

A COMPARATIVE EVALUATION OF CARRIED BACTERIAL STRAINS IN SHEEP AND GOATS RAISED IN A MIXED HEARD

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Summary

Most of carried bacterial flora is found in respiratory and digestive tract of healthy animals or humans and exerts no pathogenic effect under physiological circumstances. When favoring factors induce immune suppression, apparently harmless strains can become highly pathogenic for animals and consumers or people who work in animal sector. The aim of the study was to identify and compare ported digestive and respiratory bacterial strains from goats and sheep cohabiting in a mixed heard. The research was carried out on 30 healthy animals (15 goats and 15 sheep) from the same heard. Nasal and rectal samples were cultured on glucose agar and on special media (McConkey, Chapman) and subsequently the isolates were identified by use of API 20 E and API 20 Staph biochemical tests. Bacterial isolates from sheep respiratory tract were *Erwinia spp.*(22%), *Serratia liquefaciens* (8%), *Serratia marcescens* (13%), *Serratia ficaria* (9%) *Staphylococcus xylosus* (22%), and *Enterobacter cloacae* (26%). The majority of bacterial isolates from goats' respiratory tract consisted of *E. coli* strains (54%) while other strains were similarly represented (*Serratia liquefaciens* 20 %, *Serratia marcescens* 13%, *Staphylococcus xylosus* 13%). *E. coli* prevailed in isolates from the digestive system of both sheep (67%) and goats (62%), the rest of bacterial strains being in sheep *E. vulneris* (17%), *Serratia marcescens* (11%), and *Staphylococcus xylosus* (5%) and *Staphylococcus xylosus* (24%), *E. vulneris* 5% and *Enterobacter cloacae* (9%) in goats. Interestingly, bacteria of fecal origin such as *E. coli* were identified in the respiratory system of goats but not of sheep, while *E. cloacae* strains were represented in the respiratory tract of sheep but not of the goats. Although the flock was of mixed species, there were differences between the bacterial isolates, suggesting differentiated susceptibility and feeding behavior in these species. Nevertheless, the carried bacterial isolates from clinical healthy goats and sheep could exert pathogenic effects under stressful circumstances, underlining the importance of early identification of pathogens and the accurate sanitary management of the heard.

Key words: bacterial population, sheep, goats, respiratory tract, digestive system

RESPIRATORY AND DIGESTIVE BACTERIA ISOLATED FROM HEALTHY GOATS AND THEIR RESPONSE TO COMMON ANTIBIOTICS

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Summary

Healthy products and production increase at adequate price is the aim of a modern farmer, goat farmers being no exception. For better productive results, breeders use standard prophylactic measures to reduce losses and increase profits. The extensive system of raising goats represents both a tradition and a cheaper farming model. The aim of the study was to identify porting bacterial strains from nasal cavities and rectum (final segment of digestive system) and to evaluate their response to common antibiotics. The experiment was carried out on 10 healthy goats aged 2 to 6 years, randomly chosen from the herd. Samples were collected from both the upper respiratory and from the digestive tract of the animals. Standardized laboratory protocols were used for identification Gram – and Gram + strains. Complete bacterial identification was done by API 20 E and API Staph identification kits. Bacterial isolates from the respiratory tract were *Staph. xylosus* (40%), *Enterobacter cloacae* 40%, *Pantoea spp.* 20% while from the digestive system *Staph. xylosus* 43% and *E. coli* 57% were isolated. Antibiotic sensitivity patterns were identified for each of the isolates using ampicillin (AM) 10 mcg, amoxicilin and clavulanic acid (AMC) 30 mcg, cefadroxil (CFR) 30 mcg, gentamicin (CN) 120 mcg, doxycycline (DO) 30 µg, ciprofloxacin (CIP) 5 µg, nalidixic acid (NA) 30 µg, trimethoprim-sulfamethoxazole (SXT) 25 µg, chloramphenicol (C) 30 µg, and methicillin (ME) 5 µg. General resistance to ampicilline, amoxacillin with clavulanic acid and trimethoprim-sulfamethoxazole was widespread among bacterial isolates from both respiratory and digestive system. As opposed, doxycycline, gentamicin and ciprofloxacin were highly efficient against all isolated strains. Such results could offer valuable information for farmers and veterinary practitioners in choosing adequate treatments to specific bacterial isolates and block irresponsible use of antibiotics.

