

## ASSESSMENT OF MOUSE EMBRYO VIABILITY BY ESTERASIC ACTIVITY DETECTION

### EVALUAREA VIABILITĂȚII EMBRIONILOR DE ȘOARECE PE BAZA ACTIVITĂȚII ESTERAZICE

ALEXANDRA BOLEMAN, ADA CEAN, V. CARABĂ, N. PĂCALĂ

*Faculty of Animal Sciences and Biotechnologies, Timisoara  
alexandraivan@animalsci-tm.ro*

*In order to evaluate the esterasic activity within the viable embryos we used the Fluorescein diacetate (FDA) staining test. For staining was used a 0.5 mg/ml FDA stock solution. The embryos were recovered at 48 hours post coitus from superovulated Swiss mouse females. Before staining the embryos were microscopically evaluated by morphological criteria and classified in 4 quality codes. The two methods used for quality and viability assessment were correlated applying Pearson coefficient. The calculated value of the Pearson coefficient ( $r=1$ ) showed a strong correlation between the two methods used and indicate FDA staining test and esterasic activity as a fast, easy and reliable method for embryo viability assessment.*

**Keywords:** embryo, viability, FDA, esterasic activity

## RESEARCHES REGARDING THE INFLUENCE OF THE NUMBER OF CUMULAR CELLS LAYER OVER THE OOCYTE MATURATION EFFICIENCY

### CERCETĂRI PRIVIND INFLUENȚA NUMĂRULUI DE STRATURI DE CELULE CUMULARE ASUPRA EFICIENȚEI MATURĂRII OVOCITELOR

V. CARABĂ, I. VINTILĂ, ALEXANDRA IVAN, ADA TELEA, D. MĂNDIȚĂ

*Facultatea de Zootehnie și Biotehnologii Timisoara, Romania*

*During the experiments we have carried out with immature oocyte collected from the ovarian follicles, we found a variety of oocyte-cumulus complexes. We got the following experiment in order to understand the role of cumular cells on the achievement of the cytoplasm and oocyte nucleus maturation. We select the oocyte-cumulus complexes collected both from cows and sows according to the number of cumular cell layers and we watched their development to the blastocyst stade. Thus, we achieved three groups of COC (oocyte-cumulus complexes).*

*One group was made of oocyte without cumular cells, the second group had a layer of cumular cells and the third group had many layers of cumular cells. we performed an incubation of all these types of COC in TCM-199 enriched with 20% of bovine fetal serum. Because only 1,2 oocyte of the ones who lack the cumular cells layer had maturation signs during cultivation in the thermostat versus 55 and 115, respectively, of the ones that had many cellular layers, presents a solid evidence that cumular cells are indispensable for the maturation and even to the fecundation process. The cumular cells perform a decisive role on the cytoplasm and oocyte nucleus maturation process.*

**Keywords:** oocyte-cumulus complexes (COC), bovine, swine, IVM

## RESEARCHES REGARDING THE INFLUENCE OF RECOVERY MEDIA ON THE IN VITRO DEVELOPMENT CAPACITY OF THE PREIMPLANTATIONAL MOUSE EMBRYO

### CERCETĂRI PRIVIND INFLUENȚA MEDIULUI DE RECOLTARE ASUPRA CAPACITĂȚII DE DEZVOLTARE IN VITRO A EMBRIONILOR PREIMPLANTAȚIONALI DE ȘOARECE

ADA CEAN, N. PACALA, ALEXANDRA BOLEMAN

Faculty of Animal Sciences and Biotechnologies, Timisoara, [telea\\_ada@animalsci-tm.ro](mailto:telea_ada@animalsci-tm.ro)

*Phosphate Buffered Saline with 0.4% BSA and M2 medium are one of the most common media used in embryo recovery. The aim of our paper was to investigate if the recovery media used for the recovery of the mouse embryo is influencing in vitro developmental capacity. As biological material we used 10 used were mouse females, age 2 months superovulated with 5UI PMSG (Pregnant Mare Serum Gonadotropine) and 5 UI hCG (human Corionic Gonadotropine). The embryos used were recovered, by oviduct flushing, at 24 hours from the identification of the vaginal plug. The majority of the embryos (78.3%) were in two cells stage. A total of 123, 2 cells embryos were cultivated in M16 medium. The evolution of the embryos was examined at 24, 48 and 72 hours interval. The proportion of hatched blastocyst was higher at the embryos recovered with M2 (53.7%) compared with the embryos recovered with PBS 0.4% BSA. The difference is statistically very significant ( $p < 0.001$ ). Embryos recovered in M2 media have a higher in vitro developmental capacity compared with the embryos recovered in PBS media supplemented with 0,4% BSA, possibly because of the sodium bicarbonate and lactate used in M2 media for pH regulation.*

**Keywords:** embryos, recovery media, M2, PBS-0,4%BSA, hatching rate

### STUDII PRIVIND PROPRIETĂȚILE CRIOPROTECTOARE ALE MEDIILOR DE VITRIFICARE CU ETILEN GLICOL, SUCROZĂ, FICOLL70 ȘI GALACTOZĂ UTILIZATE ÎN CRIOCONSERVAREA EMBRIONILOR DE MAMIFERE

### STUDIES REGARDING THE CRIOPROTECTIVE PROPRIETIES OF THE VITRIFICATION MEDIA, WITH ETHYLENE GLYCOL, SUCROSE, FICOLL 70 AND GALACTOSE USED IN MAMMALIAN EMBRYO CRYOPRESERVATION

ADA CEAN, N. PĂCALĂ, ALEXANDRA BOLEMAN

Faculty of Animal Sciences and Biotechnologies, Timisoara, [telea\\_ada@animalsci-tm.ro](mailto:telea_ada@animalsci-tm.ro)

*Crioprotectors are the main component of any vitrification media. The penetrant crioprotectors are essential for cell dehydration and for the decrease of the freezing point of the solution, allowing a longer time for dehydration to set in. The aim of our paper was to make a series of experiments in order to determine the concentration at which four cryoprotectants (ethylene glycol, sucrose, Ficoll 70 and galactose) singly and in pairs would vitrify on plunging into liquid nitrogen and remain vitreous when thawed in water bath. A total of 156 solutions were tested. During freezing, vitrification was evidenced by the formation of transparent glass when the unsealed straws were plunged into liquid nitrogen, at -196°C. Crystallization (ice formation) resulted in a milky appearance. Solutions that vitrify on freezing were tested if they remain vitreous on thawing. For thawing we tested three temperatures 20°C, 25°C and 37°C. During thawing, solutions that did not devitrified were transformed from solid clear state to the liquid state without evidence of a milky appearance. From the combinations of two cryoprotectors were tested a number of 51 solutions vitrify on freezing (19 solutions with ethylene glycol and galactose; 19 solutions with ethylene glycol and sucrose; 13 solutions with ethylene glycol and Ficoll). The ethylene glycol and galactose pair give the best results on thawing (3 combinations remained vitreous on thawing) at 37°C.*

**Keywords:** crioconservation, vitrification, ethylene glycol, galactose, sucrose, Ficoll70

## **FROM GENE TO PROTEIN – CLONING, EXPRESSION AND PURIFICATION OF A P450 CYTOCHROME FROM *Campylobacter jejuni***

### **DE LA GENA LA PROTEINA – CLONAREA, EXPRESIA SI PURIFICAREA UNUI CITOCROM P450 DIN *Campylobacter jejuni***

N. CORCIONIVOSCHI

*University College Dublin, School of Medicine and Medical Sciences, Belfield, Dublin 4, Ireland*

*Recently, the complete genome sequence of *Campylobacter jejuni* NCTC 11168 was published revealing the presence of only one open reading frame (Cj1411c) encoding for a cytochrome P450, in contrast to 20 found in *M. tuberculosis*. The gene Cj1411c encodes for a soluble 52.6 kDa protein with a predicted isoelectric point of 9.3. The P450 gene is part of reading frame which hosts genes involved in the synthesis of cell surface components (capsula). *Campylobacter* capsule are important in adherence, invasion and colonisation of host cells and for maintenance of cell surface charge and serum resistance. These capsules are thought to cause autoimmunity leading to Guillain-Barre and Miller-Fischer syndromes. The structure of the lipooligosaccharides and capsule polysaccharide was published last year revealing that the strain possessed a type II/III capsule locus found in other microorganisms such as *Neisseria meningitidis*. This project focuses on the cloning and characterisation of the only P450 enzyme of the human pathogen *Campylobacter jejuni* NCTC 11168. We aim to understand the metabolic role of this P450 cytochrome in order to elucidate its possible use as a new target for drug design. To achieve this aim we have cloned, expressed and purified the product of P450 coding gene.*

**Keywords:** cytochrome P450, cloning, expression, purification

## ***Campylobacter jejuni* - A MONOGRAPHIC STUDY (REVIEW)**

### ***Campylobacter jejuni* – STUDIU MONOGRAFIC**

N. CORCIONIVOSCHI<sup>1</sup>, D. DRINCEANU<sup>2</sup>, LAVINIA ȘTEF<sup>2</sup>, C. JULEAN<sup>2</sup>

<sup>1</sup>*University College Dublin, School of Medicine and Medical Science Dublin, Ireland, nicolae.corcionivoschi@ucd.ie*

<sup>2</sup>*Faculty of Animal Sciences and Biotechnologies, Timisoara, Romania*

*Campylobacter is the primary cause of bacterial diarrhoeal illness in the developed world with an estimated 2-3 million *Campylobacter*-related illnesses occurring in the United States per year. *Campylobacter jejuni* can cause a spectrum of disease including gastroenteritis, proctitis, septicaemia, meningitis, abortion and autoimmune diseases such as Reiter's arthritis and Guillain-Barré syndrome (GBS). The association of *Campylobacter* with poultry (e.g. chickens, turkeys, ducks, and geese) has been known for the last 30 years). In this review we will present the biology of this organism as presented for the last two decades and also the connection between *Campylobacter jejuni* and farm animals.*

**Keywords:** *Campylobacter jejuni*, disease, reservoirs

## MICROBIAL HYDROLASES IMMOBILIZED ON POROUS MATRICES

### HIDROLAZE MICROBIENE IMOBILIZATE PE MATRICI POROASE

MONICA DRAGOMIRESCU<sup>1</sup>, T. VINTILĂ<sup>1</sup>, GABRIELA PEDA<sup>2</sup>

<sup>1</sup>Faculty of Animal Sciences and Biotechnologies, Timișoara, România, [mdragomirescu@animalsci-tm.ro](mailto:mdragomirescu@animalsci-tm.ro)

<sup>2</sup>Faculty of Chemistry-Biology-Geography, Timișoara, România

*Starch degrading enzymes are used as feed additives to increase the digestibility of corn meal based diet in livestock and poultry. To be efficient, these enzymes have to present a good activity and stability. Immobilization by physical bonding of enzymes on a porous support is a simple and efficient method to preserve enzyme molecules in an active form and retain their activity for a period of time.*

*The aim of this study was to stabilize an enzymatic preparation with amylase activity produced by a native strain of *Bacillus amyloliquefaciens* in submerged culture. The immobilization technique used was physical bonding on a porous ceramic support. The enzymatic preparation with amylase activity was used in immobilization in a lyophilized form. By using the same method we immobilized also a purified *Aspergillus niger* amylase. For both enzymes, the optimal temperature and pH of the native and immobilized enzymes did not vary significantly. At temperature and pH values lower than the optimum, the relative activities have been higher for the immobilized *Bacillus amyloliquefaciens* enzyme compared to the native one. The immobilization has led to an enzymatic compound with stability at pH 3 and 37°C and in time higher than that of the free one.*

**Keywords:** feed enzymes, amylase, *Bacillus amyloliquefaciens*, *Aspergillus niger*, stabilization, physical bonding.

## RESEARCH REGARDING THE INFLUENCE OF BETA IRRADIATION ON THE ENZYMATIC ACTIVITY OF BAKER'S YEAST

### CERCETĂRI PRIVIND INFLUENȚA RADIAȚILOR BETA ASUPRA ACTIVITĂȚII ENZIMATICE A DROJDIILOR DE PANIFICAȚIE

ENIKŐ GAȘPAR

University „LUCIAN BLAGA” of Sibiu, Faculty of Agricultural Sciences, Food Industry and Environmental Protection, no. 7-9 Ion Rațiu Str., 550012, Sibiu, Romania

*The biotechnological properties and the maltase activity of baker's yeast were investigated by irradiation with beta radiations in doses of 9.76 Gy, 12.20 Gy, 17.08 Gy and 22.96 Gy. We observed that the maltase activity is greater in yeast irradiated with lower doses (9.76 Gy, 12.20 Gy and 17.08 Gy) indicating that the beta radiation have a stimulating effect on the fermenting capacity of baker's yeast. This fact is valid also after 90 days. A higher dose induces a regress of this process. The baker's yeast exposed at beta radiations produced cultures more vigorous, resistant and with higher biotechnological properties.*

**Key words:** *Saccharomyces cerevisiae*, enzymatic activity, beta irradiation.

## PHYSICO-CHEMICAL RESEARCHES REGARDING THE BIOTECHNOLOGICAL QUALITIES OF YEASTS

### CERCETĂRI FIZICO-CHIMICE ASUPRA CALITĂȚILOR BIOTEHNOLOGICE ALE DROJDIILOR

ENIKŐ GAȘPAR, LETITIA OPREAN, S. BAHCIVANGI, RAMONA IANCU, ECATERINA LENGYEL

*University „LUCIAN BLAGA” of Sibiu, Faculty of Agricultural Sciences, Food Industry and Environmental Protection, no. 7-9 Ion Rațiu Str., 550012, Sibiu, Romania*

