

SMALL AND LARGE STRONGYLES FOUND IN TWO PREGNANT MARES

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Summary

Strongyles are among the most common parasites found in horses. They are divided in two main categories – the large strongyles (Strongylinae) and small strongyles (Cyathostominae). The aim of the study was to identify the parasites found in faeces, examined by flotation method and larval cultures. Two pregnant mares located in Arad County, Romania were investigated for parasites. Only strongyle eggs were found, but because of the similarity of the morphological features of the eggs, larval cultures were performed. The collected larvae were measured (length of the larvae with sheath, length of the oesophagus, intestine, end of the intestine to the end of the larvae body and the body breadth) and the arrangement of the intestinal cells recorded as type A and D. After this measurements the species identified were: small strongyles - *Cyathostomum catinatum*, *C. pateratum*, *Cylicostephanus goldi*, *C. longibursatus* and large strongyles – *Strongylus vulgaris*, *Triodontophorus* spp.

Key words: horses, small strongyles, large strongyles

TESTING THE EFFICACY OF OXIBENDAZOLE IN SWINE HELMINTOSIS

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Summary

The importance and the frequent use of oxibendazole in swine demands periodical efficiency tests in order to guarantee the safety of the patients and to establish the minimal dosage necessary for the treatment. The major objectives of this study were to assess the healing, mortality and respectively morbidity rates, the level and duration of protection, the doses, the therapeutic efficacy and the determination of oxibendazole resistance.

The tests were applied on swine, one control group and three test groups, presenting natural infestations. The laboratory investigations were performed on blood and fecal samples. The safety assessment results showed a 100% effectiveness of oxibendazole used in normal dose against: *Ascaris suum*, *Trichocephalus spp*, *Metastrongylus spp.*, *Oesophagostomum spp.*, *Stroglyoides*, *Acanthocephala*. When using the double dose, the efficacy was identical to that obtained in the group treated with therapeutic doses.

The resistance tests revealed that the intensity and the extent of these parasitic diseases dropped to null in 28 days, following the treatment, thus proving a 100% efficacy of the used substance. These results are also confirmed by the statistical analysis of the obtained data: the reduction is, in all cases, 100% and the limit of the superior interval of trust of 95% at 28 days post-treatment has shown values of over 90% in all cases, confirming the therapeutic efficacy of treating pigs with oxibendazole in worm infestations.

Key words: oxibendazole, swine helminthosis, resistance,

**IN VITRO THERAPEUTIC EFFICACY TESTING OF THE
BENZIMIDAZOLES USED IN SHEEP**

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Summary

In order to test the *in vitro* efficacy of the benzimidazoles used usually in sheep, faecal samples were collected from a flock of 15 sheep belonging to the Biobase of the Faculty of Veterinary Medicine Cluj-Napoca, between November 2013 and May 2014.

The faecal samples were collected from each animal, obtaining a common sample and, using the flotation method, helminth eggs were collected.

Testing the efficacy of the anthelmintics, respectively the benzimidazole derivatives (ABZ, FBZ, MBZ, TBZ), was performed by the two methods used internationally: the egg hatching test (EHA) and the larval development assay (LDA). At the EHA tests used for these molecules, for the reference concentration (0.15 mg / ml) of helminth eggs, the hatching percentage was more than 50%, which indicates a reduced efficacy of the products against the exogenous forms of the parasites.

The regression line had positive tendency for ABZ and MBZ, and negative for FBZ and TBZ. The lowest value of the Y parameter was at FBZ (49.19) reflecting a lower risk of inducing the resistance phenomenon. In the case of LDA tests, a greater efficacy of FBZ was revealed compared to the other benzimidazole derivatives. The lowest MIC value was for FBZ (0.2547 mg / ml). Determining the Y parameter showed a lower risk of inducing resistant parasites when using products based on FBZ (12.40).

Key words: sheep, benzimidazoles, EHA, efficacy

THE INCIDENCE OF DOG RECURRENT OTITIS CAUSED BY STRAINS OF MULTIDRUG-RESISTANT (MDR) *PSEUDOMONAS AERUGINOSA*

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Summary

The dog otitis is a disease with a high incidence, that sometimes encounters difficulties or errors of diagnosis or treatment. These errors can be associated with a great diversity of clinical manifestations, different from one animal to another. The infectious agent can be considered a primary or associated pathogen agent.

Pseudomonas aeruginosa is frequently involved in medium and external otitis followed by erosions, ulcers and considerable quantities of light-yellow secretions, usually with a chronic and recurrent evolution.

The studied group has included 26 strains of *Pseudomonas aeruginosa*, non-duplicated, isolated between 2013 and 2014 in the Microbiology laboratory of the University Centre of veterinary medical research within FMV Iasi.

A recent recommendation (7), to define the multidrug-resistant strains (MDR) as the lack of sensibility to at least 3 classes of antibiotics from the 7 studied ones.

The 7 classes of antibiotics researched were: cephalosporins, combinations of penicillin, anti-*Pseudomonas* and β -lactamase inhibitor, cephalosporins with extended spectrum, carbapenems, fluoroquinolones, monobactams, polymyxins and aminoglycosides.

This study has highlighted 16 MDR strains (61.53%). The high percentage of *Pseudomonas aeruginosa* MDR strains and limited variety of election ORL antibiotics, requires a review of etiological diagnosis protocol.

Key words: otitis, MDR, *Pseudomonas aeruginosa*

OCCURRENCE OF *CHLAMYDOPHILA FELIS* IN DOMESTIC CATS

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Summary

The present survey was conducted to investigate the occurrence of *Chlamydomphila felis*, in domestic cats. A total of **89** specimens from the conjunctival mucosa and serum of cats with clinical signs of the ocular and respiratory infections, were collected to assess the presence of the genus *Chlamydomphila* species based on indirect immunofluorescence and rapid immunoassay test. Forty-three (48.31%) serum samples and thirty-seven (41.57%) were found *Chlamydomphila* positive according to serology and direct detection test. Results highlighted the importance of the rapid and accurate diagnosis of chlamydial infections in cats, in order to develop of effective strategies for disease management and control. The cats diagnosed with *Chlamydomphila felis*, can the constitution an important and dangerous source of chlamydia to humans, there is a zoonotic potential.