Key words: microflora, respiratory tract, digestive system, goats, antibiotic sensitivity

**ANTIBIOTIC SUSCEPTIBILITY PROFILES AND VIRULENCE
FACTORS OF *LISTERIA MONOCYTOGENES* STRAINS
ISOLATED FROM MEAT**

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Summary

The emerging foodborne pathogen *Listeria monocytogenes* is an ubiquitous bacteria, widely distributed in the natural environment, contaminating numerous food products (raw meat, poultry fish, raw milk, dairy, and vegetables), as well as fast food preparations. *L. monocytogenes* is responsible for listeriosis, an illness characterized by septicaemia, meningitis, encephalitis and abortive disease (stillbirth or premature birth of the fetus). It is particularly affecting individuals with great risk, i.e.: immunocompromised, elderly, infants, and pregnant women (and their unborn children). The detection and characterization of *L. monocytogenes* in food may be an effective measure for the prevention of this severe illness. The objective of this study was to evaluate the virulence and antibiotic resistance features of 10 *L. monocytogenes* strains isolated from meat products. Antibiotic susceptibility was evaluated to 20 antibiotics currently used in veterinary and human therapy, and the enzymatic virulence factors were tested on special culture media for pore forming toxins (hemolysins, lecithinase, lipase), exoenzymes (gelatinase, amylase, caseinase, esculinase, DNase), and the adherence to HEp-2 cells. The haemolysins, caseinase and lipase were present in the majority of *L. monocytogenes* strains, which adhered to HEp-2 cells with a predominant diffuse-aggregative mixed pattern. The tested strains isolated from food-processed samples were generally resistant to cephalosporins and nalidixic acid, but remained susceptible to the antibiotics commonly used in veterinary and human listeriosis treatment.

Key words: *L. monocytogenes*, virulence factors, antimicrobial susceptibility.

**HEMATOLOGICAL CHANGES ASSOCIATED WITH ENZOOTIC
BOVINE LEUKOSIS IN CATTLE FROM TIMIS COUNTY**

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Summary

The aim of this study was to present hematologic changes associated with enzootic bovine leukosis in animals from Timis County. In this purpose, 82 biological samples (blood), obtained from bovine BLV(+) and BLV(-), were analyzed, and the following hematological parameters were counted: RBC, hematocrit, Hgb, MCH, MCHC, MCV, MPV, WBC, lymphocytes, granulocytes, monocytes and platelets. There were significant differences between BLV(+) and BLV(-) cattle, and also between aleukemic BLV(+) cattle and BLV(+) animals with persistent lymphocytosis regarding WBC and number of lymphocytes. Most BLV(+) cattle assessed were in the early stage of the disease, namely the "carrier" phase, with nonspecific clinical manifestations or hematologic changes.

Key words: enzootic bovine leukosis, hematology, leukocytes, lymphocytes

INVESTIGATION ON COMPARATIVE VALUES OF AGID AND ELISA USED IN DIAGNOSIS OF ENZOOTIC BOVINE LEUKOSIS

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Summary

The purpose of this study was to present comparative values of two serological tests, AGID and ELISA, applied in diagnosis of enzootic bovine leukosis in Timis County. 460 biological samples (sera) were assessed using *Kit for serological diagnosis of EBL* (SN "Pasteur Institute" SA, Bucharest) and *ELISA Enzootic Bovine Leukosis Virus (BLV) Antibody Test* (IDEXX Laboratories, Inc., Netherlands). For each test, it was determined the proportion of positive and negative results related to the age and breed of animals, type of growing units (households or private farms), locality, and relative to total samples examined. We also determined the quality parameters – sensitivity, specificity, positive predictive value, negative predictive value – and apparent prevalence, true prevalence, Cohen's kappa coefficient, Youden's index, and correlation between the two tests.

