetrix, Cumming, Ga, USA) was compared in 22 dogs diagnosed with non-vascularized and vascularized indolent corneal ulcers after multiple debridements. The conclusion of this study showed that the appearance of corneal vascularization reduces the healing period compared with non-vascularized indolent corneal ulcers.

Key words*: indolent corneal ulcer, amniotic stem cell eye drops, debridement, dog.*

TRACHEOBRONHOSCOPY AND BRONCHOALVEOLAR LAVAGE IN CATS WITH LOWER RESPIRATORY TRACT SYMPTOMS

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Abstract

Diseases affecting the respiratory system are common in veterinary practice. Flexible tracheobronchoscopy allows for direct visualisation of the trachea, bronchi, and oropharynx and is a valuable diagnostic tool for evaluating and managing feline respiratory diseases. Diagnostic indications include assessment of structural abnormalities (tracheobronchial collapse, stricture, intraluminal mass), inflammatory conditions (chronic bronchitis, anthracosis, pneumonia), or traumatic injuries. Various airway sampling techniques have been used for tracheobronchoscopy. Bronchoalveolar lavage fluid (BAL) has demonstrated superior efficacy as a specimen collection method. Tracheobronchoscopy was performed during the clinical examination of cats presenting cough, respiratory distress, or associated symptoms. Cats were assessed for airway hyperemia, stenosis or collapse, mucus accumulation, bronchiectasis, and epithelial abnormalities. Based on the cytology of the bronchoalveolar lavage results, cats were categorised into groups for bronchitis/asthma, pneumonia, anthracosis or endobronchial abnormalities. A collection of bronchial abnormalities and total and differential cell counts were compared across groups. Bronchoscopic abnormalities are frequently seen in felines with lower respiratory tract disease, and airway visualisation offers additional nonspecific clinical insights in cats.

Key words*: anthracosis, asthma, bronchoalveolar lavage, tracheobronchoscopy, pneumonia, respiratory tract endoscopy.*

STUDY ON THE EFFICACY OF PHYTOTHERAPY IN THE TREATMENT OF ARTHROSIS IN FIVE DOGS

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Abstract

Phytotherapy is a branch of alternative medicine, based on the healing properties of plants, which humans have used since ancient times. Considering the reduced risks of the bioactive compounds in botanical sources, the introduction of this therapy became of interest to veterinary medicine, especially in correlation with chronic pathologies. This is particularly relevant for managing chronic conditions where long-term pharmacological treatments often lead to adverse reactions. Arthrosis, a degenerative joint disease, is characterized by the progressive degradation of articular cartilage, accompanied by inflammatory processes and resultant pain and treated with a protocol that includes the administration of non-steroidal anti-inflammatory drugs (NSAIDs), analgesics, and adjunctive joint protectors. The present study aims to investigate the efficacy of phytotherapy in five canine patients diagnosed with arthrosis, by introducing a supplement whose composition includes Nettle extract, Boswellia extract, Copper, Turmeric Extract, and Manganese. Before and following the cessation of conventional therapy, each patient underwent a comprehensive pain scale assessment, alongside monitoring of relevant biochemical parameters, to ascertain the impact of the alternative treatment.

Key words*: phytotherapy, alternative medicine, arthrosis, pain management.*

CLINICAL AND NEUROLOGICAL COORDINATES IN THE DIFFERENTIAL DIAGNOSIS OF HYPOTHYROIDISM IN CORRELATION WITH PERIPHERAL NERVOUS SYSTEM DISORDERS – A CASE SERIES REPORT

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Abstract

Hypothyroidism is a prevalent endocrine disorder in dogs, characterized by a spectrum of clinical manifestations encompassing metabolic, dermatological, reproductive, and neurological abnormalities. In cases where neurological deficits are the sole presentation of hypothyroidism, the diagnostic process is frequently complicated by the overlapping features with peripheral nervous system (PNS) disorders. Notable similarities between these conditions include reduced spinal reflexes, postural changes, generalized muscle weakness associated with atrophy. The objective of this study is to present the diagnostic coordinates of ten canine patients who were presented during 2023 to the Veterinary Emergency University Hospital Prof. Dr. Dr. Alin Bîrțoiu in Bucharest with neurologic deficits that imposed differential diagnosis between PNS disorders and hypothyroidism. The protocol used included patient identification, anamnesis, clinical examination, complete neurological evaluation, followed by localization of the lesion and differential diagnosis based on the VITAMIND acronym. Confirmation of hypothyroidism was based on the measurement of serum thyroxine (T4) concentrations.

Key words*: hypothyroidism, peripheral nervous system disease, peripheral neuropathy, T4, generalized muscular weakness.*

MANAGEMENT OF UTERINE PROLAPSE IN CATS – A REPORT OF THREE CASES

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Abstract

Uterine prolapse is a rare and serious obstetrical emergency in felines, typically diagnosed more than 48 hours after parturition or abortion. This study aims to assess the therapeutic and surgical approaches for three mixed-breed cats that developed post-partum uterine prolapse. The diagnostic process included a thorough clinical examination, laboratory blood tests, and Point of Care Ultrasound (POCUS) for accurate assessment. Treatment was carried out in two stages: the first involved uterine repositioning, followed by ventral midline laparotomy and ovariohysterectomy. All surgeries were conducted under general anesthesia, ensuring patient safety. Post-operative care consisted of antibiotics, analgesia, and diligent monitoring to ensure proper recovery and prevent complications.

Key words*: feline, parturition, management, uterine prolapse, surgery.*

CLEFT PALATES IN BRACHYCEPHALIC DOGS

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Abstract

This study aimed to assess the quality of life and survival rate of brachycephalic puppies with congenital orofacial clefts (cleft palate and lip) during their first month of life. Conducted at the Faculty of Veterinary Medicine in Bucharest, the research included 12 puppies from brachycephalic breeds, with a majority of French Bulldogs. The study found that 4 puppies died immediately after birth, 2 within the first 48 hours, and the remaining 6 were monitored for 30 days. The puppies faced significant health challenges, including feeding difficulties, aspiration pneumonia, and malnutrition, leading to a high mortality rate. The results emphasize the need for better breeding controls, genetic screening, and early intervention to reduce congenital defects and improve outcomes for these dogs.