Key words: *Chlamydomphila felis*, conjunctivitis, immunofluorescent antibody assay, cats

**PREVALENCE OF FELINE IMMUNODEFICIENCY VIRUS (FIV)
INFECTION IN CATS - PRELIMINARY STUDY**

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Summary

Feline immunodeficiency virus (FIV), a retrovirus, with a global impact on the health of domestic cats. FIV can cause acquired immunodeficiency syndrome, which increases the risk of opportunistic infections, neurological diseases and tumors. This study included 42 domestic cats with short or long hair, belonging to six different breeds (Persian, British short hair, Burmese, American short hair, Siamese and European), presented at the University Veterinary Clinic, Faculty of Veterinary Medicine Timișoara, respectively different private veterinary clinics in Timisoara, during January 2013 - June 2013. Blood samples (serum) collected from cats were processed by serological tests using commercial tests: FeLV / FIV IC Biopronix / Agrolabo's – Italy. Of the total number of blood samples analyzed by commercial serological tests, 19.04% (8/42) were positive for FIV. Clinical evaluation showed that 35.71% (3/28) of FIV-positive animals were sick during sample collection, while 10.71% (5/14) did not show any signs clinical disease. High prevalence of FIV infection (19.4%) observed in the Timisoara, suggests the importance of a correct diagnosis of infection with FIV and differential diagnosis from other infectious diseases in cats by veterinarians clinicians.

Key words: Feline immunodeficiency virus, cats, serological test

HAEMATOLOGICAL CHANGES IN CANINE PARVOVIROSIS

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Summary

In the paper are presented the results obtained in order to investigate the haematological changes in clinical cases of canine parvovirus. The changes are demonstrating that there is a significant decline in the total number of red blood cells accompanied by decreased percent of the hematocrit and hemoglobin, associated with a marked leukopenia, due to lymphocytopenia and the decrease in the total number of granulocytes. The degree of leukopenia, granulocytopenia, lymphocytopenia is more pronounced as the survival rate (successful treatment) is lower.

Key words: canine parvovirus, leukopenia, red blood cells, haematological changes.

RESEARCHES REGARDING THE INFECTION WITH THE CANINE DISTEMPER VIRUS IN URBAN POPULATION OF DOGS

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Summary

In the paper are presented the results obtained in order to investigate the infection with the canine distemper virus in urban population of dogs. Using rapid antigen test kit CDV Ag produced by Quicking Biotech Co there were found 15 dogs positive at distemper. In dogs with positive tests these syndromes evolved: catarrhal, digestive, respiratory and nervous.

Only 6 dogs were healed, although all 15 were treated. The other 9 dogs treated showed nervous syndrome, in addition to one of the syndromes: catarrhal, digestive and respiratory.

In the urban population of dogs, those that were diagnosed with distemper, showed that the main symptoms were the nervous symptoms that determined their death.

Key words: Distemper virus, nervous symptoms.

PREVALENCE OF GASTROINTESTINAL PARASITOSEs IN WILD BOARS (*SUS SCROFA*) IN ARAD COUNTY

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Summary

In the period November 2014 - February 2015, 28 wild boars (*Sus scrofa*) from five hunting territories of Arad County were necropsied. Out of these, 16 were males, 12 females and they were aged between ten months to four years. To determine the digestive tract parasites, gastrointestinal mass were collected from the wild boar cadavers. Macroscopically, each segment of the digestive tract was opened and carefully the mucosa and the content were examined, then the gastrointestinal mass was examined by successive washes method. Microscopically the gastrointestinal mucosa and content were examined with the stereo microscope, after a preliminary wash. Subsequently the feces were examined by flotation (Willis) method. Of the 28 samples examined 24 were positive, the overall prevalence was 85.71%. Regarding the prevalence of parasites found, the parasitism with: *Eimeria* spp., was found in 13 samples (46.42%), *Hyostrogylus rubidus* in 10 samples (35.71%), *Ascaris suum* in six samples (21.42%), *Trichocephalus suis* in 13 samples (46.42%), *Globocephalus urosubulatus* in 23 samples (82.14%) and *Oesophagostomum* spp., in four samples (14.28%).

Key words: gastrointestinal, prevalence, parasites, *Sus scrofa*.

RESEARCH REGARDING ON THE FREQUENCY OF CHARACTERISTICS GENES OF APEC STRAINS

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Summary

Avian colibacillosis cause significant economic losses, either as primary disease or as a secondary infection, to broilers chickens, youth, of laying hens and of breeding hens. It is produced by strains of *E. coli* falling within APEC pathotype (Avian pathogenic Escherichia coli) with the penetration site, the body's respiratory mucosa, being considered systemic extraintestinal infection.

Based on literature data, in 2003, EWERS CHRISTA et al., have developed a comprehensive study, who described for the first time, the phenotypic and genotypic characteristics of this pathotype.

The researches has aimed the frequency of virulence genes, characteristic of APEC pathotype, a number of 118 *E. coli* strains isolated from outbreaks of colibacillosis, which evolved in broiler flocks by multiplex PCR screening (Polymerase Chain Reaction).

By molecular biology, were detected the genes *ompA*, *iss*, *fim H* and *lac Z*, whose frequency was variable.

The gene *Omp A* wich encodes the synthesis of outer membrane proteins, the role of adhesin, was present at 83.10% of the strains, the gene *iss* which also encodes the synthesis of external membrane proteins, also the role of the adhesin, inducing resistance to complement was present at 88.14% of the strains, the gene *fim H* encoding the synthesis of type I fimbria was present in 83.9% of the strains, and the *lac Z* gene encoding the enzyme synthesis D beta galactosidase, was present in all strains tested.

The multiplex PCR technique allows detection of these virulence genes on which *E. coli* strains isolated from poultry can be included in APEC pathotype.

Key words: avian colibacillosis, *E. coli* virulence genes

SURVEY OF CANINE DIROFILARIOSIS BY NON MOLECULAR ASSAYS IN ROMANIA

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Summary

Canine dirofilariosis, a severe vector-borne emergent disease, is caused by the nematode species *Dirofilaria immitis* and *Dirofilaria repens*. The aim of our study was (i) to provide new information regarding the occurrence of *Dirofilaria* infection in dogs from western and south-western Romania and (ii) to assess the involved species in the screened area through non molecular to. A total of 650 dogs were involved in the study using the non-probabilistic sampling procedure. EDTA collected blood samples were screened for the presence of *Dirofilaria* infection using six methods namely: the fresh blood smear technique (650 samples), modified Knott test (650 samples), SNAP[®] 4Dx[®] (IDEXX Laboratories) (299 samples), histochemical stained (only microfilaria positive samples), the enzyme-linked immunosorbent assay (ELISA, DiroCHEK[®] Canine Heartworm Antigen Test Kit) (299 samples) and *D. immitis* – Speed[®] DIRO / HEARTWORM antigen specific test (299 samples).