ELISA test allowed detection of a higher number of animals with enzootic bovine leukosis, comparing to AGID test, taken as reference. AGID does not allow detection of BLV(+) status in cattle with low titers of anti-gp 51 antibodies.

Key words: enzootic bovine leukosis, AGID, ELISA, Timis County

THE IMPACT OF THE SLAUGHTERING TECHNOLOGICAL'S FLOW STAGES ON THE *SALMONELLA* SPP. PREVALENCE

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Summary

Salmonellosis is one of the most frequent zoonosis, causing major issues worldwide. In order to manage correctly this zoonosis, related to pork products consumption, control measures must be applied simultaneously, at all production levels, from producer to consumer.

This study intended to highlight the critical stages of the slaughter, in order to reduce carcass contamination with *Salmonella* spp. Firstly, the study has focused on the microbial load from reception, by performing the microbiological examination of stool samples (collected from the waiting area). Secondly, samples were collected from the surface of the carcass during the seven steps slaughter (bleeding, scalding, plucking, scorching, polishing, evisceration, refrigeration). In order to detect *Salmonella*, the ISO 6579/2002 technique has been used. The prevalence of *Salmonella* spp. after examination was 33.3% in the waiting area, after bleeding was 86.6% and 0% after scalding and scorching. During depilation, polish and evisceration, the contamination level increased to 46.6%, 40%, respectively to 80%, in order to decrease again to 33.3% after fast refrigeration.

The results of the study show that on the waiting area, carrier pigs represent a source of infection with *Salmonella* spp. for non-carrier pigs which are slaughtered. The presence of *Salmonella* spp. on the carcass may be due to cross-contamination during slaughter.

Key words: microbiological, cross-contamination, *Salmonella* spp., slaughter.

THE INFLUENCE OF SLAUGHTERING TECHNOLOGICAL FLOW'S STAGES ON THE MICROBIAL LOAD

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Summary

This study is to highlight the checking points (bleeding, scalding, plucking, scorching, polishing, evisceration and refrigeration) concerning the microbial load of pig carcasses (*NTGMA* and *Enterobacteriaceae*) and the staff's role.

Samples have been collected from the surface of 100 carcasses, along with another 50 samples collected from the staff's equipment. These samples have been analyzed according to SR ISO 4833/2003, respectively SR ISO 21528-2/2007.

Before scalding, *NTGMA* varied between 4 and 4.5 log cfu/cm², and *Enterobacteriaceae* were found on all the carcasses (100%). The presence of *NTGMA* and of the *Enterobacteriaceae* reduced after scalding (1.1 log cfu/cm² respectively 0.2 log cfu/cm²- normal limits), after singeing (the two organisms' presence was minimum) and refrigeration ((1.0 log cfu/cm² respectively 0.5 log cfu/cm² normal limits). The prevalence increased after plucking (2.5 log cfu/cm² respectively 1.2 log cfu/cm²), polishing (1.5 log cfu/cm² respectively 0%) and evisceration (1.7 log cfu/cm² respectively 1 log cfu/cm²

Key words: carcasses, *Enterobacteriaceae*, pig, prevalence, staff.

