

## **ESTRUS SYNCHRONISATION AND ARTIFICIAL INSEMINATION IN LACAUNE SHEEP**

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### **Summary**

The purpose of this research was to perform estrus synchronization and artificial insemination in sheep during the breeding season with progesterone (Chronogest, Maravet) and PMSG (Folligon, Maravet). The study was carried out during September 2018 - February 2019. The hormonal protocol was applied on 125 animals. After treatment ewes were artificial inseminated by intracervical method. The diagnostic of gestation was performed at 45 days after the artificial insemination using an ultrasound. The rate of fertilization, the prolificacy and the specificity of the ultrasound diagnosis were established after parturition.

**Keywords:** ewes, fertility, prolificacy, synchronization

## **PREVALENCE OF CLAW DISORDERS IN DAIRY FARMS WITH TIE STALLS**

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### **Summary**

In intensive rearing conditions, dairy cows are exposed to many factors that can cause health disorders and significant economic losses. Today, claw diseases are the main problem in high-milk cow's herd, along with metabolic diseases, mastitis and reproduction disorders. Claw diseases can have direct effects on reproductive parameters. The aim of our research was to determine the frequency of certain diseases of the locomotor apparatus of dairy cows on farms with tie stall system. In the period of two years, a total of 37,893 cows were examined, wherein the following has been found: Laminitis in 34,217 cows (90.30%), Dermatitis interdigitalis in 25,876 cows (68.29%), Dermatitis digitalis in 11,817 cows (31.18%), Rusterholz ulcer in 8,272 cows (21.83%), Fibroma in 3063 cows (8.08%), and Panaritium in 618 cows (1.63%). The results show that laminitis dominates in the herds. Considering the etiology of diseases determined at the farms it is primarily to focus on preventing the formation of metabolic disorders and adequate nutrition of the animals, and then on the improvement of housing conditions and the regular implementation of measures to prevent the spread of infectious claw diseases.

**Keywords:** dairy cows, claw diseases, tie-stall system

**HISTOLOGICAL CHANGES IN RAT KIDNEYS AFTER *LYCIUM BARBARUM* AND *RUMEX CRISPUS* AQUEOUS EXTRACTS ADMINISTRATION IN ALLOXAN-INDUCED DIABETES**

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**Summary**

Currently, the prevalence of diabetes mellitus, as a metabolic disorder, either type I or type II, is steadily increasing, affecting both human and pets alike. Even if diabetes has as its starting point the pancreas, it will sooner or later affect other organs, injuries known as complications of this disease. The aim of this experiment was to highlight the histological changes in kidneys after seven weeks of *Lycium barbaricum* and *Rumex crispus* aqueous extracts consumption in rats with diabetes induced through intravenous administration of alloxan. The plants taken in study are known to have hypoglycemic effects. The aqueous extract of *Rumex crispus* can not compensate alone the renal structural changes induced by diabetes but the *Lycium barbarum* extract can be used as a protector, the reparatory effects being obvious.

**Keywords:** diabetes, kidneys, plants, histological changes

## **A PROCEDURE FOR IDENTIFYING GENETICALLY MODIFIED ORGANISMS FROM FEED IN COW'S MILK**

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### **Summary**

In cow's milk there are fragments of the animal DNA (which passes into the secretion product together with the somatic cells), as well as fragments of plant DNA (taken from the fodder into the blood and then into the mammary gland from where it passes into milk). This paper presents an experiment attempting to develop an exogenous DNA that is found in milk samples analysis procedure, with the goal of identifying genetically modified organisms that can be introduced into farm animal feed. Milk samples were collected from the commerce but also from cows farms. The experiment began by filtering milk samples and continued with DNA purification. The DNA obtained was analyzed by PCR based methods, which involved the amplification of the genes of interest. PCR products were analyzed by migration to agarose gel, the presence of a specific product allowing qualitative assessment of the results.

**Keywords:** milk, exogenous DNA, PCR analysis, genetically modified organisms

**IMMUNOLOGICAL ASPECTS ON THE ACTIVITY OF  
IMMUNOBIOLOGICAL INDICATORS AT BOVINES SOME  
PHYSIOLOGICAL GROUPS**

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**Summary**

The scientific investigations reflected in this study presents the dynamic study of some immunobiological blood-type indices characteristic to immunobiological status at bovines some physiological groups during the gestation and postpartum periods. There are presented aspects of immunological indicators, regarding the importance of installing cellular and humoral immunity. Important data presents the values of leukocytes, erythrocytes, lymphocytes and T and B indices of immunocompetent cells at different stages of research. The initiation of these researches revealed some increases of their level, both at pregnant and postpartum bovines, in particular the concentration of T and B lymphocytes, which justifies the importance of cellular and humoral resistance specific to the animal organism in different physiological states.