One hundred nineteen samples (18.3%) were identified with microfilaria in a fresh blood smear. Through modified Knott test 169 (26%) samples were found to be positive for microfilaria, and out of them 125 (73.9%) presented specific morphologic characters to *D. repens*, 34 (20.1%) to *D. immitis*, and 10 (5.9%) to both species, respectively. Specific antigens to *D. immitis* were found in 18 (6.0%) samples screened by ELISA, 16 (5.35%) samples screened by Snap 4DX and Speed[®] DIRO / HEARTWORM test.

The results of this study highlighted the importance and widespread occurrence of these pathogens in Romania, previously confirmed by other studies carried out in different regions of the country and the neighboring Hungary and Serbia. However, for a more comprehensive etiological picture further studies, supported by molecular tools, are still required.

Key words: dogs, blood, prevalence, *Dirofilaria immitis*, *Dirofilaria repens*

**THE EFFECTIVENES EVALUATION OF FOUR DIAGNOSIS
METHODS IN CANINE DIROFILARIOSIS**

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Summary

The aim of this study was to assess the efficacy of four diagnosis methods in canine dirofilarios in order to bring contributions and suggestions in choosing effective methods for laboratory diagnosis. The study was conducted on a total of 118 stray dogs. From each animal in the study blood samples were collected through the brachial vein puncture into sterile EDTA vacutainers. On the day of samples collection individual blood drop exam and Knott modified test were performed. The remaining blood samples were stored at - 20⁰ C and serologic ELISA (DiroCHEK; Lab Pack Symbiotics[®]) and molecular-Multiplex PCR tests were performed. Modified Knott technique was considered the "gold standard" in the diagnosis of microfilariae to assess the specificity and sensitivity of the used methods. Examination of the fresh blood drop is a very cheap and quick test recommended before Knott and PCR methods. Knott's modified test is performed in a relatively short time using inexpensive reagents with the possibility of interspecies differentiation. ELISA method is recommended for epidemiological studies focused on serological screening of a large animal effective, but in situations of individual cases, the high cost of the kit determined to be the last option. Molecular diagnosis by PCR proved the method with best specificity and sensitivity, recommended for species confirmation.

Key words: dogs, blood, drop exam, Elisa, Knot, PCR, *Dirofilaria* spp.

CO-INFECTION WITH *DIROFILARIA REPENS* AND *ANAPLASMA PLATYS* IN A DOG- A CASE STUDY

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Summary

Over the last years the geographical expansion of canine vector-borne pathogens in western Romania has increased gradually. The present paper presents a case of canine dirofilariosis caused by *Dirofilaria repens* in co-infection with *Anaplasma platys*, the etiological agent of canine cyclic thrombocytopenia. A five years old female hunting dog with unspecific clinical signs, like fatigue during exercise was tested for the presence of microfilaria using Knott modified test and for other vector-borne blood pathogens by stained blood smear test. Paraclinical investigations revealed only slight eosinophilia. The presence of *Dirofilaria repens* was observed in direct fresh blood drop examination and also in the modified Knott method. In Diff-Quick stained blood smears basophilic inclusion bodies were noted in platelets. Molecular analysis confirmed the presence of *Anaplasma platys*. This is the first report of *A. platys* in western Romania.

Key words: dog, dirofilariosis, anaplasmosis

**PHYLOGENETIC ANALYSIS OF THE ROMANIAN VULPINE
ISOLATE *HEPATOZOON CANIS***

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Summary

Hepatozoon canis is recognized as an obligate intraerythrocytic parasite affecting wild canids and domestic dogs, especially in Europe. The phylogenetic relationship of the GenBank® deposited partial 18S rRNA gene sequence of *H. canis* (Accession No. KM096414), isolated from Romanian red foxes, was investigated to other 73 GenBank® retrieved sequences namely *H. canis* (n=69), *H. felis* (n=3) and *H. americanum* (n=1), respectively. The Maximum Likelihood algorithm using Hasegawa-Kishino-Yano plus Gamma model with bootstrap iterations was used. The *H. canis* sequence isolated from the Romanian foxes clustered together with all *H. canis* sequences in four distinct clades, while *H. americanum* and *H. felis* were considered as out-group species and were placed in a different clade, branching separately from the *H. canis* sequences and occupying a basal position in the tree topology. The results pointed out the close phylogenetic relationship between Romanian *H. canis* red fox isolates and other European *H. canis* sequences, provided especially from the surrounding regions.

Key words: protozoa, blood parasite, gene sequence

ANTIMICROBIAL RESISTANCE LEVEL OF *PASTEURELLA MULTOCIDA* STRAINS ISOLATED FROM CALF PNEUMONIA

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Summary

Pasteurella multocida is a Gram negative bacterium nominated among the most important animal pathogens in the view of the severity of the associated clinical diseases, characterized by high morbidity and mortality, with significant economical losses. In dairy calves, *Pasteurella multocida* plays a key role in the etiopatology of bovine respiratory disease (BRD), acting synergistically with complex viral and bacterial agents such as bovine viral diarrhoea virus (BVDV), bovine respiratory syncytial virus (BRSV), bovine herpesvirus 1 (BoHV-1), parainfluenza 3 virus (PI3V), *Mannheimia haemolytica*, *Mycoplasma bovis*, and *Histophilus somni*. The current study was intended to investigate the occurrence and the characteristics of antimicrobial resistance among the *Pasteurella multocida* isolates of bovine origin. Nasal swabs obtained from 46 Holstein calves displaying clinical signs of dairy calf pneumonia were cultured on blood agar and MacConkey agar and for the isolated strains (n=32) the antimicrobial susceptibility testing was performed using the disk diffusion method (Kirby-Bauer) according to CLSI guidelines. The antimicrobial resistance was recorded for 5 strains (15.6%) and towards several antimicrobials: penicillin and streptomycin (100%), gentamicin (80%), amoxicillin (40%) and oxytetracycline (40%). Susceptibility was noticed in case of florfenicol, enrofloxacin and marbofloxacin. These results underline the importance of rational use of the antimicrobial therapy and suggest the need to monitor the antimicrobial resistance tendency in case of farm animals.