**STUDY OF ANTIMICROBIAL RESISTANCE OF COAGULASE
NEGATIVE STAPHYLOCOCCI STRAINS ISOLATED FROM DOGS
AND CATS**

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Summary

This study aimed to determine the frequency as well as the antimicrobial susceptibility profile of coagulase negative staphylococci isolated from cats and dogs. Of the 52 skins and ear effusion samples were collected isolated 28 (53.84%) strains of coagulase negative staphylococci. The isolated strains were identified by biochemical tests and characterized by their susceptibility to antimicrobial agents. The coagulase negative species identified were as follows: *S. epidermidis* (23.07%, 12/52), *S. haemolyticus* (13.46%, 7/52), *S. chromogenes* (9.61%, 5/52) and *S. sciuri* (7.69%, 4/52). High rates of resistance to amoxicillin, penicillin G, tetracycline and lincomycin were observed, what is probably due to the frequent use of these antibiotics in veterinary practice. A 39.28% (11/28) percentage of the strains has shown multi-drug resistance. All strains were susceptible to vancomycin, ciprofloxacin, ampicillin with sulbactam, cephalixin and chloramphenicol. These results indicate the occurrence of resistant staphylococci and point to the need of careful selection of antibiotics based on results of the susceptibility testing, in order to reduce the selection of multiresistant strains.

Key words: staphylococci, coagulase-negative, dog, cat

**ANTIBIOTIC RESISTANCE OF THE *STREPTOCOCCUS CANIS*
STRAINS ISOLATED FROM DOGS**

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Summary

This investigation provided data on occurrence of antimicrobial resistance in important pathogenic bacteria from dogs, which may be useful for the small animal practitioner. Resistance was high to the compounds that were most often used, but unfortunately, these compounds were broad-spectrum. Were tested 34 strains of *Streptococcus canis* isolates from dogs with different skin disorders. Bacterial resistance was tested for susceptibility to eight commonly used antibiotics through Kirby-Bauer disk diffusion technique; using commercially available discs. No resistance was observed to ciprofloxacin, novobiocin, ceftriaxone, cefaclor, cefoxitin, pristinamycin and ampicillin/sulbactam. Drug resistance was observed toward polymyxin B (82.35% of the isolates) lincomycin (61.76% of the isolates), erythromycin (52.94%), tetracycline (50.00%), kanamycin (44.11%), gentamycin (35.29%), doxycycline (32.35%), amoxicillin/clavulanic acid (23.52%), methicillin (5.88%), rifampicin (2.94%) and vancomycin (2.94%), respectively. Data on resistance and usage may form a background for the establishment of a set of recommendations for prudent use of antimicrobials for companion animals.

Key words: streptococci, bacteria, antimicrobial, dog

**CELLS INVOLVED IN IMMUNE RESPONSE - CIRCULATING
MATURE AND IMMATURE FORMS IN CHICKEN EMBRYOS**

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Summary

The purpose of this study was to present in terms of morphometry and cariometry, all cell types, immature and mature ones, present in the blood of chicken embryos (Cobb 500 hybrids). Thus, 140 blood sample were collected daily from the jugular vein and heart of Cobb 500 chicken embryos between days 7 and 20 of incubation. Blood smears were prepared and stained using standard techniques, and cells were morphological characterized. Also measurements of the diameter and area of cells and their nucleus were made. Our study demonstrated the presence in the embryos blood of all immature and mature forms of lymphocytic, monocytic and granulocytic series. Blood cell picture of 20 days embryos shows qualitative and quantitative aspects comparable to those seen after hatching.

Key words: chicken embryo, hematology, differential blood count

HEMATOGENIC ROLE OF BONE MARROW IN CHICKEN EMBRYOS

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Summary

The aim of this study was to establish the hematopoietic role of bone marrow in Cobb 500 embryos, and also cytometric and cariometric characterization of mature and immature cells lymphocytic, monocytic and granulocytic series. In this purpose, tibia and femur were daily harvested from 135 Cobb 500 embryos, between 12th and 20th day of incubation, and bone marrow smears were prepared. Cytomorphological features of the cells that belong to lymphocytic, monocytic and granulocytic series showed bone marrow focuses mainly on erythropoiesis, thrombopoiesis, granulopoiesis, and monocytopoiesis, the involvement in lymphopoiesis being substantially lower. Thus, Bone marrow is an important organ for polymorphonuclear and monocytes maturation in chicken embryos, maintaining, even limited compared to mammals, the role of primary lymphoid organ.