**Keywords:** Lymphocytes, pregnant bovines, postpartum bovines, T cells, B cells

## **DNA QUALITY AND QUANTITY DETERMINATION - IMPORTANCE FOR BIOCHEMICAL PRACTICAL APPLICATION**

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### **Summary**

Molecular methods of laboratory analysis are increasingly based on the use of nucleic acids. These methods find their practical applicability in an increasingly extensive area of laboratory analysis. The success of each analysis starts from the isolation and purification of nucleic acids. A non-compliant sample in this case may lead to the total failure of the biochemical analysis that are to be carried out subsequently. Therefore, a number of methods have been developed and applied, in which the quality and quantity of DNA extracted from different matrices can be evaluated. The present paper presents two of these methods that can be used individually but gives the best information when used together: agarose gel electrophoresis and spectrophotometric analysis of total genomic DNA molecules. DNA was extracted from different matrices using the same method and then analyzed by the two methods. The obtained data were separately interpreted and after a parallel between those methods is presented.

**Keywords:** DNA quality and quantity, spectrophotometry, gel electrophoresis, molecular data assessment

## **CORRELATION BETWEEN CLINICAL SIGNS AND RADIOLOGICAL IMAGING IN PLEURO-PULMONAR AFFECTION IN DOGS**

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### **Summary**

The aim of the paper was to make a correlation between clinical signs and the aspect of thoracic cavity on the radiographic or CT imaging. The study was conducted on a number of 67 dogs of different age and sex, that were examined for thoracic pathology in the Faculty of Veterinary Medicine Cluj Napoca clinic. The patients were clinically examined and medical imaging procedures were performed in order to establish a diagnostic. From the total of 67 cases, 14% (N=9) were diagnosed with pneumothorax, 18% (N=12) presented liquidothorax, 31% (N=21) were diagnosed with inflammatory pathology of the lungs, 9% (N=6) present pneumonia ab ingestis, 7% (N=5) were diagnosed with pleural pathology and 21% (N=14) diagnosed with tumoral pathology. At the same time, we intend to identify the recommendations and limits of the radiological (radiography and Computed Tomography) examination in these conditions in dogs.

**Keywords:** thorax imaging, thorax pathology, lung imaging, dog

## **MULTIBACTERIAL INFECTION IN RED SQUIRREL (*SCIURUS VULGARIS*) YOUNGSTERS: A CASE REPORT**

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### **Summary**

The objective of the study was to describe the results of both clinical and laboratory investigation performed for two clinical cases involving red squirrels (*Sciurus vulgaris*). The animals, male and female, aged approximately one month, were rescued on a university campus, in September, 2018. The youngsters showed no signs of disease for one week, when clinical examination revealed loss of appetite and weight, loose and watery feces, the presence of crusty nodules disseminated on the entire body, hair loss, edema of the ears, pads, anus, penis and vulva, respectively. Further in the course of the disease, necrosis enveloped the ear margins and haemorrhagic lesions appeared on the pads, anus and ears. Squirrelpox, a lethal viral disease, was suspected based on the clinical signs and lesional aspects. Both animals recovered after several days of supportive and symptomatic therapy. Laboratory evaluation also included microbiology and dermatology methods (selective media, biochemical properties evaluation, *in vitro* antimicrobial susceptibility testing) aimed to isolate and identify the associated dermatophytes and bacterial flora.

A diverse and complex skin flora was recovered from the skin lesions, with strains belonging to six genera and displaying distinct antimicrobial resistance patterns. To our knowledge, this is the first description of a mixt infection *in Sciurus vulgaris*.