Key words*: cleft palates, brachycephalic, dog.*

THE IMPORTANCE OF VENTRICULAR MEASUREMENTS IN ESTABLISHING THE DIAGNOSIS OF HYDROCEPHALUS IN DOGS

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Abstract

Hydrocephalus is a multifactorial disorder that was properly diagnosed in dogs until the availability of advanced imaging techniques in veterinary practice. The study was conducted on a sample of 15 dogs, aged between 3 months and 12 years, both females and males, different breeds. To perform the measurements, two ratios were calculated: V/C (width of ventricles/width of cerebral parenchyma), Vh/Ch (height of ventricles/height of cerebral parenchyma) and corpus callosum angle. The average ratio between V/C was 0.68 (values being between 0.52-0.83), the average ratio between Vh/Ch was 0.60 or 60% (values being between 0.88-0.26), and the average of the corpus callosum angle was 69.4° (values being between 56°-88°). This article evaluates different ventricular measurements based on MRI techniques for establishing hydrocephalus in dogs.

Key words*: dog, hydrocephalus, MRI, ventricular measurements.*

SECONDARY PANCREATITIS IN 28 CATS WITH INFLAMMATORY BOWEL DISEASE (IBD) AND INTESTINAL T-CELL LYMPHOMA

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Abstract

Pancreatitis in cats is usually associated with inflammatory bowel disease (IBD) and intestinal malignancies. Even the causes of pancreatitis are multiple, IBD and intestinal lymphomas represents one of the important causes of acute pancreatitis, in the first stages of diseases. The study included 28 cats with confirmed IBD and intestinal lymphoma, which presented acute and chronic pancreatitis, with different degree of structure modifications. The scores established to classify the pancreatitis grade were based on: severity of clinical expression, abdominal ultrasonography pancreatic size (n=22), gross features observed in dead animals (n=6), cytological and histological alterations. The abdominal echography presented severely thickened pancreas with reduced echogenicity and peripancreatic lymphadenopathy (n=20). Postmortem examination revealed prominent lobular structure and fat tissue. Microscopic features were consistent with the presence of inflammatory cells, interlobular inflammation, fibrosis, and modification of the exocrine pancreas structure. Pancreatitis was scored on a scale of 0 to 3 (from no structural alteration, to severe modifications), and it revealed: a score from 0-2 corresponding to IBD, while a bigger number of patients diagnosed with T-cell lymphoma determined score 2 and 3.

Key words*: cats, IBD, intestinal lymphoma, pancreatitis.*

MANAGEMENT OF OVINE RINDERPEST

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Abstract

The year 2024 brings with it a new confrontation for Romania, namely a new disease with a discouraging and challenging evolution for the competent authorities and farmers. The paper analyzes the successful elements of the PPR vaccination programs applied by various selected countries, respectively the current innovative aspects that have led to notable progress in the eradication of PPR, at the same time identifying the common challenges in the implementation of these programs and obviously suggesting solutions for Romania. Therefore, the work offers strategic guidelines and recommendations regarding the way forward for PPR vaccination in Romania and a possible vaccination scheme.

Key words*: management, ovine rinderpest, peste de petits ruminants.*

THERAPEUTIC POTENTIAL OF PLATELET-RICH PLASMA (PRP) IN DOG OSTEOARTICULAR DISORDERS

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Abstract

Platelet-Rich Plasma (PRP) therapy, derived from autologus canine blood, enhances tissue repair and modulates inflammation by concetrating platelets and growth factors. This study involved 20 dogs of various ages, breeds and gender, with joint traumatic injuries, such as coxofemoral luxation, patellar luxation, cruciate ligament rupture and degenerative joint disease (DJD), diagnosed through radiological exams. PRP was prepared by extracting blood into tubes containing separation gel and anticoagulant, followed by high-speed centrifugation. The PRP was injected into affected joints under general anesthesia and administered according to each patient's specific treatment protocol. Periodic evaluations at 15, 30, 60 and 90 days, as well as at 6 months and 1 year have demonstrated excellent recovery without complications, highlighting the healing potency of PRP for both traumatic and degenerative conditions. The improvement was observed in 60% of cases after one administration, with 50% (n=10) of non-surgical and 10% (n=2) of surgical patients. Additionally, 10% of non-surgical and 30% (n=6) of surgical patients required two PRP administrations. The study demonstrated the safeness of treatment, even for unresponsive patients to conventional anti-inflammatory therapies.

Key words*: Platelet-Rich Plasma, degenerative joint disease, inflammation, healing.*

THE COMPLEXITY OF DIAGNOSTIC AND THERAPEUTIC MEASURES OF NEUROENDOCRINE PITUITARY TUMORS, A RETROSPECTIVE STUDY OF 20 CASES

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Abstract

Pituitary neuroendocrine tumors (PitNETs) in dogs can cause a variety of symptoms, including intracranial hypertension and hormonal imbalances. Limited access to imaging tools often leads to misdiagnosis. This study investigates the diagnostic protocols, initial treatments, and management of adverse reactions in 20 dogs with pituitary masses. Diagnostic methods used included clinical examinations, blood tests, and medical imaging. Symptomatic treatment alone is insufficient for pituitary adenomas, and alternatives such as stereotactic radiotherapy, chemotherapy, and transsphenoidal hypophysectomy may be more effective. In this study, 70% of cases were diagnosed with pituitary-dependent hyperadrenocorticism (PDH), and 15% had neurological deficits. Three dogs were found to have incidental pituitary adenomas. Four PDH cases were treated with stereotactic radiotherapy combined with chemotherapy (thalidomide and cyclophosphamide), leading to a 20% reduction in tumour size and better endocrine control. The study highlights the importance of achieving hormonal homeostasis after oncological treatment. Its objective is to evaluate a multidisciplinary approach to managing PitNETs in dogs and assess the combined effects of stereotactic radiotherapy and chemotherapy.