Key words: antimicrobial resistance, *Pasteurella multocida*, calves

FACTORS THAT INFLUENCE THE EPIDEMIOLOGY OF RESPIRATORY DISEASES IN SEMI-INTENSIVELY RAISED CALVES – A REVIEW

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Summary

The respiratory disease complex represents one of the major causes of economic loss on bovine farms, especially in calves raised for meat. Numerous researchers that focused on investigating the etiology of the respiratory disease complex concluded that it is extremely difficult to rank the importance of individual factors and, due to diagnostic difficulties and extreme differences between the farms there is no generally valid answer.

The commingling technology involved on semi-intensive farms, typical for certain regions of Romania increases the number of predisposing factors, the animals being collected from numerous sources, at different ages, with different histories and carrying different microbial flora. The source of origin, the transportation process, individual characteristics of the commingled animals, the carried microbial flora can increase the exposure or even susceptibility to disease. Sometimes, the stressful factors sum up their effects, inducing, or aggravating the pathogenesis and the clinical outcome. Most frequently, changes in veterinary technology like antibiotic treatments, on-spot vaccinations, and various diets end up only augmenting the stress levels. Although preconditioning represents a procedure involved at a lesser extent on selling farms it could help improving the health status of the commingled animals. This review aims at establishing an inventory of the variety of stressors that intervene under semi-intensive raising of calves, by grouping and ranking them based on their frequency, duration of action, immediate impact, long term impact, etc.

Key words: respiratory disease complex, calves, technological stress, commingling

**MORPHOMETRIC STUDY OF NOSEMA SPORES ISOLATED
FROM HONEY BEE FROM WESTERN ROMANIA**

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Summary

Nosemosis is one of the most serious diseases in adult bees, with a high prevalence in colonies, caused by *Nosema apis* and, more recently, *Nosema ceranae*. These protozoa form spores by which the parasite is spread between hosts. One of the criteria for distinguishing the genus *Nosema* are the morphological characteristics including size, shape, internal and external structure. Live bee samples (12) were collected from three apiaries located in the west and were subjected to qualitative diagnostic technique of *Nosema*.

We have measured and recorded the length and width of ten spores in each positive sample with massive infection. Statistical interpretation was performed with Excel. The identified spores are morphologically characteristic to the *N.apis* species.

The average length value of *Nosema* spores of 5.7 μm was located slightly above the average length of *N. apis* spores and well above the average length of *N. ceranae* spores. The *Nosema* spores` width had an average value of 2.65 μm closely related to the average width values of *N. apis* spores and well over the width values of *N. ceranae*. In conclusion, this study is indicative morphometric and precedes the ultrastructural diagnostic methods, and finally, the molecular biology of the species to confirm the diagnosis.

Key words: bees, spores, *Nosema*, morphometric study

**THE DYNAMICS OF BLOWFLIES OF *CALLIPHORA*, *LUCILIA*
AND *PROTOPHORMIA* GENERA DURING 2007 IN NORTHERN
TIMIȘOARA**

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Summary

The paper describes the dynamics of *Calliphoridae* family blowflies in northern Timișoara. During 2007 the blowflies of *Lucilia*, *Calliphora* and *Protophormia* genera were monitored between April 20 and October 30. Unlike previous years, 2007 was a very hot and dry one. For all three monitored genera (*Calliphora*, *Lucilia* and *Protophormia*) 7 population peaks were recorded. For *Calliphora* genus first capture was achieved on April 20, the first peak was noticed on April 29th, at an air average temperature of 18.1°C, a soil average temperature of 21.3°C, and 45% relative humidity, and the last one on October 05th, at an air average temperature of 17.0°C, a soil average temperature of 19.8°C, and 76% relative humidity, respectively. For *Lucilia* genus the same April 20 was the first capture date, and October 05th the last capture date. First peak was recorded on April 28th at an air average temperature of 16.9°C, a soil average temperature of 22.1°C, and 55% relative humidity. Last one was recorded on October 05th, at same parameters described also for *Calliphora* genus. The highest peak was noticed on July 24th, with 504 individuals caught. For *Protophormia* genus first capture was performed also on April 22nd, but the first peak was noticed on April 29th, at the same parameters described above for *Calliphora* genus, and the last one also on October 05th.

Key words: dynamics, blowflies, 2007, northern Timișoara.

**PREVALENCE OF EUSTRONGYLIDOSIS AND LOCATIONS OF
EUSTRONGYLIDES EXCISUS IN ZANDER (*STIZOSTEDION
LUCIOPERCA*) IN BELOBREȘCA AQUATIC HABITAT, CARAS-
SEVERIN COUNTY**

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Summary

Eustrongylidosis is a worldwide reported disease, with increasing prevalence in recent years. The disease has an interesting bioecology and its complexity is conferred by the multitude of definitive, intermediate and reservoir hosts.

The study was conducted in the Danube river basin in the perimeter of Belobreșca village, between April 2012 and April 2013. In the study 88 adult specimens of zander (*Stizostedion lucioperca*) were examined using classic techniques. Following parasitological investigations the prevalence of eustrongylidosis in zander (*Stizostedion lucioperca*) was 55.68%.

The locations of *Eustrongylides excisus* were observed in muscle tissue, mesentery, stomach and intestinal wall. In 38.63% of the positive fish, *E. excisus* was found in muscle tissue, mesenteric locations and the intestinal and gastric wall represented 9.09% and 7.95% respectively.

Key words: prevalence, *Eustrongylides excisus*, *Stizostedion lucioperca*

**PREVALENCE OF HELMINTHOSIS IN HUNTING SPECIES
CAPREOLUS CAPREOLUS (ROE DEER) AND *SUS SCROFA* L.
(WILD BOAR) IN CÂMPIA VILLAGE SYLVATIC ECOSYSTEM,
CARAS-SEVERIN COUNTY**

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Summary

Helminthosis of domestic and wild animals affect their biologic and reproductive indicators. Studies undertaken by most parasitologists had as a subject domestic animals but in the last years, great interest on wildlife species *Capreolus capreolus* and *Sus scrofa* L., have generated these investigations (March 2013-April 2014).