*In the present study we monitored the evolution of the fermentative capacity of the 8 selected yeast strains *Saccharomyces cerevisiae*, under the influence of the following compounds: perhydrol, lactic acid 90%, acetic acid, chlorhydric acid, sodium chloride, ammonium chloride, magnesium chloride and sodium bisulphite. the greater number of autolysed yeast cells was obtained in case of addition of 90% lactic acid at pH 3, 0.2% sodium bisulphite and acetic acid at pH 3. The lowest number of autolysed yeast cells was obtained with 0.1% ammonium chloride, perhydrol and 0.1% magnesium chloride.*

**Keywords:** *Saccharomyces cerevisiae*, chemical substances, organic acids

## INFLUENCE OF CERTAIN BIOACTIVE PREPARATIONS ON THE DURATION OF BOAR SEMEN PRESERVATION

### INFLUENȚA UNOR PREPARATE BIOACTIVE ASUPRA DURATEI CONSERVĂRII SPERMEI DE VIER

V. HAREA<sup>1</sup>, G. DARIE<sup>1</sup>, P. CHINTEA<sup>2</sup>, ELENA MARANDICI<sup>3</sup>

*1- The state Research Enterprise for Selection and Hybridization of pigs „Moldsuinhibrid”, Orhei*

*2-Institute of Genetics and Plant Physiology of the ASM*

*3-Agrarian State University of Moldova*

*The experiences were held on the boar sperm. There were studied the bioactive substances with the role of antioxidant made at the Institute of Genetic of Science Academy of Republic of Moldova. The bioactive substances (GL-2) were used as a structure dilution GHTS what is used for boars sperm dilution with the concentration of 0,1 – 1%. The experimental researches showed that the studied substances were not toxic for sperm used in the structure of GHTS dilution with the concentration of 0,1-1 whit gave the possibility to increase the period of boar sperm stoking till 168 hours, keeping the sperms mobility at the level of standard of artificial insemination.*

**Keywords:** boar, sperm, dilution, motility, bioactive substances, antioxidant.

## **INFLUENCE OF CSN3 MARKER ON MILK COMPOSITION IN ROMANIAN BROWN AND ROMANIAN SIMMENTAL CATTLE FROM S.C.D.C.B. ARAD**

## **INFLUENȚA MARKERULUI CSN3 ASUPRA COMPOZIȚIEI LAPTELUI LA VACILE DE RASĂ BĂLȚATĂ ROMÂNEASCĂ ȘI BRUNĂ DE LA S.C.D.C.B. ARAD**

DANIELA E. ILIE<sup>1</sup>, ANUȚA MAGDIN<sup>1</sup>, AURELIA SĂLĂJEANU<sup>1</sup>,  
R. NEAMȚ<sup>1</sup>, I. VINTILĂ<sup>2</sup>

<sup>1</sup>Research and Development Station for Bovine Raising - Arad

<sup>2</sup>Faculty of Animal Science and Biotechnology, Timisoara, Romania

*Milk yield and composition in cattle are typical quantitative traits which are influenced by environmental factors and allelic variations. K-casein is a protein expressed in milk and, due to its polymorphism, may serve as a molecular marker for yield, composition and technological properties of milk. The objective of this study was to compare the relation between the genetic marker CSN3 (k-casein) and the observed milk traits in selected cattle groups. In our study we analyzed the milk traits of 32 Romanian Brown dairy cows and 54 Romanian Simmental dairy cows. The experiments described in this paper show clear evidence that -CSN3 genotype is involved in milk protein enrichment. The CSN3 gene of BB genotype showed a great influence on protein yield. The relation between CSN3 genotype and milk protein was found to be significant in both cattle breeds.*

**Keywords:** milk protein, K-casein, genotypes frequencies

## **HYDROLYSIS OF AGRICULTURAL BIOMASS BY COMBINED PRETREATMENT AND ENZYMATIC METHODS IN ORDER TO PRODUCE BIOFUELS (ETHANOL, BIOGAS)**

## **HIDROLIZA ENZIMATICA CU PRETRATAMENT A PLANTELOR ENERGETICE AGRICOLE IN SCOPUL OBTINERII DE BIOCOMBUSTIBILI (ETANOL, BIOGAZ)**

STEFANA JURCOANE<sup>1</sup>, FLORENTINA RADOI-MATEI<sup>2</sup>, RADU TOMA<sup>2</sup>, P. STELIAN<sup>1</sup>, ANCA VINTILOIU<sup>3</sup>, CAMELIA DIGUTA<sup>1</sup>

<sup>1</sup>Microbial Biotechnology Center, University of Agronomical Sciences and Veterinary Medicine, Bucharest, Romania, e-mail: [jstefana@yahoo.com](mailto:jstefana@yahoo.com)

<sup>2</sup>University of Agronomical Sciences and Veterinary Medicine, Bucharest, Romania

<sup>3</sup>State Institute of Farm Machinery and Farm Structures, University of Hohenheim, Stuttgart, Germany

*The use of energy crops (maize straw, wheat straw, barley straw etc.) as substrate for renewable energy production (e.g. biogas) is more efficient when it is degraded by different hydrolysis methods. However, fibers contained inside energy crops (e.g. cellulose and hemicellulose) are only hardly and slowly degraded by anaerobic bacteria. The slow degradation of these substances can decrease the methane yields of agricultural biogas plants. In the present study, we investigated the efficiency of combined pretreatment (different concentrations H<sub>2</sub>SO<sub>4</sub> + 30 minutes at 121<sup>0</sup>C) followed to enzymatic hydrolysis. Testing different concentration of H<sub>2</sub>SO<sub>4</sub>, good results were obtained for maize whole crop when we used combined pretreatment (3% H<sub>2</sub>SO<sub>4</sub> + 30 minutes at 121<sup>0</sup>C) followed to enzymatic hydrolysis (3.9 fold higher) and for Gavott Maize Straw when we used combined pretreatment (2% H<sub>2</sub>SO<sub>4</sub> + 30 minutes at 121<sup>0</sup>C) followed to enzymatic hydrolysis (3.6 fold higher) comparing with untreated samples.*

**Keywords:** physical pretreatment, enzymatic hydrolysis, biomass degradation

## **SISTER CHROMATID EXCHANGES IN RIVER BUFFALO FEMALES WITH CHROMOSOMAL FRAGILITY**

### **BENZI SCE LA FEMELE DE BIVOL CU FRAGILITATE CROMOZOMALA**

IOANA NICOLAE<sup>1</sup>, MARINELA ENCULESCU<sup>1</sup>, DANIELA VIDMICHİ<sup>1</sup>, M.PARASCHIVESCU<sup>1</sup>, A.BOTA<sup>2</sup>, L.HÂRCEAGĂ<sup>3</sup>

<sup>1</sup>*Research and Development Institute for Bovine Breeding, Balotesti, Romania  
E-mail: ioana\_nicolae2002@yahoo.com*

<sup>2</sup>*Research and Development Station for Buffalo Breeding, Sercaia, Romania*

<sup>3</sup>*S.C.Semtest BVN-Tg.Mures, Romania*

*Sister chromatid exchange (SCE) technique is considered a very important test to check potential damage to the DNA, expressed by chromosomal fragility and associated with high rates of SCEs. In the present study we report the preliminary results of our investigation on chromosomal fragility identified in buffalo chromosomes and the relationship with the increased SCE levels. The karyotype analyses carried out on a group of 16 river buffalo females selected and treated for hormonal stimulation and on a control group of 16 normal river buffalo females revealed that three of the treated females were found to carry a higher number of breakages/cell comparative with the control group. The mean number of SCE/cell in the three treated females was higher ( $\bar{X}=11.8$ ) than that of those observed in the control group ( $\bar{X}=7.8$ ).*

**Keywords:** buffaloes, chromosomes, sister chromatid exchanges

## **MICROBIOLOGICAL CONTROL OF GOAT MILK FROM SIBIU AREA REGARDING THE HYGIENE ASSURANCE AND FOOD SAFETY**

### **CONTROLUL MICROBIOLOGIC AL LAPTELUI DE CAPRĂ DIN JUDEȚUL SIBIU ÎN VEDEREA ASIGURĂRII IGIENEI ȘI SIGURANȚEI ALIMENTARE**

LETIȚIA OPREAN, Ș. BAHCIVANGI, RAMONA IANCU and the students researching staff for the specialisation Biotechnologies in Alimentary Industry as part of the SAIAPM Sibiu Faculty.

*University „LUCIAN BLAGA” of Sibiu, Faculty of Agricultural Sciences, Food Industry and Environmental Protection, Sibiu, Romania  
ramyl1us@yahoo.com*

*The main objective concerning food safety is touching the highest possible degree of protection for human health and consumers interests regarding the food. Because of that, we analyze goat milk from three different county and the tests were performed searching the Salmonella presence. In our tests we detect an insignificant presence of Salmonella but this microorganism can be eliminated by specific methods so the food safety will be ensured.*

**Key words:** goat milk, food safe, Salmonella

## RESEARCH STUDIES REGARDING THE BIOTECHNOLOGICAL QUALITIES OF GOAT MILK

### STUDII ȘI EFECTE PRIVIND CALITĂȚILE BIOTEHNOLOGICE ALE LAPTELUI DE CAPRĂ

LETIȚIA OPREAN, Ș. BAHCIVANGI, RAMONA IANCU, ENIKŐ GAȘPAR, ECATERINA LENGYEL

*University „LUCIAN BLAGA” of Sibiu, Faculty of Agricultural Sciences, Food Industry and Environmental Protection, Sibiu, Romania ramyl1us@yahoo.com*

*The quality and safety of the alimentary products have become a right of the consumers, with direct effects on the quality of life, and the problems based on the quality and the safety of the products is in the center of attention for organisms set up for defending the consumers interests. The milk goat tests were performed using LactoStar and ColonyStar on an effective of 90 goats in three different areas of the county of Sibiu: Rășinari, Cristian, Miercurea Sibiului. Each batch is composed of 30 goats. The test results should prevent the farmer and make him to be more attentive in milk hygiene.*

**Keywords:** analyze, milk, food safe

## STIMULAREA FUNCȚIEI DE REPRODUCERE LA VACI CU AJUTORUL PRID-URILOR

### STIMULATION OF THE REPRODUCTIVE FUNCTION IN COWS WITH PRID'S

N.PĂCALĂ<sup>1</sup>, N. CORIN<sup>1</sup>, I. BENCSIK<sup>1</sup>, D. DRONCA<sup>1</sup>, ADA CEAN<sup>1</sup>, ȘT. PAPP<sup>1</sup>, V. CARABĂ<sup>1</sup>, B. AVRAMESCU<sup>2</sup>

<sup>1</sup>*Faculty of Animal Sciences and Biotechnologies*

<sup>2</sup>*S.C. Agrosen S.A Pischia*

*PRID are frequently used in reproductive control programs at dairy cows. The aim of our paper was to synchronize the estrus and ovulations in cycling cows and to simulate the ovarian function in non-cycling cows. At 28 cows with cycling ovarian activity the duration of treatment was 7 days. After the device removal 2 ml Proliz (0.450 mg Cloprostenol) were administered. AI was performed at 72 hours after the end of the hormonal treatment and 20 (71,42 %) were diagnosed as pregnant. At the 34 anestrus cows the duration of the treatment was 10 days. With 24 hours before the redrawn of the PRID, 500 IU eCG were administered. AI was performed at 60 hours from the end of the hormonal treatment and 14 (41.17%) cows were diagnosed as pregnant. The PRID spirals can be used with success in synchronizing the ovulations in cycling cows and in anestrus therapy in non-cycling cows.*

**Keywords:** cows, PRID, ovulation synchronization, estrus inducing

## A NEW MODEL OF BOAR SEMEN EVALUATION AND THE IMPACT OF CRYOGENIC FACTOR ON SPERMATIC CELLS

### UN NOU MODEL DE EVALUARE A MATERIALULUI SEMINAL DE VIER SI IMPACTUL FACTORULUI CRIOGEN ASUPRA CELULELOR SPERMATICE

A. V. RUSU, V. MICLEA, M. ZĂHAN

*University of Agricultural Sciences and Veterinary Medicine, Faculty of Animal Husbandry and Biotechnology, Cluj-Napoca, România, e-mail: rusu\_alexandru@hotmail.com*

*Nowadays, sperm evaluation is mostly used to predict fertility and freezability. The aim of this study is to evaluate the possibility of investigating the effects of the cryogenic agent on boar spermatozoa, by identifying a set of laboratory tests for a rapid and efficient evaluation of semen quality. Usual sperm analysis such as sperm concentration, motility and spermatozoa morphology are not able to show subtle abnormalities, which are having a basic role in the fertilizing ability. Moreover, it seems that other sperm characteristics, involved in the fertilizing ability, can interfere with the freezing-thawing processes, being not evaluated or maybe not known. Morphological (microscopic analysis of stained spermatozoa), functional (motility analysis and hypo-osmotic swelling test) and chromatin integrity (Acridine Orange Test and Comet Assay) analysis were performed aiming to show the differences in spermatozoon integrity and functionality, caused by the cryogenic factor.*

**Keywords:** sperm evaluation, freezability, DNA fragmentation.

## PROSTAGLANDIN F<sub>2α</sub> SUPPLEMENTED SEMEN IMPROVES LANDRACE BOARS SPERM MOTILITY

### STUDIUL PRIVIND MOBILITATEA SPERMATOZOIZILOR CA URMARE A ADĂUGĂRII PROSTAGLANDINEI F<sub>2α</sub> ÎN MATERIALUL SEMINAL OBTINUT DE LA VIERII LANDRACE