Key words*: PitNET, hyperadrenocorticism, stereotactic radiotherapy, endocrinology, chemotherapy.*

EVALUATION OF A THERAPEUTIC PROTOCOL IN SEVERE EQUINE ASTHMA IN SPORT HORSES: A CLINICAL EXPERIENCE

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Abstract

Severe equine asthma (RAO – Recurrent Airway Obstruction) is a chronic respiratory condition frequently encountered in sport horses, significantly impacting athletic performance. This case study evaluates the effectiveness of a complex therapeutic protocol applied to a sport horse diagnosed with severe equine asthma, including medication therapy (anti-inflammatory drugs, mucolytics, and nebulizations with bronchodilators), a hygienic-dietary regimen to reduce allergen exposure, and detailed monitoring of clinical progress. The results showed significant improvement in respiratory clinical parameters, with a reduction in airway inflammation, demonstrated by cytological analysis of bronchoalveolar lavage. A major improvement in the cytological profile was also noticed, leading to a gradual recovery of the horse`s exercise capacity. The study aims to demonstrate that personalized treatment and strict environmental management are essential for optimizing horses` health with severe equine asthma.

Key words*: RAO, horse, bronchoalveolar lavage.*

DYNAMICS OF SOME IMMUNOBIOLOGICAL INDICES IN CATTLE DEPENDENT ON AGE

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Abstract

The immune activity of the animal organism is the activity of some immunobiological indices, which constitute the essence of immune investigations regarding the behavior of cellular immunity in animals. Immunity is the body`s ability to defend itself against pathogens - viruses, bacteria, parasites and toxins. The immune system is a complex system of cells and molecules (antibodies) whose role is to provide protection against aggressors. The objective of this research is to present an analysis and assessment of some immunobiological indices in cattle depending on age. The research results offer the possibility to interpret the role of immune cells in the installation of the immune response in the animal body.

Key words*: immunity, immunobiological indices, cellular immunity, cattle, cell.*

CASE REPORT REGARDING THE OUTCOME OF SHOCKWAVE THERAPY IN THE TREATMENT OF TENDINOPATHIES WITH LOW HEALING RATES IN SPORT HORSES

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Abstract

Tendinopathies in sport horses, particularly those with low healing rates, represent a major challenge in veterinary medicine. Shockwave therapy has shown promising significant effects, stimulating tendon tissue healing and reducing pain compared to conventional treatments. Deep digital flexor tendon (DDFT) injuries are common in sport horses and are caused by repetitive biomechanical stress. This study examines the success of shockwave therapy in managing insertional injuries of the DDFT with low healing rates in a 14-year-old female Oldenburg show-jumping horse. Clinical and imaging assessments through MRI revealed significant improvements in approximately three months of therapy, including reduced pain, increased mobility, and improved healing of the affected tendon. This case report aims to demonstrate that shockwave therapy (ESWT) increases the healing rate, reducing recovery time in sport horses.

Key words: *shockwave, tendinopathy, horse, DDFT.*

A RETROSPECTIVE STUDY ON THE INCIDENCE OF CRYSTAL TYPES IN CATS

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Abstract

Cats exhibit a high susceptibility to the formation of urinary calculi, which can lead to severe urinary complications. This study was conducted on a batch of 46 cats from a private veterinary clinic in Bucharest, consisting of 15 females and 31 males. Particular attention was given to gender differences as well as the reproductive status of the animals. Among the females, 14 were spayed, while 27 of the males were neutered.
The most frequently identified type of urolith was magnesium ammonium phosphate (struvite), observed in 25 cases, followed by amorphous crystals in 13 cases, calcium oxalate in 3 cases, and mixed urolithiasis (magnesium ammonium phosphate and calcium oxalate) in 5 cases. The study also examined correlations between the type of calculi, breed, and age of the animals.
Identifying these factors, particularly the type of uroliths, is crucial for optimizing therapeutic protocols and enhancing treatment success. Early intervention based on these findings could reduce the need for surgical procedures, thereby improving the clinical management of these conditions.

Key words*: uroliths, cats, calcium oxalates, magnesium ammonium phosphates, urinalysis.*

EMERGENCY MANAGEMENT IN A DOG WITH ETHYLENE GLYCOL INTOXICATION: CASE REPORT

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Abstract

A 1-year-old, 20 kg, intact female mixed-breed dog was admitted for a nephrology consultation following ethylene glycol ingestion. Upon examination, the patient displayed severe hypertension (202/154 to 205/156 mmHg, measured by oscillometric method), abdominal pain, conjunctivitis, advanced dehydration, a rectal temperature of 38.9°C and dry mucous membranes. Laboratory tests revealed elevated BUN 151 mg/dL, CRE 10.2 mg/dL, PHOS 9.9 mg/dL and GLU 123 mg/dL. Urinalysis showed borderline proteinuria (UPC 0.5-2.0), pH of 5.0, and microalbumin ≥25 mg/L. To preserve renal function, hemodialysis was indicated as extracorporeal renal replacement therapy. Over eight days, four hemodialysis sessions were performed following the placement of a central venous catheter under light sedation with oxygen therapy supplementation. These therapeutic interventions, including intensive fluid management, were crucial in improving renal function. Significant biochemical improvements were observed: BUN decreased to 66 mg/dL, CRE to 3.7 mg/dL and PHOS to 8.0 mg/dL. Additionally, Ca levels rose from 11.3 mg/dL to 13.5 mg/dL. This case emphasizes the importance of timely intervention in acute kidney injury following ethylene glycol toxicity. Continued monitoring is essential for long-term renal recovery.

Key words*: BUN, CREA, hemodialysis, canine, ethylene glycol.*

BONE MARROW SAMPLING IN VETERINARY MEDICINE. LITERATURE REVIEW

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Abstract

Bone marrow (BM) evaluation is critical in diagnosing haematological disorders and staging different types of cancer. However, recent studies suggest its role in detecting disseminated tumour cells. This literature review aims to highlight the importance of BM evaluation and aid practitioners in collecting high-quality samples, focusing on domestic carnivores, horses, and laboratory animals, emphasising indications, types of specimens, and sampling techniques. Various indications for BM evaluation include peripheral blood abnormalities, lymphoma staging, myeloproliferative disorders and toxicological analysis. The main types of specimens are BM aspirate and BM core, each requiring a different type of needle. For domestic carnivores, the most accessible sites for collection are the proximal humerus and the iliac crest, while for horses, collection is performed from the sternum. In laboratory animals, BM aspiration is typically performed using the femur, tibia or the iliac crest as the collection site. BM sampling differs between species and can be challenging to obtain in some cases. Choosing the proper sampling technique and corroborating results with clinical and haematology data is important to maximise BM evaluation.