During the study 11 samples (gastrointestinal mass, lung, liver) from roe deer and similar amount of samples (11) from wild boar were examined. The samples were examined using the technique described by Skrjabin.

The prevalence of infestation in wild boar (*Sus scrofa* L.) ranged from 36.36% for globocephalosis to 81.81% in infestation with *Metastrongylus pudendodectus*. In roe deer (*Capreolus capreolus*), the prevalence of dictyocaulosis (*Dictyocaulus filaria*) was 18.18% and the prevalence of intestinal nematodes was 54.54%. Gastrointestinal helminths genus identified were *Trichostrongylus*, *Haemonchus*, *Chabertia* and *Trichocephalus*.

Key words: prevalence, helminthosis, *Sus scrofa* L., *Capreolus capreolus*

DESCRIBING OF AN ENZOOTIC BOVINE LEUKOSIS OUTBREAK

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Summary

In this paper are described an enzootic bovine leukosis outbreak in a farm from Bihor county. This farm is an individual farm founded in 2005 with a number of 27 cows and 7 heifers Romanian Spotted. The number of animals increased year by year. Between 2010 and 2014 in studied farm was registered variable number of animals.

The first positive animals were detected in the spring of 2010 (in March) as a result of routine test. As a result of EBL declaration in this farm was started rehabilitation by extraction measures and 50 cows were slaughtered in next month.

In the next years new infected animals appeared due the delay in implementing control measures and the maintaining of infected animals in farm. In 2011 there were more slaughtered 38 cows and in 2012, 14 cows. In the last two years, no positive animals were registered. At the end of 2010, infection percent was 32.6, in 2011 – 21.9, and in 2012 – 4.3. In the next years (2013-2014) infection percent was zero. Even if in this farm wasn't recorded positive animals, it was necessary to continue serological testing of animals to avoid disease recurrence, especially EBL cases in Bihor county are still registered.

Key words: Enzootic bovine leukosis, outbreak

MOSQUITOES (DIPTERA: *CULICIDAE*) AND THEIR RELEVANCE AS DISEASE VECTORS IN THE EAST OF ROMANIA

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Summary

Mosquitoes (Diptera: *Culicidae*) are important vectors for a wide range of pathogenic organisms. Several mosquito-borne diseases, including West Nile virus encephalitis, have been already signaled in Romania. In this study, we investigated the mosquito occurrence in three counties (five villages) from the East of Romania, in order to estimate the risk of transmission of mosquito-borne diseases in humans. A number of 1030 adult mosquitoes were captured using different sampling techniques at five sites in Bacău, Brăila and Tulcea counties, during July-August 2014. Species belonging to the *Culex pipiens complex* (25.44%) were more abundant, followed by *Anopheles maculipenniss.s* (12.72%) and *An. hyrcanus* (12.72%), *Cx.modestus* (8.83%), *An.claviger* (7.67%), *Coquillettidia richiardii* (7.48%), *Aedes sticticus* (6.99%), *Ae.vexans* (4.76%), *Ae. cinereus* (2.43%), *An. plumbeus* (2.14%), *Ochlerotatus caspius* (1.75%), *Ae. detritus* (0.29%), *Ae. spp* (6.70%) and *An. spp* (0.10%). *Cx. pipiens complex* and *Cx.modestus* are known to be a potent vector and pathogens like West Nile virus (WNV), Usutu virus (USUV), Tahyna virus (TAHV), Sindbis virus (SINV), *Plasmodium sp.*, and *Dirofilaria repens* can be transmitted by these species. *An. maculipenniss.s* it is a secondary vector for human malaria and *An. hyrcanus* it is an efficient vector for *Dirofilaria immitis*. *An. claviger* it is known as primar vector for human malaria in Middle East. Our study underlines the risk of at least West Nile virus and malaria evolution in human population in the studied areas due to the abundance of the efficient vectors.

Key words: mosquitoes, vector- borne diseases, vectors

PREVALENCE OF WEST NILE VIRUS IN WILD AND DOMESTIC BIRDS FROM DANUBE DELTA, ROMANIA

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Summary

Birds, especially migratory ones, have an important contribution to the geographic distribution of many pathogens such as viruses or parasites. Considering that two important West Nile epidemic episodes were reported in Romania until now, the aim of this study was to evaluate the seroprevalence of West Nile virus in wild and domestic birds from Danube Delta, Romania. During 2013-2014, serum samples from 31 wild birds belonging to 17 species and from 21 domestic birds (*Gallus gallus domesticus*; *Anas platyrhynchos*) were collected, from Sfântu Gheorghe and Pădurea Letea area. The sera were assayed by a commercial cELISA kits for antibodies, IgG type, against West Nile (ID Screen West Nile Competition Multi-species, ID.vet; Innovative Diagnostics, Grabels, France). Seroconversion induced by WNV was observed in 7 wild bird species and in both *Gallus gallus domesticus* and *Anas platyrhynchos*. Our results showed a high prevalence of West Nile virus antibodies both wild (22.58%; 7/31; IC 95% 9.59-41.1) and domestic birds (19.05%; 4/21; IC 95% 5.45-41.91). The results provide evidence of the wild bird's involvement in West Nile cycle and in virus maintenance in Danube Delta area.

Key words: West Nile, wild birds, domestic birds, prevalence

STANDARDISATION OF THE LEUKOCYTE BLAST TRANSFORMATION TEST IN QUANTIFYING THE *IN VITRO* EFFECTS OF IMMUNE ENHANCERS/MODULATORS IN BIRDS

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Summary

Cell-mediated immunity and immune cell interactions are crucial in a large number of physiologic functions. Furthermore, enhancement/modulation of cell-mediated immune responses could play an important role in microbial disease control. The experiment aimed to establish the most appropriate conditions and define the critical points for the *in vitro* blast transformation of leukocytes, when used to test *in vitro* the potential enhancers/modulators for the immune cells.

The research was carried out on 37 weeks old, intensively farmed Rock hens. The birds were vaccinated against Newcastle disease under farm conditions. Blood samples were collected and subjected to the *in vitro* blast transformation test, by use of heparinized blood (50 IU/ml) diluted 1:4 with RPMI 1640, distributed in 96-well plates and treated in duplicate with classical mitogens (PHA M, ConA, LPS, each at a dose of 1 μ l/well) and also alcoholic extracts of *Calendula officinalis* L., *Arnica montana* L., *Symphytum officinale* L. and *Echinacea angustifolia* (1.5 μ l/well) and subsequently cultivated for 48 hours. Growth was estimated by the calculation of stimulation indices (SI%) based on the glucose consumption test.

