

BRONCHPNEUMONIA AS A HEALTH PROBLEM ON PIG FARMS (RESEARCH REVIEW)

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Summary

Bronchopneumonia is one of the most important respiratory diseases in pigs in intensive breeding. Bronchopneumonia rarely occurs and passes as a monoinfection, and therefore mixed infections are the most common finding. Isolated microorganisms include, for example, Porcine reproductive and respiratory syndrome virus (PRRSV), Porcine circovirus type 2 (PCV-2), *Mycoplasma hyopneumoniae*, Influenza virus, *Actinobacillus pleuropneumoniae*, *Pasteurella multocida*, *Bordetella bronchiseptica*. Of particular importance in the development of bronchopneumonia in pigs are non-specific factors, such as transport, low temperature, inadequate nutrition, environmental conditions in the boxes, overcrowding and other stressors. Pulmonary pasteurellosis is the result of a lung infection with the bacterium *Pasteurella multocida*. It most often occurs as the last stage of enzootic pneumonia or a complex of respiratory diseases in pigs. The complex of respiratory diseases is one of the most common and economically most expensive diseases of pigs, especially if the pigs come from commercial farms. Pulmonary pasteurellosis is present in different housing conditions of pigs. *P. multocida* as a frequent resident of the nasal flora of pigs is difficult to eradicate since it can interact with many other pathogens. The aim of our study was to examine the antimicrobial susceptibility of bacterial isolates originating from pigs in intensive production.

Keywords: antimicrobial susceptibility, bronchopneumonia, pigs.

RESEARCH ON RESISTANCE PHENOTYPES OF STAPHYLOCOCCAL STRAINS ISOLATED FROM PETS AND THEIR OWNERS

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Summary

In staphylococcal strains, antibiotic resistance is widespread and the multiple resistant strains are isolated from both, animals and humans, due to the epidemiological circuit of animal-human-animal. Methicillin-resistant staphylococcal strains are extremely important, as resistance to this antibiotic is correlated with multiple resistance to several or all of the used antibiotics. This research aimed to identify the staphylococcal species isolated from pets and their owners, as well as to establish the frequency of their resistance phenotypes. Thus, 45 samples were taken from clinically healthy pets (dogs n = 20, and cats n = 5) that live in close contact with their owners (n = 20). With the Vitek 2 Compact equipment, the isolated strains were identified and included in nine species of *Staphylococcus* genus (2 coagulase positive species and 7 coagulase negative species). The isolates from pets and owners that presented a certain resistance pattern to the used antibiotics had similar frequency of resistance phenotypes, therefore suggesting the possibility of transmitting the resistant strains from animals to humans, and vice versa. However, to confirm the transmission of this resistance, molecular biology techniques are mandatory, to identify the resistance genes and their transcription.

Keywords: owners, pets, resistance phenotypes, staphylococcal strains.

PRELIMINARY RESEARCH REGARDING THE PREVALENCE OF CATTLE NEOSPOROSIS IN CARAȘ-SEVERIN COUNTY

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Summary

Because neosporosis is less studied in Romania and it implies severe economic losses and because of the difficulties in establishing the diagnosis of infection with *Neospora caninum* in farms we proposed to perform a serological screening in cows in Caraș-Severin County to determine the prevalence of this protozoan. During the period June 2020 – April 2021, 110 blood samples from bovines reared in the household system were collected. After expression of the serum, it was collected in Eppendorf tubes, labelled and frozen at -18°C until ELISA processing to highlight the infection with *N. caninum*. The ID Screen® *Neospora caninum* Indirect kit from ID Vet France was used. Out of the total of the 110 investigated samples only 15 were positive, which represents 13.51% of the samples corresponding to Caraș-Severin County. The serologically examined cattle came from 19 localities, most of them being located in the Almăj area. Of the 19 localities investigated, just over 50% were positive.

Keywords: neosporosis, cattle, Caraș-Severin County, ELISA.

**DETERMINATION OF METHOTREXATE PHARMACOKINETICS
BY SCINTIGRAPHIC MONITORING OF 2,4 DIAMINO 6-
PERTECHNETATE BIODISTRIBUTION**

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Summary

The use of methotrexate (MTX) as a photosensitizer in combination with optical irradiation of solid malignancies initially requires determination of the intratumoral retention time of the cytotoxic agent, at the time of administration. This can be done with the help of sequential scintigraphy and, implicitly, involves the radioactive marking of MTX with the ^{99m}Tc isotope. Radioactive chromatography (RC) and UV-VIS absorption spectroscopy confirm the possibility of synthesizing a radiopharmaceutical (2,4-diamino 6-pertechnetate pterin) that follows the MTX biodistribution. In addition, from the first experimental data performed on animals (Wistar rats with Walker 256 solid tumors), it indicates a therapeutic index of this cytostatic-radioactive compound, even in the absence of the Photostimulated Chemotherapy protocol.