Key words*: bone marrow, collection techniques, domestic carnivores, horse, laboratory animals.*

ATLANTO-AXIAL INSTABILITY IN A YORKSHIRE DOG – CASE REPORT

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Abstract

Atlanto-axial instability is a condition that mainly manifests itself in small dogs, especially those of the toy breed, with a higher prevalence in young individuals. These changes can secondarily cause neurological disorders such as cervical pain and tetraplegia. This study uses advanced imaging techniques to show the difficulty of diagnosing atlanto-axial instability due to multiple causes. The research was conducted on a 1,3-year-old, female, Yorkshire terrier, which presented neurological signs that led to the suspicion of atlanto-axial instability. Radiological examination, CT, and MRI scans were performed, and the diagnosis was confirmed based on developmental/congenital anomalies at the occipito-atlanto-axial level.

Key words*: imaging Diagnosis, atlanto-axial instability, MRI, toy breed, CT scan.*

ANTIMICROBIAL RESISTANCE IN SUBCLINICAL MASTITIS PATHOGENS ISOLATED FROM DAIRY COWS

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Abstract

Antibiotic resistance is a particularly significant topic in the current global context, being widely debated on a nearly daily basis at both scientific and public health levels. Its implications extend across multiple sectors, including human and veterinary medicine, agriculture, and environmental health, highlighting the urgent need for interdisciplinary strategies to address this critical challenge. Our study assessed antibiotic resistance in bacterial strains isolated from milk samples of cows with subclinical mastitis and evaluated the antimicrobial activity of propolis extract. Milk samples from eight cows, identified as subclinical mastitis-positive via the Kerba test, yielded 12 bacterial species, predominantly staphylococci (33%), Bacillus spp. (27%), and Klebsiella pneumoniae (20%). Antibiotic susceptibility testing revealed resistance to methicillin and penicillin (66.66% each), cefquinome (53.33%), and oxytetracycline (20%), with no resistance observed for doxycycline and gentamicin. The highest MAR index (0.55) was found in Bacillus strains, resistant to five of nine antibiotics. Farm biosecurity analysis highlighted deficiencies, particularly in external biosecurity, correlating with higher subclinical mastitis incidence. These findings underscore the importance of integrating antimicrobial resistance surveillance with alternative therapies and improved biosecurity measures to enhance health management.

Key words*: antibiotic resistance, subclinical mastitis, bacterial strains, biosecurity.*

BABESIOSIS AND DIROFILARIASIS - TRIGGERS OR RISK FACTORS FOR CANINE LYMPHOMAS?

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Abstract

Lymphodysplasia is the reversible process by which antigen-stimulated adult B lymphocytes dedifferentiate into peripheral lymphoblasts, then into immunoblasts, plasmablasts and then plasma cells secreting antibodies against the antigen that stimulated them. In lymphoma, malignancy occurs in the intermediate stages of dedifferentiation with monoclonal immunoblastic or plasmablastic proliferation in Plasmacytoma with the secretion of enormous amounts of chimeric antibodies. The pathogenic mechanism consider in this paper consists of prolonged antigen hyperstimulation with parasitic and cell-destructive proteins that cause an accentuated proliferation of undifferentiated adult lymphoblasts at the level of organized lymphoid structures: the spleen for centroblastic lymphoma and the mediastinal, mesenteric, peripheral submandibular, prescapular, superficial inguinal lymphocenters and polyploidy in multicentric lymphoma. In oncology, it is a well-known fact that chronic inflammation is an important risk factor on the scale of carcinogenesis and the Babesiosis and Dirofilariasis parasites determine exacerbated chronic inflammatory reactions, their components and toxic excretions being the antigen in the puzzle. Thus, we ask: canine lymphoma has not been demonstrated to have a clear trigger among the known etiological factors, but should we start looking for proof?

Key words*: canine lymphoma, babesiosis, dirofilariasis, antigen hyperstimulation, inflammatory reaction.*

COORDINATES IN THE PARACLINICAL DIAGNOSIS IN FELINE HYPERTHYROIDISM

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Abstract

Hyperthyroidism represents a total increase in thyroid hormones (T3 and T4) - due to benign (adenomatous) or malignant (hyperplastic) changes. The study included 14 adult and geriatric cats, presented to the practice with suspected hyperthyroidism. Group A included 9 cats diagnosed with hyperthyroidism with clinical signs, age mostly over 10 years (geriatric category). The clinical signs registered were progressive weakness (n=9), tachycardia (n=9), neurological signs (agitation, tremor, excessive vocalization (n=7), or postural modifications n=3). TT4 median values 6.7 µg/dL.Group B included 3 cats with enlarged thyroid, age adult (7 and 8 years). Clinical signs: mild or absent, only thyroid palpation shows moderate enlargement. The specific determination of TT4 registered a within normal limits (but in the upper half on retest in some individuals). Group C was represented by 1 cat with increased TT4, the age 9 years old, and the absence of clinical signs with good general condition, no weight loss or behavioral changes and TT4 above reference limits with 5.5 µg/dL value.