The results indicated the highest efficacy of LPS (SI 69.54 \pm 8.37%) among the mitogens and of *E. angustifolia* (SI 51.5 \pm 12.73%) among vegetal extracts. There were non-significant differences between the mitogen and the vegetal extract induced indices, within the group and between the groups, except the *C. officinalis* extract (SI 20.23 \pm 7.23%, $p < 0.05$ - $p < 0.01$), supporting the experimental variant used as appropriate to quantify the effect of various compounds on the *in vitro* cell-mediated immunity in chickens.

Key words: birds, leukocytes, blast transformation, immune enhancers/modulators

GASTROINTESTINAL HELMINTS OF GOATS BREEDING AT STARA PLANA AREA (SERBIA)

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Summary

Goats population in Serbia had a drastically decrease after II WW, but in last decade were started to anew increase of its population especially at mountain areas. Pasture breeding make possible contact within goats and eggs, larvae stages and intermediate host of parasites. Those induce that there are no one goats without parasites. Examination of helminth fauna of goats were only sporadically performed in Serbia and from these reason in mind, we started with those examination at various parts of Serbia. At first, we started at Stara planina. During this study parasitic infection was detected in the 86.40% (324/375) of examined animals. We established the following genera of gastrointestinal helminths: *Ostertagia* spp., *Trichostrongylus* spp., *Nematodirus* spp., *Hameonchus contortus*, *Chabertia ovina*, *Cooperia* spp., *Oesophagostomum* spp., *Marshallagia* spp., *Skrjabinema capre* and *Bunostomum* spp. Most prevalence species of nematode are *Ostertagia* and *Trichostrongylus* species. Polyparasitism was observed in 305 (61.33%) animals. At adult animals polyparasitism was occurred at 82.74% (235/284) goats and in 78.17% (70/91) at young animals.

Key words: goats, helminthes, Stara planina

**EPIDEMIOLOGIC, CLINIC AND ANATOMOPATHOLOGIC
RESEARCH IN AN OUTBREAK OF BROILER CHICKENS WITH
AVIAN REOVIRUSIS**

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Summary

Avian reovirus infection is prevalent in intensive poultry farming, especially in broilers, which evolve with many anatomoclinical forms. The research was carried out in a flock of 10,000 broilers, COBB 500 hybrid, increased ground.

This flock was monitored by epidemiological, clinical and pathological studies (macroscopic and microscopic exam), performed biweekly during the growth, until the age and weight of the slaughter. Analyzing the weekly evolution of this indicator, the maximum value was registered in the first week, and limits were between 2.16% and 0.73%.

Clinical examination highlighted the presence of symptoms of both syndromes of disease: malabsorption syndrome and arthritis-tenosynovitis

The results of pathologic examination revealed characteristic lesions for reovirus, the highest frequency having bilateral necrosis of the femoral head (40.22%) and proventriculus (32.18%), and other lesions had a lower frequency.

The results obtained showed reovirus evolution in broilers, in several clinical forms, confirmation of the disease was demonstrated by the ELISA test.

Key words: broiler chickens, avian reovirus, malabsorption syndrome

SEROLOGICAL EVIDENCE OF WILD BOAR HEPATITIS E INFECTION IN THREE COUNTIES FROM EASTERN ROMANIA

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Summary

Hepatitis E is a recognized zoonosis and swine are known as reservoirs. Human and swine HEV are classified in the *Hepeviridae* family as a separate *Orthohepevirus* genus, *Orthohepevirus A* species (15). A high prevalence of HEV in wild boar populations is reported for several European countries, but actual data for Romania are limited.

Between September and December 2014, a total number of 52 wild boar sera were collected from three Counties: Vrancea, Bacau and Iasi. For serological analysis, serums were tested using a commercially available HEV antibody assay: ID Screen®Hepatitis E Indirect Multi-Species, IDVet Diagnostics, France.

This study aimed to evaluate HEV infection prevalence in wild boar living in hunting areas from Eastern Romania. For this purpose, a prevalence study of wild boar samples through serological test was conducted. The results of the analysis showed an overall prevalence of 9.61% for anti-HEV antibodies. Seropositive animals were identified in all three Counties, respectively 2 out of 18 for Iasi and Bacau County, 1 out of 16 in Vrancea County.

Thus, wild boar might represent an important source of autochthonous HEV infection in Romania. The main focus of future research should be to follow HEV identification in wild boar meat and to identify the potential zoonotic transmission routes.

Key words: hepatitis E, wild boar, serology.

SEROLOGICAL SURVEY OF LYME DISEASE IN DOGS FROM EASTERN ROMANIA

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Summary

Lyme disease is a vector-borne disease caused by spirochetes from *Borrelia burgdorferi* complex transmitted by ticks. In Europe, the most common genospecies isolated from animals and humans are: *Borrelia afzelii*, *Borrelia garinii* and *Borrelia burgdorferi* sensu stricto. Pathogens are transmitted by various species of genus *Ixodes*. In Europe, *Ixodes ricinus* is the most important vector.

Dogs are susceptible to tick infestation due to their interactions with the specific habitats of arthropods and so the risk of Lyme disease transmission is high. Many authors have proposed dogs to fulfill the role of "sentinels" making it possible the identification of risk areas for Lyme disease.

The purpose of this study is to determine the seroprevalence of antibodies against *Borrelia burgdorferi* s.l in dogs serum collected from four counties of Romania. Dog sera were analyzed using a commercial enzyme-linked immunosorbent assay (IgG Canine Lyme Borrelia - ELISA, NOVATEC, Germany). A total of 90 serum samples were tested.

Following the immunoassay, one sample (1.11%) was positive for *Borrelia burgdorferi* IgG antibodies from the 90 tested samples. The seroprevalence registered in this study is lower than in previous studies conducted in Romania. The fact that most of the samples are from dogs kept in animal shelters may be an explanation for the low seroprevalence.