**Keywords:** *Sciurus vulgaris*, necrotic lesions, associated bacterial flora, antimicrobial resistance

**MORPHOPATHOLOGICAL SIGNALING OF PNEUMONIA  
CAUSED BY BOVINE RESPIRATORY SYNCYTIAL VIRUS IN  
CALVES FROM TIMIS COUNTY**

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**Summary**

The research was conducted in the period February 2017-June 2018, by performing necropsies on 10 calf corpses, aged 4-15 months, both male and female, of various breeds (mainly Romanian Black Spotted breed). The animals came from 2 farms (one is a collecting center farm from Grabat) and from households in Timis county, from owners, who solicited necropsies at the Forensics and Necropsy Diagnosis Department of the Faculty of Veterinary Medicine in Timisoara, in order to clarify the cause of death. Upon necropsy, the animals showed characteristic signs of lobular catarrhal pneumonia. Samples (tissue fragments of 2/1.5 cm) were collected, following detailed macroscopic examination of the organs, from the: lungs, heart, kidneys, liver, tracheobronchial lymph nodes and spleen, for microscopic exams. The pathological morphology picture of the cases subjected to morphopathological exams that certify the diagnosis of Pneumonia caused by bovine respiratory syncytial virus are expressed by: serohemorrhagic and fibrinohemorrhagic bronchitis and tracheitis, lymphohistiocytic bronchopneumonia, obstructive necrotizing, hyperplastic, polyp-like and syncytial bronchiolitis, desquamating, syncytial alveolitis, interstitial and alveolar emphysema with a tendency of extension in the entire pulmonary parenchyma (panlobular emphysema) and pulmonary atelectasis. The circulatory, dystrophic, and inflammatory cardiac, hepatic, splenic, renal and lymphonodular lesions are non-specific.

**Keywords:** pneumonia, respiratory syncytial virus, calves

**EFFICACY ASSESSMENT OF THE AGAVAC VACCINE  
DESTINED FOR CONTAGIOUS AGALACTIA PROPHYLAXIS IN  
SMALL RUMINANTS, ON GUINEA PIG  
SHORT COMMUNICATION**

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**Summary**

In the aim of establishing an alternative model for efficacy assessment of the Agavac vaccine destined for the prophylaxis of contagious agalactia in small ruminants, the vaccine immunogenicity and the colonization ability of *Mycoplasma agalactiae* AG6 strain (Mag AG6) were tested on guinea pigs (common race, 300-450g). Guinea pigs, in groups of 3 animals, both females (pregnant or lactating), as well as males, were immunized with Agavac commercial series, by s.c. administration of two doses of 0.5 ml, at 21 days interval. At 4.5 months after the booster, the Mag AG6 strain, was administered in concentration of 0.8 mg/ml protein in the control animals (0.2 ml, by ocular instillation) or of 4.5 mg/ml protein in vaccinated animals (0.2 ml, by ocular or nasal instillation, or 1 ml, intramammary). Antibodies titers were evaluated by an *in house* made ELISA kit, and the presence of the Mag AG6 strain in the organism of the guinea pigs was detected by a rPCR test, based on the p40 gene, applied to samples/fingerprints of organ, milk and ocular and nasal secretions. The values of antibody levels, expressed in EU, during the experiments, recorded statistically significant differences ( $p < 0.05$ ) between vaccinated and unvaccinated animals at all the testing moments. The strain Mag AG6, administered in vaccinated animals in concentration of 5.25 times higher than the dose administered to unvaccinated animals, was present at the inoculation site for up to 72 hours (in the case of the ocular or nasal instillation), as opposed to unvaccinated animals, in which it persisted until slaughter (13-14 days p. i). Our results proved that the assessment of the effectiveness of the Agavac vaccine can also be carried out on laboratory animals (guinea pigs).

**Keywords:** *Mycoplasma agalactiae* AG6, vaccine efficacy, rPCR, ELISA, guinea pig

**HISTOLOGY ASPECTS ON KIDNEY AFTER *SILYBUM MARIANUM L.* AND *HIPPOPHAE RHAMNOIDES L.* ADMINISTRATION IN RATS WITH ALLOXAN INDUCED DIABETES**

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**Summary**

The growing number of patients with diabetes mellitus has concluded that prophylaxis is the only way to avoid and stop the spread of the disease as well as its complications. Many animal species are affected by this disease, cats and dogs being the species with the highest incidence. In this idea the aim of the research was to highlight the effects of aqueous extracts of *Silybum marianum* and *Hippophae rhamnoides* on the kidney in rats with induced diabetes by intravenous administration of alloxan. Following the histological study of the kidney, it was concluded that the two plant extracts may be recommended as renal protectors and only as a palliative and / or preventive medication for diabetes.