Key words*: cats, diagnosis, hyperthyroidism.*

DIAGNOSIS AND THERAPY OF PODODERMATITIS IN CATTLE OF THE ANGUS BREED

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Abstract

Cattle are one of the most economically important species due to the numerous farming opportunities, including milk and meat production. The farm where the study was followed has a herd of 160 cattle, of which 64 were diagnosed with acropodium pathologies. In our study, 9 animals were recorded with acropodium pathologies, 4 males (48%) and 5 females (52%), suggesting a slight predisposition to pododermatitis in this breed. The type of pododermatitis diagnosed in our study shows an increased incidence of Rusterholz ulcer (n=4), while the remaining pathologies: acute septic pododermatitis, circumscribed septic pododermatitis, interdigital dermatitis, bulbar necrosis, interdigital hyperplasia and bulbar necrosis were identified twice. There is, however, also a diagnosis of heel erosion, a common pathology caused by horn wear in the most stressed area of the hoof. The study shows grade 3 lameness, i.e. the most severe form of the disease, was recorded in only one patient diagnosed with diffuse septic pododermatitis (11.11%), due to the depth of infection at this level, while grade 2 lameness with moderate locomotor discomfort was recorded in 30% of the patients (n=3).

Key words*: pododermatitis, cattle, diagnosis, therapy.*

ANIMAL PRODUCTION, PUBLIC HEALTH AND FOOD QUALITY CONTROL

TRANSGENIC ANIMALS: INNOVATIONS, APPLICATIONS, AND ETHICAL CONSIDERATIONS IN MODERN BIOTECHNOLOGY

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Abstract

Transgenic animals represent a key achievement in modern biotechnology, providing novel solutions in industries such as agriculture, medicine, and environmental studies. Techniques such as microinjection, somatic cell nuclear transfer, and CRISPR/Cas9 gene editing have facilitated the development of transgenic animals by allowing precise genetic modifications. These advancements have led to the development of livestock that not only exhibit improved growth rates and disease resistance but also serve as bioreactors for the production of human proteins and monoclonal antibodies. However, the application of transgenic technology raises significant ethical considerations, particularly regarding animal welfare and ecological impacts. The potential for unintended consequences, such as insertional mutagenesis and epigenetic silencing of transgenes, needs thorough evaluation of the long-term effects on both the transgenic animals and their ecosystems. Furthermore, public perception and regulatory frameworks around genetic engineering must be addressed to ensure responsible development and application of these technologies. This mini-review aims to synthesise current advances in transgenic animal technology, investigate their various applications, and critically evaluate the ethical concerns of their use.

Key words*: Transgenic animals, biotechnology, genetic engineering.*

STRATEGIES FOR MITIGATING METHANE EMISSIONS IN CATTLE: ADVANCING SUSTAINABLE LIVESTOCK PRODUCTION

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Abstract

The increasing recognition of methane emissions as a significant contributor to global warming necessitates urgent strategies for mitigating these emissions in cattle production systems. This minireview synthesizes current research on effective strategies to reduce enteric methane emissions while promoting sustainable livestock practices. Key strategies include improving feed efficiency and management practices, such as using rotational grazing systems, which have been shown to significantly lower methane emissions compared to continuous grazing methods. Furthermore, integrating livestock with crop production systems enhances nutrient recycling and improves overall system sustainability, thereby reducing reliance on external inputs and minimizing environmental impacts. Genetic improvements aimed at enhancing feed efficiency and reducing methane production are also critical, as ruminants are responsible for approximately 80% of livestock-related greenhouse gas emissions. Furthermore, the use of novel feed resources and innovative feeding systems can further contribute to lowering methane emissions while ensuring food security. This review highlights the diverse nature of methane mitigation strategies, emphasizing the need for a comprehensive approach that encompasses management practices, genetic advancements, and integrated agricultural systems to achieve sustainable livestock production.

Key words*: Methane emissions, cattle, livestock, sustainability.*

ANTIBACTERIAL EFFECT OF ESSENTIAL OILS AGAINST FOOD-BORNE MICROORGANISM *ESCHERICHIA COLI, STAPHYLOCOCCUS AUREUS, PSEUDOMONAS AERUGINOSA* AND *CANDIDA ALBICANS*

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Abstract

The growing risk of antibiotic resistance has driven the scientific interest of alternative methods development suitable for treatment of animals and food products. Essential oils have been proven to be effective against various bacteria, yeasts and molds. Their potential use as natural alternatives of preservatives in foods is also consumer demand. The aim of our study was to test the effectiveness of thyme, cinnamon, black pepper, and mint essential oils against type strains of E. coli, Staph. aureus, Pseudomonas aeruginosa and Candida albicans. Antimicrobial activity was determined by measuring the inhibition zones on Mueller Hinton agar, pre-inoculated with bacterial susspension at a concentration of 0.5 McFarland (1.5 x 108 CFU/mL). The essential oils were tested in decimal decreasing concentration after serial dilutions in pure coconut oil from 100% to 10%. All analysis were repeated twice. Results on Pseudomonas aeruginosa showed limited inhibition zones to all of the tested essential oils. E. coli, Staph. aureus, and Candida albicans were inhibited significantly, whereas the cinnamon and thyme essential oils were with highest antimicrobial effect compared to black pepper and mint oils.

Key words*: antimicrobial effect, essential oils, foodborne pathogens, in vitro.*

NATURAL SAVORY, BASIL AND OREGANO ESSENTIAL OILS AS POTENTIAL ANTIMICROBIAL AGENTS TO FOOD BORNE PATHOGENS

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Abstract

Essential oils are used against pathogens due to their proven antimicrobial properties, which inhibit the growth and reproduction of bacteria, fungi, and viruses. They contain bioactive compounds, such as phenols and terpenes, that disrupt the cell membranes of pathogens. The purpose of our study was to test the efficacy of essential oils of savory, basil and oregano against four pathogens - E. coli ATCC 25922, Staph. Aureus ATCC 25923, Pseudomonas aeruginosa ATCC 27853, and Candida albicans ATCC 10231. The evaluation of antimicrobial activity was conducted by analyzing the inhibition zones formed on agar plates pre-inoculated with bacterial cultures standardized to a 0.5 McFarland concentration (1.5 × 10^8 CFU/mL). Essential oils were tested at varying concentrations, prepared through serial dilutions in a coconut oil, ranging from 100% to 10%. Each analysis was conducted twice to ensure accuracy. Savory and oregano essential oils were more effective against these pathogens than basil oil.