Key words: Lyme disease, dogs, *Borrelia burgdorferi* s.l., ELISA

INVESTIGATION OF PARASITISM WITH *GIARDIA* SPP. IN PIGS

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Summary

This study presents the identification and determination of the prevalence of *Giardia* spp. infestation in pigs. There were studied 109 fecal samples from pigs in Timiș County. The studied localities were Variaș, Șag and Pădureni. The age of the pigs in the study was between one and six months. The studied pigs breeds were Landrace (105 samples) and Vietnamese (4 samples). The samples were collected from extensive (29 samples) and the intensive system (80 samples). The samples were examined by the method of staining with Lügol solution and by Willis method. In extensive system: after analyzing the 29 fecal samples, by means of Lügol method there were identified six positive samples (20.68%); in Șag locality, two were positive for *Giardia* spp., out of which a sample was associated with *Ascaris suum*; by Willis method there were identified five positive samples with *Balantidium coli* (35.71%), five positive samples with *Oesophagostomum dentatum* (7.14%) and a sample was identified associated with *Oesophagostomum dentatum* associated with *Balantidium coli* (7.14%); in Variaș area, four were positive for *Giardia* spp. (26.66%) and by Willis method three samples were found positive with *Ascaris suum* (20%) and five samples with *Balantidium coli* (33.33%); the most responsive age to *Giardia* spp. infestation was considered to be one of a month, with a positivity of (13.79%), followed by the one of three months 6.89%). In intensive system in Pădureni place, from the 80 samples examined by Lügol solution method no *Giardia* spp. was identified and by Willis method there were identified 31 samples with coccidia (38.75%), seven samples with *Balantidium coli* (8, 75%) and eight samples with coccidia associated with *Balantidium coli* (10%).

Key words: *Giardia*, pigs, extensive system, intensive system.

EVALUATION OF ANTIMICROBIAL RESISTANCE OF SHIGA-TOXIN PRODUCING *E. COLI* ISOLATED FROM CATTLE

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Summary

E.coli is a bacterium which commonly colonizes the human and animal digestive tract but in some cases depending on its toxicity can cause a series of severe diseases. The most common contamination in humans is through consumption of infected food or water. The aim of our study was to assess the risk of contamination with resistant Shiga-toxin producing *E.coli* in a particular beef production chain. The study was conducted on 35 fecal samples, taken from the lairage area of the slaughterhouse and 35 samples taken from the carcasses after the slaughtering of the animals. The isolation was performed according to the international standard (ISO 16649-2/2007) and the toxicity assessed by PCR method (Stx1 and Stx2 genes). Following the isolation of the bacteria, its resistance to antibiotics was evaluated through disk diffusion method and PCR, the investigated genes including tet(A), tet(B), dfrA1, sul1, qnrA. The results showed a high prevalence of Shiga-toxin producing *E.coli* in the fecal samples investigated (80%) compared to the ones isolated from meat (14.28%). The antimicrobial resistance patterns revealed that 64.28% of the *E.coli* was multidrug resistant (resistant to more than three antibiotics). Also, all the isolates were found positive for one or more antibiotic resistance genes. Our study high lightened the fact that the hygiene practices during the slaughtering processes are crucial in the prevention of meat contamination with resistant Shiga-toxin producing *E.coli*.

Key words: *E.coli*, toxicity, meat, fecal, slaughterhouse

EPIDEMIOLOGICAL ASPECTS OF MORTALITY IN FATTENING PIGS

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Summary

In the paper are presented the results obtained from the analysis of the mortality in fattening pigs, highlighting epidemiological aspects. The investigations were carried out in two pig farms practicing the intensive growth system. The analysis of cumulative mortality, show that in the first period of growing-finishing (4 -11 weeks of life) enteric diseases were prevalent infectious causes that led to losses. In the second part of growing-finishing (weeks 12-24 weeks of life) respiratory diseases were prevalent causes of mortality in both farms. A lower early cumulative mortality is associated with lower late mortality, which ultimately leads to lower cumulative mortality throughout the growing-finishing period in pig production.

Key words: cumulative mortality, epidemiological aspects, pig production

DYNAMICS AND PREVALENCE OF *CULICOIDES* SPP. IN 2014 IN TIMIS COUNTY

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Summary

Climate changes in the past years had and still have important and immediate effects on distribution and abundance of insects.

Culicoides-borne diseases have been an important part of veterinary epidemiology over the past decade, the accelerated occurrence of bluetongue, African horse sickness or epizootic haemorrhagic disease in Europe having major economic consequences. Bluetongue in domestic and wild ruminants has been the most important so far. Therefore, it is essential to identify the distribution, dynamics and prevalence of *Culicoides* in every country.

Based on the fact that in 2014 the first bluetongue outbreak in Romania has been reported and on the continuously changing climate, a study was conducted in Timiș County during May-October 2014, which aimed capturing, identifying and tracking of *Culicoides* dynamics and prevalence in this area.

CDC Ondestepoort mobile light traps have been used and placed in different areas of the Timiș County. In total 32 samples were taken, in six months of study. In addition, abiotic parameters monitoring was performed (minimum temperature, maximum temperature, relative humidity and wind speed/velocity) and observing their influence on *Culicoides* population dynamics and prevalence.

Following this research a total of 9684 diptera was captured, which identified three species having the role of potential vectors for bluetongue, namely *Culicoides obsoletus* 2560 (26.44%), *Culicoides pulicaris* 1657 (17.11%) and *Culicoides nubeculosus* 1426 (14.73%) and 4041 individuals from other species of diptera (41.72%).

Based on data obtained in this study and comparing to the ones obtained in 2013 we can consider that all the variations of abiotic factors monitored have a major role in the variability of the total number of insects and disease outbreaks.

Key words: culicoides, biting midges, bluetongue, climate factor

**OUTBREAK OF PSEUDOMONAS IN HORNED VIPER
(VIPERA AMMODYTES) FARM**

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Summary

Horned viper (*Vipera ammodytes*) is a species that is found in Eastern Europe in calcareous soil areas and sparse vegetation, being recognized as one of the species most toxic venom of *Viperidae* family. Particular chemical composition of the venom of this species increased interest in pharmaceutical and cosmetic industry, leading naturally to the development of farms in order to obtain large amounts of raw venom. Maintaining this species in captivity and operational conditions for the production of venom causes major changes in immune status and allow engraftment of opportunistic bacterial pathologies that develop.