IOANA SGURĂ<sup>1</sup>, N. PĂCALĂ<sup>1</sup>, RAMONA UNTARU<sup>1</sup>, F. NEGRUȚ<sup>2</sup>, NICOLETA IONESCU<sup>2</sup>

<sup>1</sup>*Faculty of Animal Sciences and Biotechnologies, Timișoara, Romania*

<sup>2</sup>*Smithfield Ferme, Timișoara, Romania*

*Email:tm81sgr@yahoo.com*

*This study investigated whether the sperm motility from Landrace boars improves when PGF<sub>2α</sub> (Dinolytic®; 5 mg PGF<sub>2α</sub> /ml) was added to diluted semen. Boars from one large production unit, were manually collected; semen was either enriched with PGF<sub>2α</sub> (group 1, n=38), either untreated (group 2, n=32). Total volume of semen collected, percent of motility and number of obtained doses were recorded. The highest sperm volume collected from the two groups is corresponding to ejaculates from Landrace boars with PGF<sub>2α</sub> supplemented semen (267.6 ml). Regarding motility, the sperm collected from Landrace boars with PGF<sub>2α</sub> supplemented semen was higher from the one collected from Landrace boars with untreated semen (81.37%) and very significant differences were statistically determined. The ejaculates with highest number of obtained doses is corresponding to the ones collected from boars with PGF<sub>2α</sub> supplemented semen (25.21). Only boars from the first group (with PGF<sub>2α</sub> supplemented semen) showed motility over 70% and even 100%. The untreated semen showed motility values around 65-70%.*

**Keywords:** PG F<sub>2α</sub>, semen, boar, sperm motility

## TRIAL TO CULTIVATE AND ISOLATE NEURONAL LIKE CELLS FROM 7 DAYS OLD MICE BRAIN

### ÎNCERCARI DE CULTIVARE SI IZOLARE A CELULELOR NEURON-LIKE DIN CREIERUL SOARECELUI DE 7 ZILE

CORNELIA VINTILA<sup>4</sup>, ROXANA DANIELA VINTILA<sup>1</sup>, OANA GAVRILIUC<sup>1</sup>, VIRGIL PAUNESCU<sup>1</sup>, GOCZA ELEN<sup>2</sup>, STAN COTULBEA<sup>1</sup>, CALIN TATU<sup>1</sup>

<sup>1</sup>University of Medicine and Pharmacy „V. Babeş” Timișoara

<sup>2</sup>Agricultural Biotechnology Center Godollo, Hungary

<sup>3</sup>Research and Development Station for Bovine Raising Arad

<sup>4</sup>University of Agricultural Sciences and Veterinary Medicine Timișoara

*In the present we know that each type of tissue possesses stem cells. These have the role to replace lost cells due to physiological turnover, injury, or disease and to support cell genesis contributing to the cell number homeostasis. Long time it was thought that adult mammalian central nervous system doesn't possess any or few regenerative capacity. Nowadays it was demonstrated that also in the brain there are stem cells which have the capacity to differentiate into astrocytes, oligodendrocytes and neurons.*

*In few degenerative diseases the stem cells lose the regenerative capacity with consequences in diminishing and loss of functional capacity. Stem cell therapy represents a novel and promising therapeutic approach to treatment of a variety of degenerative disease as multiple sclerosis. For this it is necessary that a efficient stem cell source can be found and secondary to be proven that these transplantable cells have differential potential into neural tissue.*

*In order to be able to possess a stem cell source capable to build an implant it is necessary to know the cultivation technology and also the instruments to prove their capacity to differentiate into specific cells of the nervous system. These were the motives that enabled us to try to harvest, cultivate and differentiate stem cells from the murine central nervous system.*

**Keywords:** neuronal stem cells, neuronal like cells, neurospheres

## NEOMYCIN INDUCES APOPTOSIS IN THE INNER EAR

### NEOMICINA INDUCE APOPTOZA ÎN URECHEA INTERNĂ

ROXANA D. VINTILA<sup>1</sup>, STAN COTULBEA<sup>1</sup>, KARINA GÜLTIG<sup>2</sup>, ANDREA MÜLLER<sup>2</sup>, CORNELIA VINTILA<sup>3</sup>, BERNHARDT HIRT<sup>2</sup>, HUBERT LÖWENHEIM<sup>2</sup>, H. P. ZENNER

<sup>1</sup> Department of ENT, University of Medicine and Pharmacy Timisoara, Romania

<sup>2</sup> Department of Otorhinolaryngology, University of Tübingen, E. Aulhornstr. 5, Germany (Tübingen Hearing Research Center), Marie Curie Program

<sup>3</sup> Banat University of Agriculture and Veterinary Medicine Timisoara

*Objectives: to study the apoptotic response of auditory hair cells in the organ of Corti after exposure to neomycin within the first 6 hours. Materials and methods: auditory hair cells harvested on the postnatal day 7 from the cochleae of C57BL6 wild type mice were cultured in vitro in the presence (neomycin group, n= 59 cochleas) or absence of neomycin (control group, n= 31 cochleas). Apoptotic cells were evaluated within 6 hours of incubation for the expression of active caspases (8, 9 or 3) in the cytoplasm and counterstained using propidium iodide to highlight apoptotic nuclei. Cells were statistically quantified using average and standard deviation. The differences between the averages were tested with the help of Student T test (threshold  $p < 0,05$ ). Results: The statistic comparison between the different caspase types (caspase 3, 8 and 9), the average and dispersion inside the cell groups, permitted us to detect the first step of apoptosis taking place in the cytoplasm. The comparison of the cell group where propidium iodide was accumulated in the nucleus with the cell group where both the caspase and propidium iodide appeared, permitted us to detect the initiation and development of the second step of apoptosis, the one where the nucleus has already been affected. Conclusions: Neomycin is initiating, right after 6 hours of incubation, the process of apoptosis in auditory hair cells, determining the activation of cytoplasm caspases.*

**Keywords:** Apoptosis, auditory hair cells, neomycin  
**THE INNER EAR OF SEVEN DAYS OLD MICE CONTAINES PLURIPOTENT  
STEM CELLS**

**URECHEA INTERNĂ A ȘOARECELUI DE ȘAPTE ZILE CONȚINE CELULE  
STEM PLURIPOTENTE**

DANIELA ROXANA VINTILĂ<sup>1</sup>, OANA GAVRILIUC<sup>1</sup>, ELEN GOCZA<sup>2</sup>, V. PĂUNESCU<sup>1</sup>, DANA  
ILIE<sup>3</sup>, CORNELIA VINTILĂ<sup>4</sup>, FLORINA BOJIN<sup>1</sup>, C. ȚAȚU<sup>1</sup>

<sup>1</sup>University of Medicine and Pharmacy „V. Babeș” Timișoara

<sup>2</sup>Agricultural Biotechnology Center Godollo, Hungary

<sup>3</sup>Research and Development Station for Bovine Raising Arad

<sup>4</sup>University of Agricultural Sciences and Veterinary Medicine Timișoara

*The purpose of the ongoing research is to improve our current skills and knowledge in stem cell isolation, cultivation and differentiation from the utricular and saccular epithelia of young mice. We harvested utricles and sacculi from 7 days old NMRI mice. Utricles were trypsinized in order to isolate single cells. Obtained cells were cultivated in DMEM with F12 Nutrient mixture, B27, N2 supplement, IGF-1 and EGF. Sphere pluripotency was established with stem cell markers Nanog and Oct-4. We mechanically dissociated primary spheres and cultivated. Secondary spheres were placed on fibronectin coated tissue culture slide chambers in the absence of IGF-1 and EGF. Cells were characterized by immunofluorescence and immunohistochemistry for myosinVIIA (hair cell marker) and nestin (intermediate filament VI marker). Vestibular epithelia contain pluripotent stem cells able to form cell clusters (spheres). Pluripotency was demonstrated by the expression of nanog, oct 4 and nestin markers (cell progenitors). Also sphere dissociation and separate cultivation of the isolated cells lead to the formation of larger spheres and in higher amounts compared to the original spheres, proving that these cells are not only pluripotent but also capable of self-renewal. Single spheres harvested and cultivated on fibronectin produced through differentiation different cell types including neuron like-cells, positive for myosin VIIA and nestin.*

**Keywords:** stem cell isolation, cultivation, differentiation, inner ear.

**ENZYMATIC HYDROLYSIS OF AGRICULTURAL LIGNOCELLULOSIC  
BIOMASS**

**HIDROLIZA ENZIMATICA A BIOMASEI LIGNOCELULOZICE DIN  
AGRICULTURA**

T. VINTILA, M. DRAGOMIRESCU, S. STRAVA, V. CROITORIU

<sup>1</sup>Faculty of Animal Sciences and Biotechnologies, Timișoara, România, [tvintila@animalsci-tm.ro](mailto:tvintila@animalsci-tm.ro)

*The yield, productivity and cost for the enzymatic hydrolysis of cellulose to glucose are crucial for the production of second generation ethanol. In the first study we have evaluated the activity of several commercial cellulolytic enzymes and a crude extract of a local strain of Trichoderma viride. The load used was 15 U of cellulase/gram cellulose and 90 U of cellobiase/gram cellulose. The hydrolysis was carried out at 50°C and pH 4,8 for 96 hours. The best cellulose hydrolysis yield of 58% was obtained with the cocktail formed of crude cellulases from T. viride CMIT3.5 combined with Novozyme 188. This cocktail was used in the second study, when alkaline-steam pretreated wheat straw and corn stover were hydrolyzed at pH 4,8 for 96 hours. The temperature was set at 50°C and 40°C. The hydrolysis at lower temperature was tested for a future experiment of simultaneous hydrolysis and fermentation. An enzymatic assay using glucose-6-phosphate dehydrogenase was used to determine exclusively glucose, instead of wide-range sugar DNS assay. Reporting to 100 grams of wet pretreated biomass, the following results were obtained: 14.4 g% glucose for corn stover at 50°C and 13,0 g% at 40°C; 13,1 g% glucose for wheat straw at 50°C and 10.3 g% at 40°C. Considering that wheat straw contain 36.6% glucose-based carbohydrates, the hydrolysis yields are between 39.3% and 28.1%. Further studies, concerning the optimal parameters for cellulase cocktail will be made.*

**Keywords:** lignocellulose hydrolysis, saccharification, bioethanol.

## ENTRAPMENT OF FLUORESCENT *E. COLI* CELLS IN ALGINATE GEL

### ENTRAPAREA CELULELOR FLUORESCENTE DE *E. COLI* IN GEL DE ALGINAT

T. VINTILA<sup>1</sup>, D. VINTILA<sup>1</sup>, M. DRAGOMIRESCU<sup>1</sup>, V. IGNA<sup>2</sup>

<sup>1</sup>*Faculty of Animal Sciences and Biotechnologies, Timișoara, România,*  
[tvintila@animalsci-tm.ro](mailto:tvintila@animalsci-tm.ro)

<sup>2</sup>*Faculty of Veterinary Medicine, Timișoara Romania*

*By this experiment we will demonstrate the possibility to obtain genetically modified microbial strains that can be used as markers in different studies. The trait transferred in this study is the fluorescence in UV light expressed by a gene isolated from jellyfish. This gene was inserted into a plasmid carrying ampiciline resistance and in the operon for arabinose fermentation. The plasmid was called pGLO. E coli HB101 K-12, ampicillin resistant colonies has been obtained. The colonies on the LB/amp/ara plate fluoresce green under UV light and the transformed colonies can grow on ampicillin. Transformation efficiency = 362 transformed colonies/ μg DNA. The cells were immobilized by entrapment in alginate gel to study the phenomenon involved in cells immobilization. After immobilization in alginate gel, 5x10<sup>4</sup> cells of E. coli pGLO / capsule and 1,4 x 10<sup>5</sup> cells of E. coli HB101/capsule has been found. Fluorescent microscopy revealed the presence of pGLO carrying cells into the capsules. After cultivation of alginate capsules containing E. coli in LB broth, and fluorescent microscopy of the capsule sections, several observations of the phenomenon involved in continuous fermentation using biocatalysts in has been made. These cells grow and migrate to the cortical part of the matrix where they are immobilized.*

**Keywords:** fluorescent cells, alginate gell, entrapment

## RESULTS CONCERNING GENETIC CHARACTERIZATION OF MANGALITA BREED USING MICROSATELLITE MARKERS

### REZULTATE PRIVIND CARACTERIZAREA GENETICĂ A RASEI MANGALIȚA PE BAZA MARKERILOR MICROSATELIȚI

M. ZĂHAN<sup>1</sup>, P. RAICA<sup>1</sup>, V. MICLEA<sup>1</sup>, ILEANA MICLEA<sup>1</sup>, R. RENAVILLE<sup>2</sup>, O. DUTERME<sup>2</sup>, M. MIHĂILESCU<sup>3</sup>, AL. NAGY<sup>4</sup>

1. *University of Agricultural Sciences and Veterinary Medicine, Faculty of Animal Sciences and Biotechnology, Cluj-Napoca, Romania, e-mail: [mzahan@usamvcluj.ro](mailto:mzahan@usamvcluj.ro)*

2. *Progenus S.A., 13 Avenue Marechal Juin, 5030 Gembloux, Belgium*

3. *S.C. Suinprod S.A. Roman, 336 km Ștefan cel Mare Street, 611410 Roman, Romania*