Key words: Cobb 500 embryos, bone marrow, hematopoiesis

**GENERALIZED MYCOBACTERIOSIS IN A PIG RAISED FOR
FAMILIAL MEAT CONSUMPTION – A CASE STUDY**

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Summary

In Romania the pig breeding in private households constitute an old national tradition and, currently, it is widespread in rural areas. This case report describes a generalized mycobacteriosis in a household slaughtered pig, originating from Timiș County, Romania. Macroscopic examination of pig carcass and organs, such as liver, lungs and lymph nodes, revealed suggestive multifocal white-greyish coloured granulomatous alterations compatible with mycobacterial infections. The presumptive diagnosis was confirmed through microscopic examination of Ziehl - Neelsen stained smear, showing the presence of acid-fast bacilli in tissues. Occurrence of mycobacterial infection in extensively raised pig in rural areas highlighted the possible zoonotic risk for consumers from this region. Taking into account this considerations, further epidemiological studies based on molecular tools aimed to investigate a large number of animals, zoonotic potential of the implicated *Mycobacterium* species, source of the infection and risk assessment are needed. To author's knowledge, this is the single published report about the presence of mycobacterial infection in pig in the last three decades from Romania.

Key words: pig, mycobacteriosis, rural area

**ANTIBIOTIC SENSITIVITY OF SOME *SALMONELLA* SEROVARS
ISOLATED FROM MEAT AND MEAT PRODUCTS**

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Summary

Increasing antibiotic resistance of bacteria, especially of pathogens, including *Salmonella*, is a subject of global interest. Nowadays, the increasing number of *Salmonella* strains resistant to antibacterial substances is largely due to the intensive use of antibiotics. Based on these findings, in our research we targeted to highlight the sensitivity of 110 strains of *Salmonella* to antibacterial substances, strains isolated from chilled meat, minced meat and fresh sausages. Antibacterial substances studied were: amoxicillin, nalidixic acid, clarithromycin, colistin sulphate, furazolidone, gentamicin, nitrofurantoin, polymyxin B, tetracycline and trimethoprim. At the end of the experiment were found differences, most efficient antibiotics were gentamicin, ampicillin / sulbactam, trimethoprim and clarithromycin.

Key words: *Salmonella*, meat, antibiotic resistance

**MODERN METHOD - MICROFLEX LT20 EQUIPMENT - USED FOR
THE IDENTIFICATION AND CHARACTERIZATION OF
BACTERIA AND FUNGI**

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Summary

Microflex LT20 is a MALDI TOF mass spectrometer used for identification and taxonomic classification of biological agents (bacteria, fungi) from samples of air, water, soil and other surfaces after specific processing of samples. The samples to be analyzed are represented by the 16S ribosomal protein, obtained by extraction techniques dedicated to the types of microorganisms taken into study. The basic element is a MALDI TOF mass spectrometer with the mass range between 1.000 - 100.000 Da. Control of the instrument is carried out using a computer that uses Windows operating system. Data processing system controls the purchasing processes, saving and storage of spectral information, and also allows processing of information and access to databases. The external data system is connected to the main component, which allows the image transmission of the sample inside the specific compartment, zooming in and viewing the sample being essential for positioning the laser beam to obtain spectra. The external data system allows user the acquisition, processing, storage and data evaluation. The spectra obtained are compared with spectra from the database of the device. The software indicates the suitability of the spectrum obtained with the spectrum database, in the order of the scores obtained. The scores are obtained through evaluations and comparisons between spectra and do not represent a percentage.