In this context a farm horned viper (*Vipera ammodytes*) were recorded more fatalities consecutive short intervals of time. Complex investigations were initiated: necropsy vipers in maximum 1-2 hours after exitus, complex anatomical and histopathological investigations and the microbiological analysis by different methods (classical and rapid techniques). Following microbiological investigations of all cases recorded lethal *Pseudomonas aeruginosa* was isolated. Subsequently, the same pathogen was isolated and clinical signs, the samples analyzed are represented by gum scraped, oro-pharyngeal exudates and profound rectal swabs. Antibigrams were performed based on the results obtained being established appropriate antibiotic therapy and medication associated with fluids-therapy adjuvant in severe cases associated with anorexia intervening including gavage (force-feed).

Key words: horned viper, pseudomonoses, diagnostic, therapy.

A COMPARATIVE EVALUATION OF MAREK'S DISEASE EPIDEMIOLOGY ON LIGHT *VERSUS* HEAVY BREED CHICKEN FARMS

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Summary

Marek's disease, spread worldwide, is a lymphoid neoplasm caused by the highly contagious oncogenic strains of chicken herpes virus. Despite the vaccination programs to control the disease with attenuated or non-pathogenic MDV strains, the virus is still spreading and field strains continue to evolve towards pathotypes of greater virulence, with significant economic losses in poultry raising countries. The study aimed to compare the epidemiology of Marek's disease over a period of three years on two different chickens farms, raising heavy and light breeds, 127 to 182 days respectively. The mortality due to Marek's disease was compared with that caused by other infectious diseases and also that subsequent to other causes. During the first year, Marek's disease caused the death of 23.15% of the total of 4.3% dead from all causes in the light breed and 28.32% out of the total of 4.9% from all causes in the heavy breed. Due to vaccination, the percentage decreased to 7.39 of the total of 2.72% of death of all causes in the light breeds as opposed to 17.88% of the total of 3.23% of death of all causes in the heavy breeds. In the last year of the study, the mortality was similar to the previous year (7.61% from overall death of 2.38%) in the light breed and significantly ($p < 0.05$) decreased in the heavy breed (5.22% of the overall 5.61%), when compared with the first year. The results indicated a better influence of the vaccination on the heavy breed farm than on the one raising the light breed.

Key words: Marek's disease, mortality, lethality, control

AN ESTIMATE OF THE RECIPROCAL RELATIONSHIP BETWEEN INNATE AND ADAPTIVE CELL MEDIATED RESPONSES IN HENS INFECTED WITH MAREK'S DISEASE HERPESVIRUS

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Summary

Since its first description a century ago and the identification of the inducing Herpesvirus in the '60s, numerous researches tackled Marek's disease in chickens. Modern genetic analyses assisted the clarification to some extent of the susceptibility and also resistance mechanisms to the disease. Nevertheless, neither Marek's disease pathogenesis nor the immune response of the host and the neoplastic changes are well understood. This study aimed to investigate the reciprocal relationship of white cell categories involved in the non-specific and specific immune responses, ie, heterophiles and lymphocytes. The *in vitro* carbon particle inclusion and blast transformation tests were carried out on heparinized (50IU/ml) blood, collected from Rosso layers from a conventional farm, 11 days apart, during the clinical course of a naturally occurring Marek's disease episode. Phagocytic activity index was calculated as the difference between the natural logarithms of the optical densities of the phagocytosis at 0–30 min divided by time (30 min). The blast transformation index (SI%) was calculated based on a spectrophotometrically read glucose consumption test, against the initial glucose concentration of the RPMI 1640 culture medium.

The results indicated a distinctly significant ($p < 0.005$) increase of the phagocytosis over the 11 day interval, from 0.89 ± 0.55 to 1.4 ± 0.46 . Simultaneously, the blast transformation capacity of the cells decreased as the disease evolved (75.16 ± 15.61 , at the first sampling; 63.07 ± 13.68 , respectively). There was a non-significant, but positive correlation ($r = 0.19$ and $r = 0.3$, respectively) between the phagocytic index and the stimulation index at both the first and the second samplings, indicating rather the independence than a correlated development of the two indicators. The data supported the importance and changes in the innate and adaptive cell-mediated immunity during the clinical development of the Marek's disease.

Key words: Marek's disease, layers, phagocytosis, blast transformation, correlation

**THE CHARACTERIZATION OF SOME STRAINS OF
STAPHYLOCOCCUS ISOLATED FROM DOGS FROM RURAL
AREAS**

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Summary

In the paper are presented in order to investigate the prevalence of staphylococcus isolated from dogs of all ages from two villages in the west part of Romania. We also tested the sensibility of these microorganisms to some of the most common used antibiotics.

The samples were obtained from adult dogs and puppies, males and females, found in two villages from Timis county. Animals selected for this study had no known history of previous antibiotic treatment.

The samples were identified and labeled as to source, gender of the dog and also the anatomical area from where they were taken.

For this experiment we obtained 86 samples from different anatomical sites such as nose, ears and skin.

After growth, staphylococcus isolates were identified according to their characteristics as outlined in Bergey's Manual of Determinative Bacteriology and the Manual of Clinical Microbiology. 63 samples were positive for staphylococcus, being isolated both positive and coagulase-negative species. The most common species that was isolated was *S. (pseudo)intermedius*.

Key words: staphylococci, dogs, countryside, Romania

**THE CHARACTERIZATION OF SOME STRAINS OF
STAPHYLOCOCCUS ISOLATED FROM DOGS FROM URBAN
AREAS**

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Summary

In the paper are presented the results obtained in order to investigate the prevalence of *Staphylococcus* isolated from dogs in the west part of Romania and also the sensibility of these microorganisms to some antibiotics.

The samples were obtained from adult dogs of both gender submitted to the University Veterinary Clinics Timisoara and also from dog pounds in the county.

The samples were identified and labeled as to source, gender of the dog and also the anatomical area from where they were harvested. We obtained 21 samples from nose, ears and skin. After growth, staphylococcal isolates were identified according to their characteristics as outlined in Bergey's Manual of Determinative Bacteriology and the Manual of Clinical Microbiology. From the total samples 14 samples presents the characteristics of genus *Staphylococcus*, the most common species that were isolated were *S. aureus* and *S. intermedius*. Also there were 3 samples that couldn't be certainly identified; probably they were *S. pseudointermedius*, due to their cultural characteristics.

Key words: staphylococci, dogs, urban areas