**Keywords:** kidney, histology, diabetes, alloxan

## **ELECTROCARDIOGRAPHIC AND ECHOCARDIOGRAPHIC INVESTIGATIONS IN CARDIAC HYPERTROPHY IN CATS, CONSEQUENCE OF HYPERTHYROIDISM**

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### **Summary**

Electrocardiographic and echocardiographic investigations were performed in the Functional and Metabolic Exploration Laboratory (CLHC), the Medical Pathology Clinic of the Veterinary Faculty of Timisoara and a private veterinary clinic. Cats of different breeds (European, Persian, Main-Coon), females and males, aged 6.5-7 years and 3.5-5.5 kg body weight, were diagnosed with hyperthyroidism, which can lead to hypertrophic and/or restrictive cardiomyopathy. Electrocardiographies were performed with the Contec Electrocardiograph, model 300 GA, with 12 derivations, thermal printer and 80 mm ECG paper, and the parameters used were 25mm/sec and 10mm = 1mv. The echographic investigations in B, M, Color Doppler and Spectral Doppler mode were performed with a MyLab 70 VET XVG stationary ultrasound and two portable untrasounds, one Vivid I General Electric, and the other, the Mindraz 2200 VET. Electrocardiography revealed aspects of sinus tachycardia, hypertrophic cardiomegaly by excessive amplitude increase of the atrioventricular complexes, with the possibility of adaptive disorders, considering the increased frequency and terminal phase changes, the T wave signifies repolarization disorders (increase of the passive filling period). Also, the presence of an increased amplitude wave, with supraventricular origin (nodal extra systole), without pathological connotation, was found in all derivations. Two-dimensional cardiac ultrasound (Module B), in the right parasternal section, with two chambers, in transversal section revealed a left atrium/aortic ratio of 0.92, which physiologically should be higher, the interventricular septum in diastole (IVSED) measuring 0,45 cm and in systole (IVSES) 0.82 cm, left ventricular wall free (LVW), hypertrophic interventricular septum (IVS), aortic stenosis aspect. In the M mode, there is an increased compliance between the interventricular septum and the left ventricular wall, which leads to incipient phase cardiac hypertrophy, reducing the left ventricular cavity. By color Doppler ultrasound, a turbulent transmitral flow was observed, and the spectral module revealed a normal left ventricular diastolic image, a slightly restrictive isovolumetric relaxation time, and the ratio between rapid ventricular filling and atrial systole was increased. Blood biochemistry revealed high T4 values ranging from 4.2-5.2 ng/dl, and low TSH values, between 0.012 - 0.032, in all cases.

**Keywords:** echography, electrocardiography, cat, cardiac hypertrophy, hyperthyroidism

## **A THREE YEAR RETROSPECTIVE STUDY OF CANINE PARVOVIROSIS IN CLUJ COUNTY**

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### **Summary**

Canine parvoviral disease is regarded worldwide as one of the most important infectious diseases encountered in dogs due to the severity of clinical signs and the lethal course. This study was aimed to investigate the epidemiological characteristics of CPV infection affecting dogs from Cluj County during a 3 years period (from December 2016 to February 2019). A total number of 144 clinical cases were included in this study, both females and males, from different breeds and ages. The protocol included clinical and hematological evaluation of the suspect animal, while the confirmatory diagnosis was based on the positive result of commercial snap tests. Data collected using questionnaires (history, age, breed, possible exposure, vaccination status) and medical forms filled for each case were statistically analyzed. The retrospective analysis indicated an increasing number of cases during the studied period of time and severe course of the disease for the great majority of the cases. Compared to literature, our results indicated that both the non-vaccinated and vaccinated dogs were at risk to develop the disease. Similar to other studies, the age was determined as a risk factor. The study underlines the importance of both vaccination and disinfection in order to reduce the animals exposure and environment contamination.

**Keywords:** parvovirus, dogs, epidemiology, risk factors

## **COMPONENT SPECIES IDENTIFICATION FROM DIFFERENT DAIRY PRODUCTS**

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### **Summary**

In the last decades, DNA techniques started to be used for component species identification in food and feed of animal origin. These techniques present the advantage of the high sensitivity and also specificity of (PCR)-based on methods to detect very low amounts of DNA from undeclared material that may be fraudulent added in even dairy products. More often the adulteration of dairy product is made by adding cow milk in products prepared from the milk of other ruminant species. This paper work describes a study of detecting the component species from different milk products. Samples were collected from the local market and the composition was unknown. DNA was extracted and purified starting from low amount of sample and it was subjected to PCR analysis with primers specific to cow, buffalo, goat and sheep.

**Keywords:** ruminants, species identification, PCR based method, dairy products