Key words*: inhibitory zone, essential oils, antimicrobial agent, food borne pathogens.*

MICROBIOLOGICAL COMMUNITY DURING SHELF LIFE AND SPOILAGE OF BEEF MEET AND PLANT-BASED BURGER IN BULGARIA

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Abstract

The aim of the present study was to compare microbial community during spoilage processes in beef meat and plant-based burger by monitoring the total bacterial count over several days at three different storage temperatures. All key microorganisms isolated during spoilage were identified by MALDI-TOF MS. After six days of storage at 25°C, the bacterial counts for the plant-based and meat burgers were increased from bacis 4.6 to 8.9 log10 CFU/g and from 4.9 to 9.0 log10 CFU/g, respectively. On the tenth day of storage at 12°C, the bacterial counts were enumerated as 7.9 log10 CFU/g for the vegetable burger and 9.0 log10 CFU/g for the meat burger. At the lowest temperature of 6°C on the 10-th day, the total count of microorganisms reached 9.9 log10 CFU/g for vegetable burger and 9.8 log10 CFU/g for meat burger. The identification of 306 isolates showed that the plant-based burger were dominated by lactic acid bacteria of the genera Lactococcus, Leuconostoc, and Lactobacillus, while the beef meat burger contained most often bacteria belonging to Streptococcus, Staphylococcus, Pseudomonas, Carnobacterium, and Lactococcus.

Key words*: plant-based meat alternatives, spoilage bacteria, MALDI-TOF MS, food safety.*

A BRIEF SURVEY REGARDING CONSUMERS´ PERCEPTIONS ABOUT NATURAL JUICES AND SOFT DRINKS

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Abstract

The consumption of juices has increased dramatically over the past few decades, mostly among children and teenagers. The aim of the study was to analyse how consumers perceive natural juices and soft drinks, considering multiple aspects such as the quality of ingredients, nutritional aspects, health impact and personal preferences. For this study, a survey with based on a Google form questionnaire was fulfilled by 279 adults from the general population of Romania. This questionnaire was answered by 232 women and 47 men, 69.5% from urban areas. Out of the 279 people, 249 responded that they used to consume soft drinks, while 30 were not drinking at all. Regarding the type of juices consumed, the opinions were divided almost equally, with 50.5% choosing natural juices, and 49.5% chooses carbonated soft beverages. Also, 71.7% of people noticed changes in their consumption of these beverages, with 156 people being influenced by the health impact and 44 due to the price. For most people, the health effects, price and taste of a drink are important and are less affected by packaging or advertising.

Key words*: consumers, perceptions, natural juices, soft drinks.*

TREND OF ANTIBIOTIC RESISTANCE IN *STAPHYLOCOCCUS CHROMOGENES* ISOLATED FROM RAW MILK SAMPLES OF DAIRY COWS IN ROMANIA BETWEEN 2017 AND 2023

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Abstract

Staphylococcus chromogenes (St. chromogenes) continues to be one of the primary causative agents of mastitis in dairy cattle. This retrospective study aimed to present the trends of antimicrobial resistance in St. chromogenes isolated from raw milk samples of dairy cows with subclinical and clinical mastitis over a seven-year period. From January 2017 to December 2023, a total of 79 St. chromogenes isolates were evaluated for antimicrobial resistance against 22 antibiotics. The current study revealed a significant increase in resistance to various antimicrobial agents. For example, amoxicillin resistance increased from 23.33% to 50.00%, marbofloxacin from 12.50% to 25.00%, doxycycline from 13.33% to 75.00%, oxytetracycline from 13.33% to 50.00%, and streptomycin from 16.67% to 50.00%. The increasing trend of antimicrobial resistance underscores the need for robust infection control strategies and judicious antibiotic use in dairy farms. To summarise, this study can serve as an essential resource for evaluating treatment protocols and mitigating the further spread of resistance.

Key words*: cow, mastitis, trends, drug resistance, Romania.*

MONITORING OF VETERINARY DRUG RESIDUES IN ANIMAL-DERIVED FOODS

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Abstract

The presence of veterinary drug residues in food raises significant public health concerns. Exposure to these residues, especially at high levels, can lead to adverse health effects for consumers, including allergic reactions, antibiotic resistance and other toxicological risks. The indiscriminate use of drugs in animal husbandry to promote growth or prevent disease leads to the accumulation of residues in animal tissues and products. The residue analysis methods were liquid chromatography and gas chromatography suitable for the detection of trace levels of drug residues including antibiotics, hormones, anti-inflammatory substances etc. Animal origin samples were 1605, out of which 209 were beef, 453 pig, 61 sheep and goat, 11 horse meat, 700 poultry, 68 milk, 82 egg, 1 rabbit, 2 farmed game and 18 fish samples. The detected antibiotics were penicillins, tetracyclines, sulfonamides, aminoglycosides and cephalosporinsin, in the following proportions depending on the type of sample: beef (13%), pigs (28%), sheep/goats (4%), horses (1%), poultry (44%), milk (4%), eggs (5%) and fish (1%). The most prevalent residues were those of tetracyclines in poultry meat, they were found in 64% of the analyzed samples.

Key words*: monitoring, residues, veterinary drugs, food.*

THE INFLUENCE OF THE PHYSICOCHEMICAL QUALITY OF SOME ASSORTMENTS OF TRADITIONAL CHEESES FROM DÂMBOVIȚA COUNTY DURING A YEAR

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Abstract

The physicochemical quality of traditional cheeses depends on the properties of the raw milk. Key parameters analysed include fat percentage, moisture, and dry matter. This study assesses these parameters in traditional cheeses from Dâmbovița County and tracks their evolution throughout the year. The analysed varieties telemea cheese, burduf cheese, and urda show variations, with fat percentage increasing over time. In cow`s milk telemea cheese, fat rose from 47.43% (June) to 51.87% (November), while in burduf cheese, it increased from 41.28% (January) to 54.10% (November). Sheep`s milk telemea cheese (61.02%) and sheep urda (84.41%) had the highest fat values, influenced by milk origin. Moisture and dry matter fluctuated, with alternating rising and falling trends. Fat percentage was the most influenced by seasonal factors, primarily due to the animal's physiological stage: early lactation, peak production, gestation onset, and late lactation. The findings highlight significant seasonal variations in cheese composition, underlining the importance of monitoring these parameters to ensure product quality.