Key words: identification, MALDI TOF, Microflex LT20, bacteria, fungi

**STAPHYLOCOCCUS SPP. ISOLATED FROM
CHEESE COMMERCIALIZED IN MARKETPLACE**

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Summary

Fifty-one samples of fresh and ripened cheese, obtained from raw milk were examined for the presence of *Staphylococcus* spp. The variation levels of staphylococci were $1,8 \times 10^3/g$ and $2,3 \times 10^7/g$, respectively. In about 50% of samples staph contamination level was between $10^6/g - 10^7/g$. The most commonly species isolated from cheese were: *Staphylococcus aureus* (35.3%), *Staph. saprophyticus* (21.5%), *Staph. hominis* (19.6%), and *Staph. haemolyticus* (13.7%). *Staph. xylosus* was identified in 3.9% cheese samples, *Staph. epidermidis*, *Staph. klosii* and *Staph simulans*, each in 1,9% of samples. A high proportion of cheese with a large number of *Staphylococcus aureus*, and a great number of cheese samples contaminated with a large percentage of another enterotoxigenic staphylococci highlighting the risk of staphylococcal food poisoning to consumers. The results obtained confirm the improper microbiological quality of raw milk used in the manufacturing of cheese, and also the unsuitable production conditions.

Key words: *Staphylococcus* spp.; cheese; market place

**IN VITRO STUDY OF ANTIMICROBIAL EFFICACY OF SOME
HUMAN AND ANIMAL TOOTH PASTE**

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Summary

The purpose of this study was to compare of the in vitro antimicrobial effect of some toothpastes used for human and animal purpose. The antimicrobial effect was tested by the agar well diffusion method against two Gram negative bacteria species (*Escherichia coli*-ATCC 25922), *Pseudomonas aeruginosa* - ATCC 27853), Gram positive bacteria species (*Bacillus cereus* -ATCC 11778, *Staphylococcus aureus* ATCC 25923) and also against a yeast specie (*Candida albicans* - ATCC 10231). All toothpastes taken in study have proved a good antimicrobial effect. Of these, those that are recommended and used for animal had an lower antimicrobial effect than those for human use.

Key words: antimicrobial effect, toothpastes

THE WELFARE OF DAIRY COWS IN TWO HOUSING SYSTEMS: ASSESSMENT OF HEALTH

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Summary

Health is an important indicator of dairy cattle welfare. The aim of this work was the assessment of health in dairy cows kept in two different housing systems. The research was accomplished in 15 dairy farms with tie-stall housing system and in 12 farms with free stalls, in Transylvania, in the period when the cows were housed. The health assessment of the 1120 milking cows (601 kept in tie-stalls and 519 in free stalls) was based on the Welfare Quality® protocol. The obtained data were statistically processed using the SPSS software (descriptive indicators, t test or the Mann-Whitney test). Significant differences ($P < 0.05$) were found for the mean score of the welfare principle Good health between the two housing types. Significantly higher scores ($P < 0.001$) were recorded in the free stall farms than in those with tie-stalls for two criteria (Absence of injuries and Absence of diseases) of the three included in this principle. Based on the scores obtained for the criterion Absence of injuries, the farms with tie-stalls were classified in three welfare categories (acceptable, enhanced and excellent) and those with free-stalls in two categories (enhanced and excellent). All the free stall farms obtained excellent scores for the criterion Absence of diseases, while the farms with tethered cows had acceptable, enhanced and excellent scores. In both housing systems unacceptable scores were recorded for the criterion Absence of pain induced by management procedures. The scores for the principle Good health classified the tie-stall farms and those with free housing in only two welfare categories, acceptable and enhanced. This research indicated significant differences between the two housing systems regarding the Good health welfare principle. According to the results obtained in this study, the health status of the dairy cows is better in the farms with free stalls than in those with tie-stalls.

Key words: Welfare Quality® protocol, dairy cow, health assessment

**DETECTION OF STAPHYLOCOCCAL ENTEROTOXINS IN
SAMPLES OF CHEESE SOLD ON FREE MARKET**

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Summary

Milk products (especially chesses) are frecvently associated with staphylococcal food intoxications. Sometimes, the lack or poor control on free market allow products containing staphylococcal heat stable enterotoxins, to reach the consumer's table. The aim of this study was to screen different types of cheese sold in three county of free market in order to detect the staphylococcal enterotoxin. 51 samples of cheese (made from raw milk of cow, goat and sheep) were analyzed between March 2012 and January 2013. Enterotoxin production A, B, C, D și E was determined by enzyme linked fluorescent assay (ELFA) using a MiniVIDAS system. One of the analyzed samples was positive to concentrations of the toxins detected by this technique. It is emphasized that the presence of staphylococcus enterotoxins in cheese sold on free market be regarded as a potential risk for human health.