Keywords: Methotrexate, Photoensitizer, Radioactive marking, Radiochromatography, Scintigraphy.

RESEARCH ON THE ECG WAVES' AMPLITUDE RECORDED IN GOAT USING LIMB LEADS

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Summary

The main aim of our research was to determine the amplitude of the ECG waves in goats. For this purpose, we investigated the limb lead system. After examining the obtained electrocardiograms, we found that the highest P wave amplitude is recorded in lead II (0.096 ± 0.045 mV) and lead I (0.089 ± 0.068 mV), the highest amplitude of the ventricular complex is recorded in lead III (0.253 ± 0.094 mV), lead II (0.242 ± 0.087 mV) and lead I (0.228 ± 0.110 mV), and the highest amplitude of the T wave is recorded in lead II (0.132 ± 0.060 mV) and lead I (0.128 ± 0.057 mV). The lowest electrocardiographic wave amplitudes were recorded in lead aVF with values of: 0.035 ± 0.049 mV for the P wave, 0.164 ± 0.045 mV for the QRS complex and 0.060 ± 0.044 mV for the T wave. For the ECG recording in goat using limb leads, we recommend the use of lead II, as it gives the highest amplitude, the recording obtained being easy to interpret.

Keywords: electrocardiography, goat, limb leads.

THERAPEUTIC MANAGEMENT OF A DOG WITH DIABETES MELLITUS AND ACUTE PANCREATITIS

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Summary

This case report presents the clinical evolution and therapeutic management of a dog which was diagnosed with diabetes mellitus and acute pancreatitis. A 9-year old male mixed breed dog was presented with weight loss, anorexia, vomiting and polyuria, polydipsia. During his life he was fed with commercial food (wet and dry) and home-cooked food. Physical examination revealed a cranial abdominal pain, body temperature of 39.4° C, respiratory rate 28 rpm, heart rate 127 bpm, medium dehydration and the mucous membranes having a normal color. Biochemical and hematological analyzes were performed. As a result, the following parameters showed significant increases: glucose, urea, creatinine, aspartate aminotransferase (AST), alanine transaminases (ALT), alkaline phosphatase, amylase and triglycerides. The test for canine pancreatic lipase (IDEXX Snap cPL*) was also positive. Leukocytosis, neutrophilia, and monocytosis were among the abnormalities found on the complete blood count. Urinalysis showed a normal specific gravity (1.032), glucosuria (1000 mg/dl), ketonuria (40 mg/dl), mild proteinuria (30 mg/dl). Abdominal ultrasound showed a hypoechoic pancreas area surrounded by hyperechoic peripancreatic fat, without other changes in the echogenicity of the organs in the abdominal cavity. The treatment for diabetes and acute pancreatitis was initiated and the clinical evolution was good, the dog being discharged 2 weeks after the beginning of therapy.

Keyword: pancreatitis, diabetes mellitus, dog.

STUDY REGARDING A COMPUTER APPLICATION DESIGNED TO MANAGE A CATTLE BREEDING PROGRAM IN ROMANIA

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Abstract

In Romania, as a result of favorable factors, such as natural pasture potential, european subsidies, government programs for the purchasing animals, extensive intensive growth technology systems, the price of bovine meat, population trends towards the consumption of meat obtained in ecological conditions, in Romania were imported a series of specialized breeds for meat production, including Aberdeen Angus, Galloway, Highland, Aubrac, Charolais, Limousin. Aberdeen Angus breed was imported in Romania at the end of 2008 in Sibiu county when about 120 heifers were imported from Germany. In our country, the development and monitoring of this breed is carried out by the Aberdeen Angus Association, from Sibiu, this being the only accredited association for the services of drawing up and maintaining the herdbook of the Aberdeen Angus breed in Romania. Together with the implementation of european laws, according to the EU Regulation 1012/08/06/2016 O M 19/2016 and the Aberdeen Angus Breeding Program at the national level, the association undertook to develop a computer program capable of centralizing, storing and evaluating information of this breed on Romania. The BIDAA computer application (Informatic Database of Aberdeen Angus) was developed at the initiative of the Aberdeen Angus Association from Sibiu, the leader of herdbookhead for the Aberdeen Angus breed in Romania. Generally in this paperwork it will be studied how the BIDAA application works for all target groups and how useful the it is for this specific field of activity.

Keywords: Aberdeen Angus, beef cattle, computer application, BIDAA, herdbook.