4. *Agricultural Research and Development Station, Turda, Romania*

*The proper use, further development, testing and deployment of animal genetic resources is essential to enhancement of food security and sustainable intensification of food production. For Red Mangalita conservation, we studied four microsatellite markers (SO228, SW72, SW911 and SW936) in order to genetic characterization of two populations. The results showed that both populations are in genetic imbalance, but also indicate high population variability, without the risk of genetic drift.*

**Key words:** microsatellite markers, genetic characterization, Mangalita, population

# EFFECTS OF HEAT STRESS ON SEXUAL BEHAVIOR IN HEIFERS

## STUDIUL COMPORTAMENTULUI SEXUAL LA JUNINCI ÎN CONDIȚII DE STRES TERMIC

ELENA BOLOCAN

Research and Development Institute for Bovine, Balotești, România [bolocanelena@yahoo.com](mailto:bolocanelena@yahoo.com)

*High ambient temperatures affect the secretion of sexual hormones in cows and heifers. As a result, the frequency of silent estrus can reach a high level during summer. In order to analyze the effects of heat stress on sexual behavior in Black and White Romanian heifers, a research has been conducted on four groups of animals in the pre- and post-AI interval. During spring, in conditions of thermal comfort and under the stimulating influence of increasing photoperiod, 83.3% of the heifers showed clear signs of estrus. Exposure to temperatures of 36-42°C by day and 21-31°C by night caused anoestrus: the heifers did not respond to repeated estrus-induction treatment. When hot days (33-38°C) alternated with tolerable temperatures by night (18-21°C), a normal expression of estrus was noticed in 16.7% of the animals, while 33.3% experienced weak estrus and 50% did not exhibit sexual behavior. In conditions of moderate thermal stress, with peaks of daily temperature ranging from 28 to 34°C, clear signs of estrus were detected in 25% of the heifers and weak symptoms in 41.7%, while 33.3% had silent heat, clinically diagnosed. The circadian profile of behavior changes in heat-stressed heifers, whose sexual activity shifts to night time and to the early hours of the morning.*

**Keywords:** estrus behavior, heat stress, heifers

## EFFECTS OF STRAIN, CAGE DENSITY AND POSITION ON IMMUNE RESPONSE TO VACCINES AND BLOOD PARAMETERS IN LAYER PULLETS

### EFFECTUL RASEI, A DENSITĂȚII ȘI POZIȚIEI CUȘTII ASUPRA RĂSPUNSULUI IMUN LA VACCINURI ȘI A PARAMETRILOR SANGUINI LA PUII DIN RASELE DE GĂINI OUĂTOARE

Z. BOZKURT<sup>1</sup>, I. BAYRAM<sup>2</sup>, A. BÜLBÜL<sup>3</sup>, O. C. AKTEPE<sup>4</sup>

<sup>1</sup>Afyon Kocatepe University, Faculty of Veterinary Medicine, Department of Animal Science; <sup>2</sup>Afyon Kocatepe University, Faculty of Veterinary Medicine, Department of Animal Feeding; <sup>3</sup>Afyon Kocatepe University, Faculty of Veterinary Medicine, Department of Physiology; <sup>4</sup>Afyon Kocatepe University, School of Medicine, Department of Microbiology

*Two thousand 1-day-old layer chicks were used in the study from Lohman Brown, Isa Brown, Lohman White and Bowans White breeds. The chicks were placed in the at 3 cage densities (211.8, 274.5 and 370.6 cm<sup>2</sup> per bird) and on 3 positions (as top, middle and bottom tiers). All birds were kept under standard management policy and a commercial vaccination program was practiced. Total specific antibody titres to Infectious Brochitis Virus (IBV), Infectious Bursal Disease Virus (IBDV), Newcastle Disease Virus (NDV) and Egg Drop Syndrome Virus (EDSV) vaccines at the ages of 5, 10 and 20 weeks were serologically determined by ELISA. Cell-mediated immune response was also evaluated. In commercial white egg laying strains specific antibody titres to IBV, IBDV, NDV and EDSV vaccines were greater than in Brown egg layer strains. Keeping in cage created more stress in Brown egg laying chicks than those in white egg laying chicks. As cage density increased, the ratio of heterophils to lymphocytes (H/L ratio) slightly increased. Cage position had no influence on the titres of antibodies to IBV and IBDV vaccines but the position of cage in pullets where chicks were stocked, from top to bottom, NDV and EDSV antibody titre decreased and percentage of heterophils, H/L ratio and basophil rates were low. These findings suggest that cage-related stress could be decreased, resistance to diseases and finally well-being of hens may be improved if hens are kept under proper position and density within cage systems with respect to their physiological and behavioral characteristics that controlled by genes.*

**Keywords:** cage density, cage position, pullet, strain, stress, welfare

## STUDY ON PHYTOEXTRACTION BALANCE OF ZN, CD, PB FROM MINE-WASTE POLLUTED SOILS BY USING *MEDICAGO SATIVA* AND *TRIFOLIUM PRATENSE* SPECIES

### STUDIUL BILANTULUI FITOEXTRACTIV AL ZN, CD SI PB DIN SOLURI POLUATE CU STERIL DE MINA IN CAZUL UTILIZARII SPECIILOR DE *MEDICAGO SATIVA* SI *TRIFOLIUM PRATENSE*

B. LIXANDRU<sup>1</sup>, ANCA PRICOP<sup>1</sup>, N. DRAGOMIR<sup>1</sup>, SMARANDA MASU<sup>2</sup>, C. BOGATU<sup>2</sup>, I. PET<sup>1</sup>

<sup>1</sup>Faculty of Animal Sciences and Biotechnologies, Timisoara, Romania, [ben\\_lixandru@yahoo.com](mailto:ben_lixandru@yahoo.com)

<sup>2</sup>National Institute for Research and Development of Industrial Ecology (ECOIND) from Bucuresti, branch of Timisoara

For a term of two years was studied phytoextractive potential of Zn, Cd and Pb using successive culture of alfalfa (*Medicago sativa*) and red clover (*Trifolium pratense*). In the experimental plot was incorporated a quantity of 20 kg mine waste per square meter, providing in soil 1209 mg Zn/kg d.s., 4.70 mg Cd/kg d.s. and 188.2 mg Pb/kg d.s. The metals content accumulated in plants was determined at the two moments of biomass harvesting, and through balance calculations we could establish the phytoextraction efficiency of the two forage-grasses species. The obtained results indicate that both perennial forage-legumes species have a good phytoextractive capacity and tolerance for Zn and Pb, especially *Trifolium pratense* specie. By using this species as phytoextractors on soil polluted with 3.76 times more Pb and 4.03 times more Zn, is provided the reduction of metallic ions concentration in soil to limits admitted by laws in a period of 3, respectively, 4 years.

**Keywords:** pollution, Zn, Cd, Pb, phytoextraction, alfalfa, red clover

## STUDY ON PHYTO-EXTRACTION BALANCE OF ZN, CD AND PB FROM MINE-WASTE POLLUTED SOILS BY USING *FESTUCA ARUNDINACEA* AND *LOLIUM PERENNE* SPECIES

### STUDIUL BILANTULUI FITOEXTRACTIV AL ZN, CD SI PB DIN SOLURI POLUATE CU STERIL DE MINA IN CAZUL UTILIZARII SPECIILOR DE *FESTUCA ARUNDINACEA* SI *LOLIUM PERENE*

B. LIXANDRU<sup>1</sup>, N. DRAGOMIR<sup>1</sup>, ANCA PRICOP<sup>1</sup>, C. BOGATU<sup>2</sup>, SMARANDA MÂȘU<sup>2</sup>, FLORICA MORARIU<sup>1</sup>, I. PEȚ<sup>1</sup>

<sup>1</sup>Faculty of Animal Sciences and Biotechnologies, Timișoara, România, [ben\\_lixandru@yahoo.com](mailto:ben_lixandru@yahoo.com)

<sup>2</sup>National Institute for Research and Development of Industrial Ecology (ECOIND) from București, branch of Timișoara

Through the cultivation of tall fescue (*Festuca arundinacea*) and of perennial ryegrass for two years on a chernozem type of soil, in the Banat's plain area we investigated the phyto-extraction potential of Zn, Cd and Pb. In the experimental plot it has been incorporated a quantity of 20 kg of mine-waste per square meter, in a mass ratio of 1:2,5. The mine-waste polluting "contribution" was of 1209 mg Zn / kg d.s., 4.70 mg Cd / kg d.s. and 188.2 mg Pb / kg d.s. The metals content in the soil was determined at the two moments of biomass harvesting, and through balance calculations we could establish the phyto-extraction efficiency of the two forage-grasses species. The obtained results indicate that *Festuca arundinacea* has an average phyto-extraction yield of 50% for Zn and Cd in the soil; in the case of an ionic excess of 3,5 to 4 times, the phyto-extraction efficiency is reduced, more obvious in the case of Pb (lead) ions. The species *Lolium perenne* registers a yield of almost 92% in the process of phyto-extraction of Zn. The yield values for Cd si Pb are lower, but comparable with the control plot. Unlike *Festuca arundinacea*, the *Lolium perenne* species tolerates better the Cd and Pb ionic excess.

**Keywords:** tall fescue, perennial ryegrass, phyto-extraction, zinc (Zn), cadmium (Cd), lead (Pb)

# A CASE STUDY OF TRANSYLVANIAN PINZGAU IN BANAT AREAL

## STUDIUL DE CAZ PENTRU TAURINELE PINZGAU DE TRANSILVANIA DIN ZONA BANAT

M. MATIUTI<sup>1</sup>, A. T. BOGDAN<sup>2</sup>, E. CRAINICEANU<sup>1</sup>

<sup>1</sup> Faculty of Veterinary Medicine of Timisoara, [matiutimarcel@yahoo.com](mailto:matiutimarcel@yahoo.com)

<sup>2</sup> Romanian Academy Bucharest

*The 'Pinzgau of Transylvania' taurine breed was formed in Transylvania and Banat through the German population's efforts in what concerns the work of amelioration and selection. The research has been carried out during 1998 – 2008. In the year 1936 there were approximately 18700 specimens of the 'Pinzgau of Transylvania' breed, while in 2008 there are only 875 specimens left (pure blood and half blood) and the number is still heavily decreasing. In Banat, the breeding system regarding this breed is the traditional one. The average milk production of the 'Pinzgau of Transylvania' breed here in Banat is 3278 kg, the fat percent is 3,23±0,01 and the protein percent 3,88±0,01. The ability for meat production is 740 – 810 g/day. In what concerns the global warming, this breed adapts very well to mountain areas as well as to plain areas. In order to preserve the traditional products of Banat, it is advisable to maintain this breed.*

**Keywords:** indigenous breed, gene banks protection, growth

## COMPARATIVE STUDIES REGARDING THE NITROGEN COMPOUNDS IN WASTE WATERS FROM SMITHFIELD –PERIAM SWINE FARM, TIMIS COUNTY

### STUDII COMPARATIVE PRIVIND COMPUSII AZOTULUI, DIN APELE REZIDUALE DE LA FERMA DE CREȘTERE A PORCILOR SMITHFIELD – PERIAM, JUDEȚUL TIMIS

ELEONORA NISTOR<sup>1</sup>, GH. NISTOR<sup>1</sup>, V. BAMPIDIS<sup>2</sup>, B. SKAPETAS<sup>2</sup>

<sup>1</sup> Faculty of Animal Sciences and Biotechnologies, Timișoara, Romania

<sup>2</sup> Alexander Technological Educational Institute (A.T.E.I.) of Thessaloniki, Greece  
[nisnora@yahoo.com](mailto:nisnora@yahoo.com)

*The aim of presented study was to analyse and compare the nitrogen compounds in waste waters from a swine farm from the west of Romania and the environmental impact on the quality of surface water and groundwater. Water samples were taken from sites likely to be potentially sensitive to pollution, above, near and below the waste water discharge in the Mureș river and biopond units. Nitrogen concentrations from 652 mg/l at the pump station 1 to 12.1 mg/l downstream 1 km after the discharge in the Mureș stream exceed the standard limits accepted for the surface waters. As regarding the ammonia concentrations are also very high, in the analysed samples for the old cleaning system, but lies under the admitted limits in the new system of wastewater cleaning. In conclusion, wastewater from Periam swine farm had a minor pollution impact for surface waters including for Mureș River, while in the new system some values for the nitrogen compounds lies over those obtained in the old system of wastewater cleaning.*

**Key words:** nitrates, nitrites, ammonia, nitrogen, swine

# COMPARATIVE STUDIES REGARDING THE HEAVY METALS IONS AND CONDUCTIBILITY, IN WASTE WATERS FROM SMITHFIELD –PERIAM SWINE FARM, TIMIS COUNTY

## STUDII COMPARATIVE PRIVIND INCARCATURA CU DIFERITI IONI DE METALE GRELE, A APELOR REZIDUALE DE LA FERMA DE CRESTERE A PORCILOR SMITHFIELD – PERIAM, JUDETUL TIMIS

ELEONORA NISTOR<sup>1</sup>, GH. NISTOR<sup>1</sup>, V. BAMPIDIS<sup>2</sup>, B. SKAPETAS<sup>2</sup>

<sup>1</sup> Faculty of Animal Sciences and Biotechnologies, Timisoara, Romania

<sup>2</sup> Alexander Technological Educational Institute (A.T.E.I.) of Thessaloniki, Greece  
nisonora@yahoo.com