Key words: staphylococcal enterotoxins, cheese, free market

BURSA OF FABRICIUS DEVELOPMENT AND COLONIZATION

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Summary

The bursa of Fabricius is a lymphoid organ of all species of birds and it was first described by Hieronymus Fabricius in 1621. The function of the bursa remained a mystery until 1954, when Bruce Glick conducted an experiment on normal and bursectomized birds about production of antibodies against *Salmonella*, showing the implication of this organ in humoral immunity. Bursa of Fabricius, originally an ecto-mesodermal rudiment, is colonized by hematopoietic cells of extrinsic origin. Primordial bursa can be found on the fourth day of incubation as an epithelial bud in the cloacal region. Colonization of bursa is an ongoing process which takes place between 8th and 14th day of incubation.

Key words: bursa of Fabricius, development, B cells

**DEVELOPMENT OF SECONDARY LYMPHOID ORGANS IN
CHICKEN EMBRYOS – SPLEEN AND GUT ASSOCIATED
LYMPHOID TISSUES**

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Summary

This study aims to systematically assess the histogenesis of spleen and GALT in chicken embryos between 4th and 20th day of incubation. Thus, 85 embryos were histological processed (whole embryos or only spleen and bowel segments), and histological section were made and stained. Microscopic examination aimed daily morphological aspects and changes for spleen and gut associated lymphoid tissues (GALT). Spleen primordium was identified in the 5th day of incubation, and the organ showed a marked growth between 13th and 20th day of incubation, correlated with the embryos development. Splenic parenchyma has uniform structure, without connective trabeculae or obvious demarcation between white and red pulp, up to and including day 20 of incubation. GALT histogenesis begins in the 17th day of incubation.

Key words: Cobb 500 embryos, spleen, gut-associated lymphoid tissues

THE IMPACT OF THE TECHNOLOGICAL FLOW ON PIG CARCASS QUALITY

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Summary

The carcass quality of 727 000 pigs butchered during May 2012 until January 2013 was studied, evaluating femur and basin fractures. The study was performed on fat pigs coming from five genetic lines (A - E) and values ranging from 16 % (B) to 31 % (C). Proportional to the weight increase in live pigs (122.56 kg) increased the fracture percent (C), of which 55% were femur fractures.

No connection was established between animals limping or with movement difficulties and animals diagnosed with basin or femur fractures.

Animals coming from the C line were observed to be predisposed to femur and basin fractures, a direct correlation between the large weight of live animals and the femur fracture percentage.

Key words: pig, carcass evaluation

INFECTIOUS BURSAL DISEASE VIRUS – A SYSTEMATIC REVIEW

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Summary

Infectious bursal disease virus (IBDV) belongs to *Birnaviridae* family, *Avibirnavirus* genus and is the etiological agent of infectious bursal disease. Birds are the only species that develops clinical signs and lesions if are exposed to IBDV. Chicken is the natural host, subclinical infection being recorded in turkey and duck; quail and dove are resistant to experimental infection. Field strains develop different degrees of pathogenicity in chickens and vaccine strains also have infectious potential in chickens. There were isolated many strains that differ from each other in terms of antigenicity and virulence, in Europe and the USA being identified two serotypes of IBDV. The first one, serotype 1 is pathogenic, but serotype 2 is non-pathogenic both for chickens and turkeys.

After infection, humoral immune response against IBDV virus develops normally, but the response to other antigens is significantly reduced. The degree of immunosuppression is proportional to the age of infected birds: poultry older than 21 days do not develop significant lesions in lymphoid tissues and develop a normal immune response after passing through disease, but in birds less than 21 days old, humoral and cellular immunosuppression, and also the damages in lymphoid tissues, are extensive.