Key words*: burduf cheese, telemea cheese, physicochemical quality, urda.*

BACTERIAL AGENTS INVOLVED IN POULTRY MEAT CONTAMINATION: PATHOGEN DIVERSITY, TRANSMISSION ROUTES AND FOOD SAFETY IMPLICATIONS

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Abstract

Poultry meat is an important source of protein and very commonly consumed by the population globally. The bacterial agents involved in its contamination, and which pose a risk to public health, leading to serious diseases that can be transmitted through food, are represented by: Salmonella, Campylobacter, Escherichia coli and Listeria monocytogenes. This study will present the transmission routes of these pathogens, the determinants of their persistence focusing on cross-contamination, poor hygiene of workspaces and environmental factors such as deviations of humidity and temperature. This article explores various strategies to reduce bacterial contamination in poultry, focusing on improving hygiene protocols, refining processing techniques, and enforcing stricter food safety standards. These actions are essential for safeguarding poultry meat and minimizing the public health risks posed by bacterial pathogens in the poultry industry.

Key words*: bacterial contaminants, food safety, poultry meat.*

ANTIMICROBIAL EFFECT OF NISIN IN DRY FERMENTED SAUSAGES

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Abstract

Dry fermented sausages represent one of the most popular types of meat products ready-to-eat and the control of potential microbiological hazards during the manufacturing process represents a major objective of food safety. The purpose of study is to assess the antimicrobial effect of nisin, as natural preservative, in dry fermented sausages artificial inoculated, during the ripening stage. Nisin was added during the manufacturing stage in raw meat recipe in the experimental batches. The antimicrobial effect of nisin was evaluate, in the fermentation-smoking and ripening-drying stages. The results obtained highlight the utility of nisin as natural preservative with antimicrobial activity in dried fermented meat products. Furthermore, this is a measure to prevent human listeriosis due to the consumption of potentially contaminated food or food that allows Listeria to multiply during its shelf-life.

Key words*: nisin, dry fermented sausages, antimicrobial effect.*

STUDY ON THE EFFECTS OF NATURAL ANTIOXIDANTS ADDED TO FOOD OF ANIMAL ORIGIN: PROPERTIES AND HEALTH BENEFITS

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Abstract

Natural antioxidants added to products of animal origin are substances that help slow down the oxidation process, thereby protecting food from spoilage and prolonging its shelf life. They are commonly used in the food industry to maintain product quality and safety. The most widely used natural antioxidants are vitamins C and E, selenium, polyphenols, omega-3 fatty acids, and carotenoids. Vitamin C (ascorbic acid) plays a role in the bioavailability of iron in the body and supports immune function, along with the beta-carotenoids: lutein and zeaxanthin (precursors of vitamin A). Beta-carotenoids are also implicated in ocular function. Vitamin E (tocopherol) reduces both lipid oxidative processes and the incidence of cardiovascular disease. Polyphenols reduce oxidative stress, as do omega-3 fatty acids. The incorporation of these antioxidants in animal products not only enhances their stability but also offers significant health benefits by reducing oxidative stress and promoting overall wellness.

Key words*: health benefits, natural antioxidants, products of animal origin, oxidation process, vitamins.*

VETERINARY EDUCATION

PROFESSIONALISM COMPETENCIES IN VETERINARY MEDICINE: A NECESSITY FOR THE FUTURE

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Abstract

The rapid evolution of veterinary medicine and the implementation of the 2023 Standard Operating Procedures (SOP) by EAEVE highlight the importance of integrating professionalism competencies into the education of future veterinarians. These competencies - effective communication, professional ethics, teamwork, and critical thinking - complement technical knowledge and are essential for delivering excellent veterinary education. Professionalism competencies are mandatory as part of the Day One Competences required of veterinarians, ensuring they are prepared to meet professional standards from the very beginning of their careers. They foster adaptable and resilient professionals capable of addressing complex challenges, promoting interdisciplinary collaboration, and adhering to the highest ethical standards. Furthermore, they enhance the quality of veterinary services and strengthen public trust while supporting holistic medical care. To meet the EAEVE 2023 standards, aligning the veterinary curriculum with these competencies is crucial. Investing in their development ensures a sustainable future for veterinary medicine, animal welfare, and the profession's long-term relevance. Continuous improvement of these skills throughout one's career is a professional and social responsibility, ensuring veterinarians remain competitive and effective in a dynamic field.

Key words*: professional competencies, communication, ethical practice, team-working, personal well-being.*

A SURVEY-BASED EVALUATION OF THE IMPACT OF VARIOUS TEACHING METHODS ON DAY-ONE COMPETENCIES IN VETERINARY ANAESTHESIA

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Abstract

For veterinary medicine, day one competencies such as performing first aid in emergencies and safely administering general anaesthesia demand both theoretical understanding and practical expertise. Endotracheal intubation has been identified as a challenging clinical skill for students. This study aimed to assess veterinary students` confidence levels in performing endotracheal intubation in anaesthesia, document their previous experiences with the procedure, and describe their emotional states during the training. Students completed a survey evaluating the usefulness of high-fidelity models and cadavers in acquiring intubation skills. The training curriculum progressed from lectures and non-animal practice to hands-on work with high-fidelity models and cadavers, culminating in performing anaesthesia on dogs and cats in a university clinic. The feedback related to the necessary practical teaching training is crucial for tailoring the teaching process to ensure students develop the required competence before progressing to the next stage of training on live animals.

Key words*: competencies, anaesthesia, intubation, students.*

DO WE HAVE THE SKILLS TO MANAGE ANIMAL ABUSE CASES?