*The aim of this study was to present the results of the investigation for the surface waters pollution with different ions, Ph, electric conductivity and organic substances from Smithfield-Periam swine breeding complex. Concentrations of magnesium, sulphates, sodium and potassium are situated under the limits accepted for the first class of the surface waters in the new system of cleaning. Electric conductivity values are over the limits accepted by STAS for the surface waters in the old cleaning system and framed in standard limits in the new wastewaters cleaning system. Ph of the analyzed wastewaters is framed in the standard of the surface waters for both cleaning wastewaters systems. With the exception of organic substances, the new system of wastewaters cleaning used in the Smithfield-Periam swine farm is better and in the same is avoiding the pollution for surface waters.*

**Key words:** pollution, swine, pH, ions, wastewaters

## STUDIES REGARDING THE CHELATE-INDUCED HYPERACCUMULATION OF CU AND FE USING LOLIUM PERENNE SPECIES IN MINING AREAS

### CERCETARI PRIVIND HIPERACUMULAREA INDUSA A CU SI FE IN ZONELE MINIERE CU AJUTORUL SPECIEI LOLIUM PERENNE

ANCA-DIANA PRICOP<sup>1</sup>, B. LIXANDRU<sup>1</sup>, SMARANDA MÂȘU<sup>2</sup>, C. BOGATU<sup>2</sup>, SZIDONIA SZUCS<sup>1</sup>

<sup>1</sup> Faculty of Animal Sciences and Biotechnologies, Calea Aradului 119, Timisoara. phone: +40 256 227206, anca.pricop@animalsci-tm.ro

<sup>2</sup> National Research and Development Institute for Industrial Ecology-ECOIND, P-ta Victoriei 2, et.2, PO Box 254, Timisoara; phone/fax: +40 256 220369

*The plant capacity to absorb high amounts of metal for a short period of time is the major factor that influences the efficiency of phytoextraction. The hyperaccumulating plants uptake high amounts in their tissues correlated to the metal concentrations in soil. Chelating agents have the capacity to induce the metal accumulation in biomass. They increase metal bioavailability for plants by releasing the metal in accessible forms. The present study emphasizes that in the case of EDTA use, the obtained biomass is smaller compared to the other variants, showing a lower tolerance to this chelating agent of Lolium perenne species. Cu and Fe phytoextraction by Lolium perenne species is higher in the case of EDTA use. Cu bioaccumulation has higher values in variants with compost-sterile mixture ratio of 1:4 in comparison with Fe. In the case of the best compost-sterile mixture ratio of 1:3 the highest biomass is obtained in all the variants, biosolids' effect being stronger compared to the chelating agent.*

**Keywords:** chelate-induced hyperaccumulation, Cu, Fe, Lolium perenne

# MULTIFUNCTIONAL UTILIZATION OF PASTURES IN ROMANIA

## VALOAREA MULTIFUNCȚIONALĂ A PAJIȘTILOR DIN ROMÂNIA

N. DRAGOMIR

*Faculty of Animal Sciences and Biotechnologies, Timișoara, Romania,  
dragomir\_ne@yahoo.com*

*Romanian pastures are characterized by a multitude of functions that may be used for human benefit: food and habitat for animals, development of some connected activities (collection and processing of apicultural products, medicinal plants, etc.), natural reservoir providing biodiversity for more than 70% of the plant species (the preservation of this may assure an important germplasm fund for the next cultivars), the most efficient method of soil protection against erosion, provider of unconventional energy, accomplishment of efficient biological cycles of nitrogen, phosphorus, potassium and carbon dioxide (CO<sub>2</sub>), development of landscape tourism due to the plant and animal diversity that ennoble and beautify the environment.*

*If only 60% of the permanent pasture area was used, with the application of minimal technological measures, it would provide the necessary food for at least 1.6 million cattle (57% of the current livestock) and 12 million sheep and goats.*

**Keywords:** pastures, erosion, productivity, biological nitrogen, melliferous structure

## DIMENSIONS OF CARCASS AND INTERNAL ORGANS IN YOUNG SHEEP, UNDER CONDITIONS OF GRAZING ON ASSOCIATIONS OF PERENNIAL GRAMINACEOUS AND LEGUME

## DIMENSIUNILE CARCASEI ȘI ORGANELOR INTERNE LA TINERETUL OVIN, ÎN CONDIȚIILE PĂȘUNATULUI UNOR AMESTECURI DE GRAMINEE ȘI LEGUMINOASE PERENE

N. DRAGOMIR<sup>1</sup>, I. PEȚ, I. PĂDEANU<sup>1</sup>, ELENA PEȚ<sup>2</sup>, MARIA SAUER<sup>3</sup>,  
I. SAUER<sup>3</sup>, S. VOIA<sup>1</sup>, CARMEN DRAGOMIR<sup>1</sup>, CORINA CRISTEA<sup>4</sup>,  
I. FRĂȚILĂ<sup>1</sup>, D. RECHIȚEAN<sup>4</sup>, S. TOTH<sup>1</sup>

<sup>1</sup> *Faculty of Animal Sciences and Biotechnologies, Timișoara, Romania, dragomir\_ne@yahoo.com*

<sup>2</sup> *Faculty of Farm Management, Timișoara, Romania*

<sup>3</sup> *Research- Development Station from Sheep and Goats Caransebes, Romania*

<sup>4</sup> *Grass Research- Development Station Timișoara, Romania*

*The temporary pastures' floristic structure influences directly the growth and development of young sheep during grazing. The associations, beside the graminaceous and perennial legume species (white clover and birdsfoot trefoil), contribute mostly to the increase of carcass dimension and organ weight. The quality of the forage from such a pasture, better balanced in terms of energy and protein, influences all growth and development parameters in young sheep.*

**Key words:** temporary pasture, associations of graminaceous and perennial legume, young sheep, growth and development dimensions.

## INFLUENCE EXERTED BY GRAZING OF GRAMINACEOUS AND PERENNIAL LEGUME ASSOCIATION ON MEAT QUALITY AND SEROLOGICAL INDICES IN YOUNG SHEEP

### INFLUENȚA PĂȘUNATULUI UNOR AMESTECURI DE GRAMINEE ȘI LEGUMINOASE PERENE ASUPRA CALITĂȚII CĂRNII ȘI A UNOR INDICI SEROLOGICI LA TINERETUL OVIN

I. PEȚ<sup>1</sup>, N. DRAGOMIR<sup>1</sup>, CORNELIA VINTILĂ<sup>1</sup>, I. PĂDEANU<sup>1</sup>, ELENA PEȚ<sup>2</sup>, ADELA MARCU<sup>1</sup>, MARIA SAUER<sup>3</sup>, I. SAUER<sup>3</sup>, D. RECHIȚEAN<sup>4</sup>, CORINA CRISTEA<sup>4</sup>, I. FRĂȚILĂ<sup>1</sup>, LAURA MIHĂESCU<sup>1</sup>, S. TOTH<sup>1</sup>

<sup>1</sup> Faculty of Animal Sciences and Biotechnologies, Timișoara, Romania, [nelu\\_pet@yahoo.com](mailto:nelu_pet@yahoo.com)

<sup>2</sup> Faculty of Farm Management, Timișoara, Romania

<sup>3</sup> Research- Development Station from Sheep and Goats Caransebes, Romania

<sup>4</sup> Grass Research- Development Station Timișoara, Romania

*Pasture associations, consisted of graminaceous and perennial legume species, represent a balanced forage for young sheep, because they generate a high-quality meat and an optimal level of the serological indices. In this viewpoint, legume species contribute to the achievement of superior quality indices of the animal-based products.*

**Keywords:** temporary pasture, young sheep, quality, serological indices

## FORAGE PRODUCTIVITY AND SOIL FERTILITY UNDER ORGANIC FERTILIZER CONDITIONS ON *Agrostis capillaries* PASTURES

### PRODUCTIVITATEA FURAJULUI ȘI FERTILITATEA SOLULUI PE O PAJIȘTE DE *Agrostis capillaries* L. ÎN CONDIȚII DE FERTILIZARE ORGANICĂ

I. RAZEC<sup>1</sup>, MARIA RAZEC<sup>1</sup>, M. NOAGHEA<sup>1</sup>, GETA UJUPAN<sup>2</sup>

<sup>1</sup> Grassland Research Institute, Brasov, Romania [razeci@yahoo.com](mailto:razeci@yahoo.com)

<sup>2</sup> District Bureau of Agriculture Advisory

*In the last time was applied a deficient management on the grassland, from Romania. This aspect has affected the yield and forages quality on the grassland. Different measures of grassland improvement were studied, for to do away with these negative effects. The researches were carried out of 2006-2008, at Grassland Research Institute Brasov, on districambosol tipic soil, pH<sub>H2O</sub> 5.6, with a low content of mineral nutrients*

*An organic system of fertilisation was studied on a *Agrostis capillaris* and *Festuca rubra* tipe of grassland. 20,40,60 t.ha<sup>-1</sup> manure levels where applied in different period (autumn, spring). The effect of organic fertiliser level, the time of organic fertiliser apply and methods of grassland using (hay or frequent cutting) on botanical composition, DM yield and soil fertility were studied. The organic fertilization has causes an economical pastures using, 70-135 % DM increasing, with a stable productivity, increase the fertility and vegetal cover density and the landscape improvement. The proportion between species was changes, due to the more cutting and fertilization. To maintain a landscape and a high biodiversity is necessary only one cutting.*

**Keywords:** grassland, botanical composition, manure, DM yield, soil fertility.

## OPTIMIZATION OF GRAZING CAPACITY IN TEMPORARY PASTURE CROPS, GRAZED WITH SHEEP, IN HILL AREAS

### OPTIMIZAREA CAPACITĂȚII DE PĂȘUNAT A CULTURILOR DE PAJIȘTI TEMPORARE, VALORIFICATE CU OVINELE, ÎN ZONA DE DEAL

MARIA SAUER<sup>1</sup>, I. SAUER<sup>1</sup>, CARMEN DRAGOMIR<sup>2</sup>, S. TOTH<sup>2</sup>,  
D. VĂCARIU<sup>1</sup>

<sup>1</sup>Stațiunea de Cercetare – Dezvoltare pentru Creșterea Ovinelor și Caprinelor Caransebeș

<sup>2</sup>Universitatea de Științe Agricole și Medicină Veterinară a Banatului Timișoara

*The researches performed in the Caransebeș hill area made evident the opportunities of the temporary pasture crops consisted of intensive red clover and perennial graminaceous associations. Each type of the associations studied produced the biggest DM yields under conditions of direct grazing with animals, at an animal load of 2 UVM/ha. The most balanced proportion between legume and graminaceous species (52 : 48%) was obtained in the second year of production, in the variant grazed with 2 UVM/ha.*

**Keywords:** temporary pasture, methods of utilization, dry matter, floristic composition

## MANAGEMENT OF PORK PRODUCTION IN COMMERCIAL EXPLOITATIONS

### MANAGEMENTUL PRODUCȚIEI DE CARNE DE PORC ÎN EXPLOATAȚIILE COMERCIALE

MARIANA<sup>1</sup> BRAN, IULIANA DOBRE,<sup>1</sup> R. VOICU<sup>1</sup>

<sup>1</sup>Academy of Economic Study, Bucuresti  
e-mail: mariana\_bran2004@yahoo.com

*The livestock determine in the population consumption of highest nutritive value compared with the crops. The economic opportunity of livestock is determined by their ability to produce lots of meat, while short time. With the increasing requirements for pig meat are also increased demands from production quality. Thus, lean meat (most requested) must come from young animals, fattened. In the Romanian agriculture, growth of pigs is done the traditional production system (individual exploitations that are mostly subsistence), but also in technological systems based on scientific principles (exploitations connected to economic flux), under extension, based on private initiative event. In these latter exploitations, is applied method offered by science management. Breeds of pigs, becoming more efficient, requires specific conditions that may be generated by the use of technologic management. The specialization of exploitations could contribute to the rationalization of costs; they are to target a specific category of swine. In addition, pig breeders could use the methods of cooperation to form a continuous flux of activities to increase. Deficit current reduction of pig meat can be achieved by creating commercial exploitations, obtain favorable in terms competitiveness and efficiency.*

**Key words:** pig meat, young animals fattened, science management, commercial exploitations.

## PROSPECTIVES ON THE ENVIRONMENTAL ACCOUNTING MANAGEMENT

### PERSPECTIVE ASUPRA MANAGEMENTULUI CONTABILITĂȚII MEDIULUI

L. CERNUȘCA, B.C. GOMOI

*University "Aurel Vlaicu" of Arad, luciancernusca\_ro@yahoo.com*

*The problem any faces right now is how to use the planet's natural resources in a sustainable way. Or, in other words: how do we ensure that resources are used in a way that ensures on the one hand that the needs of the present generation are met, whilst on the other ensuring that sufficient resources remain so that future generations are able to meet their needs. In defining the sustainability, the word "resources" has a subjective valuation for an individual. The earth is full of "matter" but not all matter is a resource (i.e. carbon dioxide in excess does a lot of damage to the planet). Hence in order for a resource exploitation to be effectively coordinated, there must even be coordination of the different criteria used to establish what a resource is. But since a "resource" might be a resource for someone but not for someone else, the problem starts to be a rather big one.*