TESTING THE EFFECTIVENESS OF TWO THERAPEUTIC PROTOCOLS IN INFECTED LAMBS FROM VALCEA COUNTY

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Summary

Protozoa and cestodes are found in sheep farms and have an increased susceptibility to lambs. The clinical effects of this endoparasitosis on sheep, but especially on lambs, lead to weight loss and even mortality. When assessing situations of polyparasitism in lambs, the youngest age group, we must choose the right substances according to the specific epidemiological situation and the intrinsic and extrinsic factors that may influence their therapeutic efficacy. In this context, the aim of the present study was to evaluate the therapeutic efficacy of two protocols administered to lambs from a Valcea County farm, infested with protozoa and cestodes. We performed the treatment based on Toltrazuril, respectively Diclazuril, which proved to be effective against *Eimeria spp.*, the E.P.G.-s decreased significantly, with a higher efficacy attributed to the Baycox product (Toltrazuril). The descriptive statistics associated with the scores corresponding to the E.P.G. obtained in the coprological examination and the application of the Kruskal Wallis test to determine the effectiveness of the treatment support the recommendation of the combination of Praziquantel (Prazicest) and Toltrazuril (Baycox 5%) in lambs infested with *Eimeria spp.* and tapeworms.

Keywords: lambs, Praziquantel, Toltrazuril, Valcea County.

TICK FAUNA OF CATTLE IN NORTHEASTERN PART OF SERBIA (BANAT)

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Summary

The present study was conducted in 30 cattle herd from the territory of Banat (Vojvodina) in the period of March to October 2019, during the grazing season was to established tick fauna in that area. Ticks were collected from cattle and from pastures where they were grazed. The tick species and sex/gender were identified by morphometric characteristics. Relative abundance analysis revealed that the *I. ricinus* was absolutely dominant species found in 71.22%, followed by *Haemaphysalis punctata* (18.22%), *Dermacentor marginatus* (11.72%), *Rhipicephalus sanguineus* (3.22%) and *Rhipicephalus bursa* (2.01%). On the pasture, however, the most common species was *H. punctata*, followed by *I. ricinus*, *D. marginatus*, *R. sanguineus* and *R. bursa*. Out of the total number of ticks collected, 53.65% were females and 46.35% were males. The sex ratio showed a higher number of females in four species (*Ixodes ricinus*, *Haemaphysalis punctata*, *Rhipicephalus sanguineus* and *Dermacentor marginatus*), while higher number of males were detected in *Rhipicephalus bursa*. The population dynamics of recorded tick species showed two annual maxima, in spring (April-May) and in autumn (September-October). The considerable interchange between spring and autumn tick populations can be attributed mainly to environmental conditions.

Keywords: cattle, ticks, Banat, Serbia.

IDENTITY OF ISOLATED STRAINS OF ADENITIS EQUI STREPTOCOCCUS IN KAZAKHSTAN WITH EUROPEAN STRAINS

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Summary

Horse breeding in Kazakhstan is a traditional industry and, according to the Ministry of Agriculture of Kazakhstan, in June 2021, there are up to 2.9 million horses. The intensive development of horse breeding highlights measures to combat the factors that hinder the development of this industry. One of these factors is an infectious disease - *Adenitis equorum*. It is an acute, contagious disease of horses, mainly foals, characterized by fever, catarrhal-purulent inflammation of the mucosa, nasopharynx, and lesions of the regional lymph nodes (submandibular, pharyngeal, and other regions). The incidence of the disease varies from 3-5% to 70%. Mortality is 1-7%. The present research describes obtaining, for the first time, an inactivated, intranasally administered vaccine, which will be developed from purified antigens containing extracellular proteins, the interaction of which with the epithelial cells in the nasal cavity of animals is one of the main factors in the growth of immunogenicity. The analysis of the genomes of the causative agent of washing horses will be performed using data from the literature and nucleotide sequence banks. Selection of primers and probes for conserved regions of the genome using computer programs. The research activity involves the development and introduction into veterinary practice of an inactivated vaccine against *Adenitis equorum* for intranasal use. The results of this work will make it possible to optimize anti-epizootic measures for the prevention and spread of this disease among horses.

Keywords: *Streptococcus equi*, *Adenitis equorum*, strangles.

THE ECONOMIC SIGNIFICANCE OF DECONTAMINATION IN SWINE MATERNITIES

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Summary

Depopulation/repopulation interval and decontamination are too often ignored in the intensive swine production based on so-called economic reasons. The present study aims to combat this idea with technical and economic arguments, by analyzing the farrowing records from a breeding farm with 6000 farrowings monthly, from August 2019 to February 2020 (7 months). The following indicators were analyzed: total born piglets, from which live-borns, stillborns, mummified, weaned and average weaning weight. From September 2019, all the decontamination steps were followed, and starting from January 2020 the decontamination of the sows' body was also performed. The average values of the indicators, for each month, were the following: total born piglets - 15.93 (August), 16.29 (September), 16.38 (October), 16.39 (November), 16.86 (December), 17.56 (January) and 17.63 (February); live-born piglets - 14.23, 14.96, 15.20, 15.37, 15.53, 15.71 and 15.63; the average number of weaned piglets per sow - 10.68, 10.94, 11.12, 11.52, 11.34, 11.65 and 11.52; average weaning weight (kg) - 5, 5.4, 5.9, 6, 6.2, 5.9, 6.2. It was found that surfaces and sows' body decontamination have both technologic and economic advantages.

Keywords: swine maternity, decontamination, economic impact.