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Abstract

Animal rights and welfare have been subjects of interest for European countries since 1987 when The European Convention for the Protection of Pet Animals was signed, a treaty of the Council of Europe that became effective on May 1, 1992. In Romania, Law n. 205/2004 protects animal rights and welfare. This study analyses how veterinarians manage animal abuse or suspicion cases, including animal neglect suspicions. From our findings, we mention that 72.4% of the vets said that their practice does not have a procedure for instances where abuse is suspected, and 18.4% do not know where to report such cases. Animal neglect was identified as the most common form of animal cruelty by 31.6% of the vets, followed by physical abuse by 25%. Although 47.4% of the vets had between 1 and 5 abuse suspicion cases and 10.5% suspected abuse in 5 between 10 cases, 77.6% of the vets have never filed an abuse report. Most respondents, 77.3%, consider needing more training in this field.

Key words*: animal abuse, neglect, veterinarian skills.*

DEVELOPING AND EVALUATING A DIGITAL PATHOLOGY PLATFORM FOR VETERINARY STUDENTS

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Abstract

This study investigates the development and implementation of a digital pathology platform designed to enhance veterinary students` learning experience. Traditional veterinary pathology laboratories often involve limited access to physical microscope slides, requiring students to work in groups and share viewing time. This can hinder individual learning and limit the depth of knowledge acquisition. This platform addresses these challenges by providing students with on-demand access to a comprehensive library of high-resolution digital pathology slides. This allows for individualized and enhanced learning through improved accessibility. The paper also describes some challenges which were overcome during the digitization process. The platform`s impact on student learning outcomes, including knowledge retention, exam performance, and overall satisfaction, is evaluated through a mixed-methods approach. Preliminary findings suggest that the digital platform significantly improves student engagement, enhances learning outcomes, and provides a valuable resource for both in-class and independent study.

Key words*: digital pathology, veterinary learning, whole slide images, digital microscope slide.*

ANALYSIS OF THE PERCEPTION OF INTERDISCIPLINARITY IN RESEARCH AND EDUCATION IN RELATION TO THE CURRENT TREND OF SUSTAINABILITY

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Abstract

Nowadays, it is extremely important to take into account the needs of the digital age, which has completely absorbed not only young people and students and is among the priority information channels for absorbing information. In order to engage students and attract their greater attention to the study itself but also to research, it is necessary for the pedagogical process to be based on their needs and the needs of practice. In connection with the constantly increasing need for interdisciplinarity, a survey was created focused on the perception of interdisciplinarity understood by students in connection with education and research. Analysis of the findings resulting from the survey will help to understand students` priorities and their understanding of interdisciplinarity.

Key words*: education, interdisciplinarity, research, students, sustainability.*

EXPERIMENTAL MEDICINE

PATHOLOGICAL AND MOLECULAR INSIGHTS OF ANIMAL MELANOMA CELL CULTURES – A COMPREHENSIVE REVIEW

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Abstract

Melanoma is a particular neoplasm arising from the unregulated proliferation of melanocytes. It affects both humans and different animal species that develop this tumor spontaneously, including canines, equines, and rarely felines. Understanding melanoma`s pathology and molecular biology can be enhanced by studying both two-dimensional and three-dimensional melanoma cell cultures from various species, some animals (e.g. dogs) sharing multiple physiopathological mechanisms with human melanoma. Moreover, established mouse melanoma cell lines from genetically modified models are commonly used for molecular characterization and utility in therapeutic testing, while noting limitations posed by genetic differences. Recent studies regarding isolation protocols for cultivating neoplastic melanocyte cultures show a significant variation including fine-needle aspiration, tissue excision, and enzymatic digestion. Hence, comparative genetic analyses indicate similarities between animal and human melanoma cells, especially regarding mutations in the BRAF and NRAS oncogenes. This review highlights the relevance of melanoma cell cultures across species as significant in vitro models for advanced cross-species melanoma research, enhancing insights into neoplastic initiation and progression and ultimately contributing to improved diagnostic and therapeutic approaches in veterinary and human pathology and oncology.

Key words*: melanoma, melanocytes, cell cultures, oncogenes, animal models.*

MISCELLANEOUS

RESEARCH ON CERTAIN INSURANCES WITH APPLICABILITY IN THE FIELDS OF VETERINARY MEDICINE AND AGRICULTURE

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Abstract

The paper presents a review of several types of insurance applicable to general fields but also specifically for veterinary medicine and agriculture. The insurance represents a classic form of risk transfer from the insured to specialized companies, called insurers. At the same time, some mathematical calculation formulas for life insurance, single premium and retirement insurance are presented. At the same time, some mathematical calculation formulas for life insurance, single premium and retirement insurance are presented. Also, there are included insurances for agriculture and dangerous dogs. Finally, two reports issued by FAS for the years 2023, 2022 are presented regarding the subscriptions related to optional home insurance, respectively the number of contracts in force.

Key words*: insurances, veterinary medicine, agriculture, life, diseases.*

A REVIEW OF THE CURRENT KNOWLEDGE ON AMPHIBIAN CHYTRIDIOMYCOSES AND THEIR EPIDEMIOLOGY IN EASTERN EUROPE

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Abstract

Amphibian chytridiomycoses are emerging fungal diseases caused by Batrachochytrium dendrobatidis (Bd) and Batrachochytrium salamandrivorans (Bsal). They pose a significant threat to amphibians worldwide, driving catastrophic species declines and extinctions with knock-on impacts on the ecosystem and human health. This review examines the expanding distribution of Bd and Bsal, with a focus on Eastern Europe. Advances in diagnostics - including histopathology, PCR, and environmental DNA detection -, including their strengths and limitations, are discussed. This review considers morphological characteristics, pathogen life cycles, mechanisms of pathogenesis, and clinical signs useful for guiding infection and disease detection. Innate and acquired host immune responses in response to Bd and Bsal infection are discussed within the context of host resistance and tolerance. Finally, potential transmission routes are explored, with a focus on the role the pet trade plays in pathogen spread, and current treatment and mitigation approaches for both wild and captive amphibians are summarised. Insights into the epidemiology of Bd and Bsal and environmental factors influencing pathogen spread and resistance can inform proactive conservation and disease management strategies essential for protecting at-risk amphibian populations.

Key words*: Chytridiomycoses, Batrachochytrium dendrobatidis, Batrachochytrium salamandrivorans, amphibians, epidemiology, Eastern Europe.*

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