**Keywords:** management, accounting, environmental, net national product.

## ACCOUNTING PRACTICES FOR ADJUSTING THE ENTITY'S RESULTS

### PRACTICI CONTABILE DE AJUSTARE A REZULTATELOR ENTITĂȚII

L. CERNUȘCA

*University "Aurel Vlaicu" of Arad, luciancernusca\_ro@yahoo.com*

*An enterprise's financial result is the main source of information for all those interested in the company's activity. As a result of being normalized and audited, the information offered by accounting receives the "social recognition", recognition which allows them to be used to evaluate the enterprise's activities and performances. Although there are accounting laws, the options and/or the imprecision in the accounting texts allow for the possibility to manipulate the financial result and the content of the financial statements. Within the liberty offered by the different source of accounting law, the enterprises can choose between the options which are at the base of presenting the financial statements. The choices made by the enterprise's management with the purpose of modeling in a legal way, the presentation and the content of the financial statements are known as accounting policy. Within an enterprise, developing the accounting policies represent a primary aspect, because applying these policies determine a high degree of financial information relevance and lead to better management choices.*

**Key words:** accounting practice, accounting policy, results, adjusting.

## IMPROVEMENTS OF THE BUSINESS PROCESS

### IMBUNATATIREA PROCESELOR DE AFACERI

R. CURETEANU<sup>1</sup>

<sup>1</sup>*Faculty of Economics Sciences, Aurel Vlaicu University, Arad, România, rcureteanu@uav.ro*

*The purpose is to analyze current process improvement approaches. Decision makers can be altered to both the success factors and causes of failure of different process improvement approaches, and help assure practical effectiveness of process improvement efforts. The contribution of this paper is two fold: first, empirical evidence on the drivers of success and failure of four main PI approaches, were synthesized second, based on this empirical evidence, a conceptual framework that guides both the choice and implementation of business process improvement programs is developed.*

**Keywords:** process management, business process reengineering

## MANAGERIAL PERFORMANCE THROUGH WORK SYSTEM DESIGN

### PERFORMANTA MANAGERIALA PRIN INTERMEDIUL SISTEMELOR DE LUCRU

R. CURETEANU<sup>1</sup>

<sup>1</sup>*Faculty of Economics Sciences, Aurel Vlaicu University, Arad, România, rcureteanu@uav.ro*

*Purpose: to look at job design, motivation and teamwork. As the market gets more competitive, companies must change their plan of attack on almost a daily basis.*

*They need to answer the question: what is the best way to do business? As employers look at job design they will find that it is not the only factor that indicates how productive employees are in the workplace. Motivation also determines how much energy employees will expend, as well as what tasks will be accomplished, and in what amount of time it will be completed.*

**Keywords:** Job design, Team working, Performance management

## THE STUDY OF THE OFFER FORMING SOURCES AT THE CATTLE MEAT IN TIMIS CONTY

### STUDIUL SURSELOR DE FORMARE A OFERTEI LA PRODUSUL CARNE DE TAURINE ÎN JUDEȚUL TIMIȘ

E. GRIGOROIU<sup>1</sup>, G. GRIGOROIU,<sup>2</sup> E. E. GRIGOROIU,<sup>2</sup>  
GABRIELA RUSALIN<sup>3</sup>

<sup>1</sup> *Faculty of Animal Sciences and Biotechnologies, Timisoara, Romania*  
*eegrigoroiu@yahoo.com,*

<sup>2</sup> *Faculty of Mechanics, Timișoara,* <sup>3</sup> *Agricultural Scholar Group Timisoara*

*For this study were used the basic methods of methods of investigation: the analyze, the synthesis and comparison in time and space using the typical economic indicators. The paper presents the grouping of county's localities depending on the animals number bred at 1000 inhabitants, the grouping of the localities according to the animal number per 100 ha, the grouping of the localities according to the meat product achieved per inhabitant annually, the grouping of the localities according to the meat product achieved per ha annually.*

**Keywords:** cattle, economic indicators

## THE STUDY OF THE OFFER FORMING SOURCES AT THE MUTTON MEAT IN TIMIS CONTY

### STUDIUL SURSELOR DE FORMARE A OFERTEI LA PRODUSUL CARNE DE OVINE ÎN JUDEȚUL TIMIȘ

E. GRIGOROIU<sup>1</sup>, G. GRIGOROIU,<sup>2</sup> E. E. GRIGOROIU,<sup>2</sup> GABRIELA RUSALIN<sup>3</sup>

<sup>1</sup> Faculty of Animal Sciences and Biotechnologies, Timisoara, Romania, eegrigoroiu@yahoo.com

<sup>2</sup> Faculty of Mechanics, Timișoara, <sup>3</sup> Agricultural Schoolar Group Timisoara

*For this study were used the basic methods of methods of investigation: the analyze, the synthesis and comparison in time and space using the typical economic indicators. The paper presents the grouping of county's localities depending on the animals number bred at 1000 inhabitants, the grouping of the localities according to the animal number per 100 ha, the grouping of the localities according to the meat product achieved per inhabitant annually, the grouping of the localities according to the meat product achived per ha annually.*

**Keywords:** seeps, economic indicators

## MARKETING OF TRADITIONAL PRODUCT IN TRANSYLVANIA

### MARKETINGUL PRODUSELOR TRADITIONALE IN TRANSILVANIA

M. MATIUTI<sup>1</sup>, A. T. BOGDAN<sup>2</sup>

<sup>1</sup> Faculty of Veterinary Medicine of Timisoara, matiutimarcel@yahoo.com

<sup>2</sup> Romanien Academy Bucharest

*Transylvania and the Banat are two historical regions that gave birth to several domestic animal breeds. Over the last 15 years, number have sunken dramatically, because these local breeds have been greatly replaced by imported ones. Although very many so- called agrotouristic pensions are now on the market, only about 1% of them promote real traditional food products obtained from local animal breeds. Only few people, especially old people, know traditional recipes older than two or three hundred years and the youth totally ignore them. On the one hand, a large variety of names for different products have appeared on the market, but they are manufactured by big firms and do not have the quality of the traditional products. On the other hand, small producers often have hygiene problems. The reinforcement of traditional products can only occur if people know the quality and the value of the products obtained from the local animal breeds, many of them being endangered species.*

**Keywords:** traditional products, native/ local animal breeds.

## VARIATION OF THE ECONOMICAL EFFICIENCY OF PIG CARCASSES ACCORDING QUALITY CLASSES

## VARIAȚIA EFICIENȚEI ECONOMICE A CARCASELOR DE PORCINE ÎN FUNȚIE DE CLASELE DE CALITATE

I. PETROMAN<sup>1</sup>, CORNELIA PETROMAN<sup>1</sup>, IOANA BĂLAN<sup>1</sup>,  
DIANA MARIN<sup>1</sup>

<sup>1</sup>*Faculty of Agricultural Management, Timișoara, România*

*The profitability of pork disjoint-packing activity depends on the carcass quality. Carcasses of superior types, respectively „E” and „U” generate higher profit on the kilogram of disjoint carcass, in comparison with the carcasses of medium type „R” and inferior types „O” and „P”.*

**Key words:** pig carcass, cutting pieces, index of cutting.

## THE ROLE OF HUNTING TOURISM MANAGEMENT IN THE CONSERVATION OF BIODIVERSITY

## ROLUL MANAGEMENTULUI TURISMULUI CINEGETIC ÎN CONSERVAREA BIODIVERSITĂȚII

I. PETROMAN<sup>1</sup>, IOANA BĂLAN<sup>1</sup>, A. MATIUȚI<sup>1</sup>, EMILIA BĂLA<sup>1</sup>

<sup>1</sup>*Faculty of Farm Management, Timișoara, România*

*Although hunting tourism is not a new activity, it appears since the dawn of human evolution, today it must be managed in a professional way in order to protect and keep the environment and the hunted. The development of agriculture and animal breeding has released most of the human communities from the worries of feeding themselves, decreasing considerably the pressure on hunted species as a food resource. In order to practice this type of tourism, some hunted species must be bred in semi wilderness to be used as trophies and food resources and to protect the wildlife. Special emphasis must be put on the productive function of the forest ecosystem, the development and intensification of agriculture, development of the infrastructure, development of mass tourism in protected areas and enlarging the natural habitat of the hunted species, reducing hunting and intensifying observation and study of wildlife behaviour through hunting tourism with an ecological character.*

**Keywords:** tourism, hunting, fauna, habitat, ecosystem, management, biodiversity

## **ANALYSIS OF MILK QUALITY AND ITS IMPORTANCE FOR MILK PROCESSORS**

### **ANALIZA CALITATII LAPTELUI SI IMPORTANTA SA PENTRU PROCESATORI**

AGATHA POPESCU <sup>1</sup>, ELENA ANGEL <sup>2</sup>

<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine Bucharest, Romania ,  
E-mail : agatha\_popescu@yahoo.com

<sup>2</sup> Flav O' Rich Dairy Inc , London , Kentucky, United States of America ,  
E-mail : otopeni@peoplepc.com

*The paper aimed to present some aspects regarding milk quality and its importance for milk processors , taking into account a study case at FLAV O'RICH DAIRY INC,USA. The study analyses how milk quality is checked from the bulk milk to final product according to the Milk Quality Program in force. The main aspects concerning raw milk selection criteria such as : antibiotic test, temperature, bacteria, organoleptic properties , acidity, somatic cell count , but also main milk components such as water, butterfat , total solids, protein, lactose , solids non fats , minerals, acids have been approached . Also a comparison for 7 butterfat producers for East Fluid Group has been done . Milk processing assures the destruction of human pathogens , the maintenance of product quality without significant loss of flavor, appearance, physical and nutritive properties and the selection of organisms which may produce unsatisfactory products.*

**Keywords:** milk quality , importance , milk procesors , Flav O'Rich Dairy Inc

## **ANALYSIS OF MILK PRODUCTION AND ECONOMIC EFFICIENCY IN DAIRY FARMS**

### **ANALIZA PRODUCTIEI DE LAPTE SI EFICIENTEI ECONOMICE IN FERMELE DE VACI**

AGATHA POPESCU <sup>1</sup>

<sup>1</sup>University of Agricultural Sciences and Veterinary Medicine Bucharest, Romania ,  
E-mail : agatha\_popescu@yahoo.com

*The paper aimed to present some aspects regarding milk production and farm size and their relationship to economic efficiency in dairy farming. For this purpose, three variants of hers size have been taken into consideration as follows: F1– raising 12 dairy cows whose milk yield is 3,500 kg /cow/lactation; F2-raising 50 dairy cows whose milk yield is 5,000 kg /cow and year and F3 – rearing 150 dairy cows, producing 6,000 kg milk per cow/year. For each variant, the following economic parameters have been determined: gross product, variable costs, fixed costs, gross margin, gross and net profit, profit rate and other specific indicators of economic efficiency such as: milk yield, milk cost, cost /cow/year, profit/cow, profit rate /cow, income /cow, profit/farm and profit rate at farm level. In conclusion, the higher the farm size and milk yield, the higher gross margin, net profit and profit rate .*

**Keywords:** analysis , milk production, economic efficiency , dairy farming

## COMPARATIVE ANALYSIS IN BROILERS FATTENING BY SERIES SIZE

### ANALIZA COMPARATIVA IN INGRASAREA PUIILOR BROILERI IN FUNCTIE DE MARIMEA SERIEI

L. SABAU <sup>1</sup>, AGATHA POPESCU <sup>2</sup>

<sup>1</sup>*Breeding Prod Commercial Company , Giarmata, Timis County*

<sup>2</sup>*University of Agricultural Sciences and Veterinary Medicine, Bucharest , Romania*

*E-mail :agatha\_popescu@yahoo.com*

*The paper aimed to present a comparative analysis in broilers fattening by series size. The experiments were carried out at Breeding Prod Commercial Company for two series of broilers as follows: Series S , Spring 2008, resulting 66,000 delivered fattened chickens at the age of 45 days and 2.36 kg live weight and Series S2 , Autumn 2008, delivering 68,400 fattened chickens at the age of 48 days and 2.64 kg live weigh . Series S1 produce 151,087 kg live weight, meaning 37.77 kg live weight per square meter fattening block while Series S2 registered 174,256 total live weight at delivery, meaning 43.56 kg per square meter. The higher the series size, the higher performance in broilers fattening. The only negative aspect was the length of fattening, which in case of S2 was by 3 days longer. In case, fodder consumption was 21.01 % higher than in case of S1 with a deep impact on production cost.*  
**Keywords:** comparative analysis, broilers fattening , series size

## ANALYSIS OF ECONOMIC EFFICIENCY IN BROILERS FATTENING

### ANALIZA EFICIENTEI ECONOMICE IN INGRASAREA PUIILOR BROILERI

L. SABAU <sup>1</sup>, AGATHA POPESCU <sup>2</sup>

<sup>1</sup>*Breeding Prod Commercial Company , Giarmata, Timis County*

<sup>2</sup>*University of Agricultural Sciences and Veterinary Medicine, Bucharest , Romania*

*E-mail :agatha\_popescu@yahoo.com*

*The paper aimed to analyze economic efficiency in broilers fattening . In this purpose , the study was carried out at Breeding Prod Commercial Company, Giarmata, Timis County . The economic and financial results of two series of broilers fattening have been comparatively analyzed based on the following specific indicators variable costs ( one day chicken supply , medicines, disinfectants , veterinary services , straw bed, feeding, fuels, electricity , watering , labor force ) , fixed costs ( rent, interest, fixed assets depreciation , communication and other taxes ), total production costs , cost per marketed broiler, cost per square meter , cost per kg live weight , gross margin , incomes ( incomes coming from marketed broilers and subsidies) , profit, profit rate , profit per marketed broiler, profit per square meter, profit per kg live weight , costs to 1,000 incomes and incomes to 1,000 costs. This comparison proved that the higher the chickens series size , the higher costs and incomes . The both fatenning series have profitable but the series S2 registered lower financial performances .*  
**Keywords:** analysis, economic efficiency , broilers fattening

## OPTIMIZATION OF THE FIBROUS FORAGE CROPS IN ORDER TO ENSURE THE NECESSARY NUTRIENTS FOR ANIMALS STOCK IN VRANCEA DISTRICT

### OPTIMIZAREA STRUCTURII CULTURILOR FURAJERE DE VOLUM ÎN VEDEREA ASIGURĂRII NECESARULUI DE HRANĂ PENTRU EFECTIVUL ANIMALIER DIN JUD. VRANCEA

MARCELA ȘTEFAN, MARIANA BRAN

Academy of Economical Studies Bucharest,  
E-mail: [mariana\\_bran2004@yahoo.com](mailto:mariana_bran2004@yahoo.com)

*Besides the organization of agricultural exploitations technology, the production structure is very important.*

*The process of the improvement of agricultural crops structure, in order to increase the qualitative performance of agricultural products, calls for modifications and balance corresponding to the present and future requirements.*

*Applying the best variants in the structure of fibrous forage we could diminish the decrease of animals stocks at the limit of stopping the falling off, following the parameters of gradual growth at the level of ensuring the planned productions.*

*The increase of medium and total production level represents the consequence of improving the biologic level of animals stocks, feeding technologies and techniques, reproduction and breeding.*

*To ensure the nutrients corresponding resources in order to optimize the structure of forage crops does not preclude the carrying out of the program to improve pastures and a scientific nutrients.*

**Key words:** structure of fibrous forage, ensuring the planned productions, nutrients resources, optimizes the structure of forage crops.