Key words: infectious bursal disease virus, pathogenicity, immunogenicity

RESEARCH ON IMPLICATION OF SOME CYTOKINES IN ENZOOTIC BOVINE LEUKOSIS

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Summary

The aim of this study was the assessment of interferon γ (IFN- γ) and interleukin 10 (IL-10) levels in cattle with enzootic bovine leukosis from Timis County households. To determine serum concentration and dynamics of the two cytokines, were analyzed 82 biological samples (sera) obtained from EBL+ (n = 27) and healthy cattle (n = 55). Sera were assessed by applying quantitative immunoenzymatic techniques, using *Bovine Interferon γ (IFN- γ) ELISA Kit* and *Bovine Interleukin 10 (IL-10) ELISA Kit* (Cusabio Biotech, P.R. China).

Concentration of the two cytokines were significantly higher ($p \leq 0.001$) in BLV(+) cattle compared with BLV(-) animals. Given IFN- γ concentration, we could distinguish three categories of BLV(+) cattle: cattle with low IFN- γ level, below 20 pg/ml (5.75 ± 2.06 pg/ml, n = 10); cattle with average IFN- γ values, between 20 and 40 pg/ml (33.13 ± 5.67 pg/ml, n = 6) and cattle with high IFN- γ level, 60 pg/ml (86.90 ± 16.85 pg/ml, n = 11). These groups of cattle have inversely proportional values of IL-10, respectively IFN- γ low values were correlated with high IL-10 concentrations (67.25 ± 19.36 pg/ml) and high values of interferon with reduced concentrations of interleukin (10.67 ± 6.62 pg/ml).

Concentration of assessed cytokines is influenced by the enzootic bovine leukosis stage. IL-10 can inhibit the expression of other proinflammatory cytokines with antiviral activity, favoring the transition to persistent lymphocytosis stage.

Key words: enzootic bovine leukosis, IFN- γ , IL-10, ELISA

**ANTIMICROBIAL SUSCEPTIBILITY OF BIOFILM FORMING
BACTERIA FROM ORAL CAVITY IN DOGS**

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Summary

The occurrence and antimicrobial susceptibility of *Staphylococcus*, *Streptococcus*, *Pasteurella* and *Neisseria* strains collected from supragingival sites in dogs were evaluated. From 33 dogs with dental plaque were identified 10 strains of *Staphylococcus*, 22 of *Streptococcus*, 24 of *Pasteurella* and 14 of *Neisseria*. We have selected 10 strains of *Staphylococcus*, 10 of *Streptococcus* and 11 of *Pasteurella* and *Neisseria* in order to determine the antimicrobial susceptibility. All strains were susceptible to most of the antibiotic tested, however different resistance rates to different antibiotics among strains were observed. The role of *Staphylococcus*, *Streptococcus*, *Pasteurella* and *Neisseria* strains from oral cavity of dogs in biofilm formation is needed to be defined in order to prevent the appearance and evolution of other dental diseases of oral cavity such as dental calculus, dental caries and periodontitis.

Key words: antimicrobial susceptibility, biofilm, dental diseases, plaque

**IDENTIFICATION AND CHARACTERIZATION OF BIOFILM
FORMING BACTERIA IN ORAL CAVITY OF DOGS**

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Summary

Research over the past decade has led to the recognition of dental plaque as a biofilm, a well organized accumulation of microbial communities attached to an environmental surface. The oral cavity may act as a reservoir for several pathogens related to local and systemic infections. Therefore, the aim of this study was to identify the microorganisms found in oral cavity of dogs and to determine the prevalence of pathogenic isolates. The study reveals the prevalence of 2 bacterial strains that can form supragingival biofilm in oral cavity of 33 dogs: *Staphylococcus* and *Streptococcus*. The characterization of these strains was made by using standard procedures of bacterial culture and identification was made by Vitek 2 (BioMérieux, France).

Key words: bacterial strains, biofilm, dental plaque, microorganisms.