### ANATOMIC STUDIES ABOUT RABBIT SPERMATICS WAYS

### STUDII ANATOMICE PRIVIND CAILE SPERMATICE LA IEPURELE DE CAMP

CARMEN BERGHES, MONICA PARVU, D. CUCA

Universitatea Spiru Haret, Facultatea de Medicina Veterinara  
[carber63@yahoo.com](mailto:carber63@yahoo.com)

*The paper aims to bring some completions of male genital anatomy in rabbits, in particular related to vascularisatia it. Data from literature are brief and last time the species is used as a laboratory experimental model with application in human surgery. To study were used 10 animals that were purchased from the private sector. Prior to making dissection vascular formations were injected with a contrast material prepared in the laboratory of anatomy of the faculty. Dissection was performed using the magnifying glass stereomicroscopica and appropriate instrumentation surgery high fineness. Were achieved after pictures and pieces of dissection were performed schemes. Formation to describe the terminology used in NAV ed. 2002 After dissection found that epididyme is intimately attached to the edge epididymis testicularis, channel epididymis presents a many flecsuosis branch of different sizes, thickness of the channel increases from epididimar cones related to deferential channel, number eferente cones is variable (between 6 and 8 cones), and tail origin epididymis and deferential channel is dressed in adipose tissue forming the body fat of testicularis. Testicular arteries originate from the abdominal aorta, right testicular artery, the right of the fifth lumbar vertebrae left testicular artery and the right of the sixth lumbar vertebra: epididimara artery skull emerges from the testicular artery and the caudal artery of the internal iliac .*

**Keywords:** rabbit, epididim, testis, artera testiculris

# COMPARATIVE ANATOMICAL STUDIES ABOUT CHICKEN SUB-BASAL CONNECTIONS

## STUDIUL ANATOMIC COMPARATIV PRIVIND CONEXIUNILE SUBBAZALE LA GAINA

CARMEN BERGHES, MONICA PARVU, D. CUCA, M. CUCANES

University "Spiru Haret", Faculty of Veterinary Medicine  
[carber63@yahoo.com](mailto:carber63@yahoo.com)

*The studies aimed to describe the nervous formations from the base of the cranium in the hen and domestic duck. These clarifications are necessary in order to disclose some unknown facts regarding this region in the poultry species used preponderantly in laboratory studies of the aviary flu.*

*The vegetative connections from the base of the skull have been studied on 10 poultry specimens, 5 hens and 5 ducks. The animals have been euthanatized using chloroform and a special dye has been injected through the heart in order to achieve a better differentiation of the nervous formations. Dissection was performed under a magnifying glass using instruments adequate to highly fine dissections. Photos and sketches of the dissected pieces have been taken. Nomina Anatomica (2003) was used to describe the observed formations. The studies showed that the cranial cervical ganglia around which is the sub-basal nervous tissue, is located on the border of the occipital hole, at the basis of the temporal pyramid, much deeper than in mammals; it is better developed in the duck (3-4 mm) than in the hen (1-2 mm); the cranial cervical ganglia has the shape of a globe in gallinaceans and it is long in shape in the ducks. A multitude of connecting branches were observed around the lymph node, linking it to the vague nerve, to the hypoglossal nerve, to the glosso-pharyngeal nerve and to the transversal paravertebral chain which is specific to poultry; an obvious branch detaches from the cranial pole, which is the sub-basal connective, while the cervical connective detaches from the caudal pole, connecting it to the cervical-thoracic lymph node.*

**Keywords** – subbasale conective, chicken, cranial cervical ganglia

## BIOCHEMICAL MODIFICATIONS OF GASTRIC MUCOSA IN OXIDATIV STRESS

### MODIFICĂRI BIOCHIMICE ALE MUCOASEI GASTRICE ÎN STRESUL OXIDATIV

CRISTINA DINU<sup>1</sup>, CRISTIANA DIACONESCU<sup>2</sup>, N. AVRAM<sup>1</sup>, D. CUCA<sup>1</sup>

<sup>1</sup>Spiru Haret University, Faculty of Veterinary Medicine, Bucharest

<sup>2</sup>University of Agronomical Sciences and Veterinary Medicine, Faculty of Zootechnic, Bucharest

*This study aims to explain the participation of ROS in chronic gastric mucosal damage by drinking water with pH 4 and by undergoing 30 minutes for three times per day of water immersion. After four weeks the animals which were exposed at two damaging factors were sacrificed and gastric mucosa was collected for analyzing lipid peroxidation and superoxide dismutase activity. The levels of MDA and 4-HNE used as indicators of lipid peroxidation, increased from  $5.85 \pm 0.04$  nmol/g to  $12.25 \pm 0.95$  nmol/g for acid group and from  $5.85 \pm 0.04$  nmol/g to  $14.06 \pm 1.20$  nmol/g for water immersion group. In the acid group the level of total glutathione decreased to  $200.10 \pm 19.10$  mg/100g and  $145.56 \pm 13.85$  mg/100g reduced glutathione. In water immersion group the level of total glutathione decreased to  $180.70 \pm 16.82$  mg/100g and  $130.60 \pm 10.64$  mg/100g reduced glutathione. In acid group Superoxide dismutase decreased to  $255.18 \pm 22.84$  U/g and in water immersion group decreased to  $215.73 \pm 20.60$  U/g.*

**Keywords:** gastric mucosa, superoxide dismutase, malondialdehyde, stress

## CHANGES IN THE BILE-ACIDS COMPOSITION OF BILE JUICE AFTER FAT INTAKE

### SCHIMBĂRI ÎN COMPOZIȚIA ACIZILOR BILIARI AI SUCULUI BILIAR DUPĂ INGESTIA DE GRĂSIMI

<sup>1</sup>CRISTINA DINU, <sup>2</sup>CRISTIANA DIACONESCU, <sup>1</sup>N. AVRAM, <sup>1</sup>D. CUCĂ

<sup>1</sup>*Spiru Haret University, Faculty of Veterinary Medicine, Bucharest*

<sup>2</sup>*University of Agronomical Sciences and Veterinary Medicine, Faculty of Zootechnic, Bucharest*

*A high fat intake increases the flow of bile or changes the composition of bile acids in refluxed duodenal contents, and then plays an important role in the developmental precancerous lesion of BE and leading to esophageal adenocarcinoma EAC. Wistar rats were divided into three groups based on their diet: a control group (fed with standard diet, containing 4.20% soybean oil), a second group (fed with a low cow-fat diet, containing 4.20% cow fat) and the third group (fed with a high cow-fat diet, containing 16.8% cow fat). The TCA value detected in the animals fed the high cow-fat diet (median concentration,  $13.8 \pm 2.42$  mmol/L) was significantly increased comparative with those detected of animals fed the standard diet ( $8.15 \pm 1.22$  mmol/L). The TDCA value in the high cow-fat group ( $2.64 \pm 0.97$  mmol/L) was significantly increased comparative with those detected of animals fed the standard diet ( $1.66 \pm 0.50$  mmol/L).*

**Keywords:** fat intake, bile acids

### MODIFICĂRI INDUSE DE UNII FACTORI NUTRIȚIONALI ASUPRA STRUCTURII TIBIEI LA PORC

## CHANGES INDUCED BY SOME NUTRITIONAL FACTORS ON TIBIAL BONE STRUCTURE IN PIG

GABI DUMITRESCU<sup>1</sup>, LAVINIA STEF<sup>1</sup>, D. DRINCEANU<sup>1</sup>, LILIANA PETCULESCU CIOCHINA<sup>1</sup>, D. STEF<sup>1</sup>, D. DRONCA<sup>1</sup>, RODICA CRISTE<sup>2</sup>, LILIANA BOCA<sup>1</sup>, C. JULEAN<sup>1</sup>

<sup>1</sup>*University of Agricultural Science and Veterinary Medicine, Timisoara, Romania  
Faculty of Animal Science and Biotechnologies*

<sup>2</sup>*National Research and Development Institute for Biology and Animal Nutrition, Balotesti, Romania  
gdumitrescu@animalsci-tm.ro*

*The problems approached by our team are represented by the involvement of different sources and levels of calcium, namely calcium carbonate, fructoborate and alfalfa, in the mineralization of bone tissue. So, we made six histological preparations of tissue fragments taken from tibia bone, from 9 pigs belonging to three batches: the control batch, where calcium was provided in a proportion of 1% through calcium carbonate, experimental batch 1, where calcium was provided in a proportion of 1.04% through fructoborate, on a calcium carbonate support, and experimental batch 2, where calcium was provided in a proportion of 1.13% through fructoborate + alfalfa, on a calcium carbonate support. The histomorphometric parameters assessed were represented by the volume of bone trabeculae (BV/TV, %) or the percentage of bone tissue in a given volume and the mean width of bone trabeculae. At the same time, in order to establish fructoborate and alfalfa implication in bone mineralization, we supervised the presence and activity of osteoblasts respectively osteoclasts. In the case of the experimental batch 1, the histomorphometric study shows an increase of bone trabeculae dimension, with a mean width of about  $142,5\mu$ , and also an increase of their mean volume, which is about 37,11%. The trabecular system is dense and present mineralised and ossified territory where are formed by osteoclasts with osteocytes. Peritrabecular are presented active osteoblasts which are involved in plurilamellar stratification by deposition of young collagen. In the case of individuals from experimental batch 2, trabeculae mean width is about  $140,7\mu$ , while their volume is 35,62%.*

**Keywords:** pig, bone, fructoborate, calcium, histomorphometry

## REPRODUCTION PERFORMANCE OF RABBITS BY INCUBATED SEMEN WITH HEPARIN IN INDUSTRY RABBIT FARM

### PERFORMANTELE REPRODUCTIVE OBȚINUTE ÎN FERME DE IEPURI CU MATERIAL SEMINAL INCUBAT CU HEPARINĂ

FIK M., JANA HANUSOVÁ, HENRIETA ARPÁŠOVÁ

Department of Poultry Science and Small Animal Husbandry, Faculty of Agrobiological and Food Resources, Slovak University of Agriculture in Nitra, e-mail: [martin.fik@uniag.sk](mailto:martin.fik@uniag.sk)

*The aim of the study was to evaluate the effect of incubation semen with heparin (25 000) in insemination dose on fertility rate of inseminated does, and on the number of all and liveborn young per litter. The experiment was realized in commercial farm. The farm was localized in areas of west Slovakia. The rabbit strain HYCOLE was used in experiment. Experimental does were inseminated with ID 0.5 cm<sup>3</sup> with the concentrations of spermatozoa from 40 to 50 x 10<sup>-6</sup> in cm<sup>3</sup>. Experimental semen was incubated by heparin (0.06 microliter. per 1 inseminated dose) Control semen was incubated without heparin. In control part of experiment were used the same volume of ID, however without heparin. Incubation of semen dose with and without heparin was up to 1 hour. Rabbit does were inseminated after standard hormonal treatment. These studies demonstrate that heparin speed capacitation of rabbit sperm. The experimental group showed better result in conception rate (2.3 %), gravidity period and synchronisation of kindling. The number liveborn young rabbits per litter had statistically no significant ( $p > 0.05$ ) effect. The data were evaluated by statistical method in statistic programme Microsoft Excel.*

**Keywords:** rabbit, insemination, conception of rabbit, incubated by heparin, capacitation by heparin.

### DETERMINATION OF HAEMATOLOGICAL AND BIOCHEMICAL PARAMETERES IN HENS AT DIFFERENT STAGES OF THE EGG FORMATION

### DETERMINAREA UNOR PARAMETRII HEMATOLOGICI ȘI BIOCHIMICI LA GAINI IN DIFERITE STADII DE FORMARE ALE OULUI

ALINA GHISE<sup>1</sup>, LILIANA CARPINISAN<sup>1</sup>, OLGA RADA<sup>2</sup>, RODICA ZEHAN<sup>2</sup>, GHISE GH.

<sup>1</sup>Faculty of Veterinary Medicine, Timișoara, Romania,

<sup>2</sup>Faculty of Agriculture, Timișoara, Romania

*10 hybrid ISA Brown hens, 50 weeks old, hold single in cages and fed with combined granulated forage, were monitored for a period of 3 weeks. They were divided into 4 groups depending on the stages of the egg formation. When 53 weeks old, the blood samples were prevailed and thereafter prepared to determine the haematological parameters and the calcemia and phosphoremia.*

*The values of haematological parameters (the erythrocytes sedimentation rate, the haemoglobine content, the haematocrit and the leukocitar formula) are within the normal limits and that no variations appear depending on the egg position in the oviduct.*

*The calcemia values are within the normal limits (20-35 mg%) for hens during their laying period, The mean value is 34.19±0.96 mg %. The statistical processing of the data does not reveal significant differences ( $p > 0.05$ ) among the calcemia values, irrespective of the egg formation stage.*

*The phosphoremia values show significant modifications during the 24-25 hours necessary for the egg formation: at 30 minutes postoviposition the mean value of the phosphoremia represented 4.86±0.14 mg%, and at 22-23 hours postoviposition the level of the blood phosphorous represented 4.64±0.10 mg%, while at 10-12 hours postoviposition the registered mean value was 6.79±0.07 mg% phosphorous.*

**Keywords:** laying fowl, haematological parameters, calcemia, phosphoremia.

# BIOCHEMICAL ASPECTS OF BOTH THE CORTICAL BONE AND THE MEDULLARY BONE IN HENS AT DIFFERENT STAGES OF THE EGG FORMATION

## ASPECTE BIOCHIMICE ALE OSULUI CORTICAL SI OSULUI MEDULAR LA GAINI IN DIFERITE STADII DE FORMARE ALE OULUI

ALINA GHISE<sup>1</sup>, LUCIA OLARU<sup>1</sup>, HUȚU I.<sup>1</sup>, RODICA ZEHAN<sup>2</sup>,  
GHIȘE GH, LILIANA CĂRPINIȘAN<sup>1</sup>

<sup>1</sup>Faculty of Veterinary Medicine, Timișoara, Romania,

<sup>2</sup>Faculty of Agriculture, Timișoara, Romania

*10 hybrid ISA Brown hens, 50 weeks old, hold single in cages and fed with combined granulated forage, were monitored for a period of 3 weeks. They were divided into 4 groups depending on the stages of the egg formation. When 53 weeks old, the hens were sacrificed and the bones of the inferior members (femur, tibiotarsus) were prevailed and thereafter prepared to determine the content of dry matter, crude ash and minerals (calcium, phosphorous, magnesium) both for samples of the whole bone and for the samples of the cortical and medullary bone. There were no significant differences in the content of dry matter of the cortical and medullary bone samples of the femur, tibia among the individuals ( $p > 0.05$ ). The content in crude ash of the femur falls significantly ( $p = 0.042$ ) in the hens slaughtered 10 to 12 hours after oviposition. In the cortical bone from the femur the values of calcium, magnesium and phosphorous were not modified irrespective of the egg position in the oviduct. In the medullary bone from the femur the content in calcium and phosphorous was correlated with the egg formation stage; as for magnesium there were no significant differences during the egg formation irrespective of the stage. As for the cortical bone of the tibia of the hens from the 4 groups there are no significant differences ( $p > 0.05$ ) regarding the content in calcium, magnesium and phosphorous. In the medullary bone the content in calcium, magnesium and phosphorous was modified significantly depending on the position of the egg in the oviduct, and on the egg formation stage respectively.*

**Keywords:** laying hens, cortical bone, medullary bone, calcium, phosphorus, magnezium

## THE FUNCTION OF HYPOPHYSIS-THYROID SYSTEM IN PATIENTS WITH ALCOHOLISM DEPENDING ON IODINE SUFFICIENCY OF THE HUMAN BODY

### FUNCȚIA SISTEMULUI HIPOFIZĂ-TIROIDĂ LA PACIENȚI CU ALCOOLISM

LARYSA ROSTOKA<sup>1</sup>, IVAN TURIANICA<sup>2</sup>, PETER CHLEBO<sup>2</sup>,  
MARTINA ČIŽMÁROVÁ<sup>2</sup>

<sup>1</sup>Uzhgorod National University, biochemistry and pharmacology department, Uzhgorod, Ukraine

<sup>2</sup>Slovak Agricultural University, human nutrition department, Nitra, Slovakia, E-mail: [rostoka@yandex.ru](mailto:rostoka@yandex.ru)

*The aim of our investigation was to study the hypophysis- thyroid status of a body in patients with alcoholism, the inhabitants of various biogeochemical zones of the Transcarpathia, in the highlands – with expressed iodine deficiency and in the lowlands – with lower degree of iodine insufficiency. The content of thyroxin, triiodothyromine, thyrotropic hormone in blood serum has been defined by radioimmunologic method with the use of standard test- sets. The general iodine in the blood and urine has been studied by cerium-arsenide method. The peculiarities as to the influence of various ecologically iodine supply of the body upon TSH function of the hypophysis, hormone function of the thyroid gland, iodine reserves of the body both in practically healthy people and in alcoholism have been established. Alcoholism has been shown to be accompanied by the increased losses of iodine with urine and the depletion of the iodine reserves of the body, the increase of T<sub>3</sub> level in blood serum both in lowlands and highlands of the Transcarpathia, it being characterized by different degrees of iodine deficiency complicating the existing iodine deficiency of the body. These findings may be good reasons for including iodine correction into the treatment of alcoholism.*

**Keywords:** hypophysis-thyroid system, alcoholism, iodine-conditioned sufficiency, hormone

# THE RUMINANT EFFECT OF VEGETAL LECITHIN AT SHEEP AND GOATS

## EFFECTUL RUMINAL AL LECITINEI VEGETALE LA OAIIE ȘI CAPRĂ

H. SĂRĂNDAN<sup>1</sup>, ANA PIVODĂ<sup>2</sup>, D. DRÎNCEANU<sup>3</sup>, ANA SAUER<sup>4</sup>, OLGA RADA<sup>5</sup>, LILIANA CĂRPINIȘAN<sup>1</sup>, CLAUDIA SALA<sup>1</sup>, S. VOIA<sup>3</sup>, C. LUCA<sup>1</sup>

<sup>1</sup>*Banat University of Agricultural Sciences and Veterinary Medicine, Faculty of Veterinary Medicine, 119 Aradului Alley, 300645, Timișoara, Romania*

<sup>2</sup>*Research- Development Institute for Sheep and Goat Breeding in Palas, Constanța, Romania*

<sup>3</sup>*Banat University of Agricultural Sciences and Veterinary Medicine, Faculty of Animal Science and Biotechnologies, 119 Aradului Alley, 300645, Timișoara, Romania*

<sup>4</sup>*Experimental Center for Sheep Breeding, Caransebeș, Romania*

<sup>5</sup>*Banat University of Agricultural Sciences and Veterinary Medicine, Faculty of Agriculture, 119 Aradului Alley, 300645, Timișoara, Romania*

*In the extraction process of the vegetable soy oils and sun-flower oils results in large quantities a waste that contains approximately 45% fat from which 58% is lecithin. This waste called “dreg” creates problems of environment pollution because we didn’t find a use for it. We tested this waste in the food of small ruminants, at sheep and goat, watching the ruminant effect and the apparent digestibility of the nutritive substances in the food. The tested doses of “dregs” were of 100 g and 200 g per day. The food supplementation in sheep and goats with dregs up to 7% fat in the dry substance of the ration has favourable and proportional effects with the dose of fat on the digestibility of the nutritive substances from the food. The growth of ruminant bacteria is favoured at the 100 g dose of dregs but is depressed at the 200 g dose of dregs. On the ruminant protozoa the supplementation with fat from dregs leads to the reducing of the number of protozoa and even at defaunation. It is possible that the fat from the dregs to be a source of  $Y_{ATP}$  and to protect the alimentary proteins of the degrading with proteolytic enzymes and therefore to make the protein ruminant by-pass.*

**Keywords:** sheep, goat, ruminant, lecithin

## **GROWTH RATE AND MORTALITY IN SUCKLING PIGLETS AND THEIR CORRELATION TO THE SOWS' MILK YIELD**

RATA DE CRESTERE SI MORTALITATE LA PURCEII SUGARI IN CORELATIE CU  
PRODUCTIA DE LAPTE A SCROAFELOR

H. SĂRĂNDAN<sup>1</sup>, R. SĂRĂNDAN<sup>2</sup>, I. PETROMAN<sup>3</sup>, L. OGNEAN<sup>4</sup>,  
M. SĂRĂNDAN<sup>1</sup>, OLGA RADA<sup>5</sup>, A. BALINT<sup>1</sup>, B. FAUR<sup>1</sup>

<sup>1</sup>Banat University of Agricultural Sciences and Veterinary Medicine, Faculty of Veterinary Medicine, 119  
Aradului Alley, 300645, Timișoara, Romania

2. S.C. Nutrientul, Palota, Bihor, Romania

<sup>3</sup>Banat University of Agricultural Sciences and Veterinary Medicine, Faculty of Management, 119 Aradului  
Alley, 300645, Timișoara, Romania

<sup>4</sup>University of Agricultural Sciences and Veterinary Medicine, Faculty of Veterinary Medicine, 3-5 Manastur  
Street, 400372 Cluj-Napoca, Romania

<sup>5</sup>Banat University of Agricultural Sciences and Veterinary Medicine, Faculty of Agriculture, 119 Aradului Alley,  
300645, Timișoara, Romania

*Piglets from 116 sows were weighed at birth, on the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> day of life and upon weaning. Based on the weight growth, the sow milk production was calculated. On the first 3 days of suckling, the mammary glands were examined and the rectal temperature, vaginal pH, and the feeding rate were determined in order to diagnose the MMA syndrome. The results in growing and the mortality rate were compared in piglets from sows with ascending suckling curve and sows with non-uniform suckling curve, affected by MMA. It was observed that, on the first 3 days of suckling, the 116 sows had an average daily milk production of 4,21 l. The healthy sows with an ascending suckling curve represent 20.69% of the livestock and produced 4.03l; 5.68l and 7.14l milk on suckling days 1; 2 and 3. Comparatively, the milk production of the MMA affected sows represented 78.41%; 54.40% and 54.62% respectively of the healthy sows' milk production. As an average, on the first three suckling days, the milk production in MMA affected sows represented 60.4% of the healthy sows' milk production. The average piglet mortality on the first three days of life was 0.46 piglet / sow, for the MMA affected ones. Until weaning, the total mortality rate was of 0.96 piglet/healthy sow and 1.87 piglet/MMA affected sow and the average daily growth rate for the entire suckling period was reduced from 181.07 g/day to 166.78 g/day.*

**Keywords:** sows, piglets, milk production, MMA

## **MORPHOLOGICAL FEATURES OF DOG TRANSMISSIBLE VENEREAL TUMOURS WITH GENITAL AND EXTRAGENITAL LOCALIZATIONS CARACTERISTICI MORFOLOGICE ALE TUMORILOR VENERIENE TRANSMISIBILE LA CAINE CU LOCALIZĂRI GENITALE ȘI EXTRAGENITALE**

A. STANCU, M. COMAN, I. OLARIU-JURCA

Faculty of Veterinary Medicine – Timisoara,  
astancu2002@yahoo.com

*Considering the examined cases, we note that 30% were vaginal and vestibular localizations, 25% were situated in cells (implanted tumoral cells), 15% in lymph-node (metastasis in superficial inguinal lymph-node), 10% in nasal cavities and 5% both in penis and lymph- node metastasis. Cytological and histological aspects are very much alike, no matter were they are located in coetaneous localizations and they need differential diagnose in contraction with canine coetaneous histiocytoma, coetaneous limphotoma and poor differentiated mast cell tumors, with the lymph- node metastasis, with the nasal cavities carcinoma, lymphoma and rhinitis.*

**Keywords:** transmissible venereal tumors, histology, cytology, immune- labeling.

# THE CORRELATION BETWEEN CYTOPATOLOGICAL AND HISTOPATHOLOGICAL DIAGNOSIS IN DOMESTIC CARNIVORES MAMMARY GLAND TUMORS

## CORELAȚII DINTRE DIAGNOSTICUL CITOPATOLOGIC ȘI HISTOPATOLOGIC ÎN TUMORILE GLANDEI MAMARE LA CARNIVORE

A. STANCU, M. COMAN, I. OLARIU-JURCA

Faculty of Veterinary Medicine – Timisoara, astancu2002@yahoo.com

*The cytological examination of mammary tumors at domestic carnivores is considered useful by some researchers (with a precision of 90-100% from the establishment of malignity), while others consider that by aspiration with fine needle we cannot differentiate with certitude a benign tumor by a malign one (1, 2). Other researchers demonstrate that through the cytological examination of the mammary gland we can certainly differentiate an inflammatory process by a tumor one (4). The optimal interpretation of cytology depends very much of the access to the clinic data, of a knowledge of mammary lesions biology, of the adequate examination of the representative cells and by the experience in domain of the specialist doctor (1).*

*In the present work we analyze comparatively the results obtained by cytological examination with those offered by the histological examination of the mammary tumors at the domestic carnivores. We followed in what measure the cyto-pathological diagnose (facile, rapid, cheap) can replace or complete the histo-pathological diagnosis.*

**Keywords:** cytological, histo-pathological, tumors, carnivores

## STRUCTURAL CHANGES IN THE RAT TESTES CAUSED BY DIAZINON ADMINISTRATION

## MODIFICĂRI STRUCTURALE ÎN TESTICULELE DE ȘOBOLAN INDUSE DE ADMINISTRAREA DIAZINONULUI

R. TOMAN, S. HLUCHÝ, B. ŠIŠKA, M. CABAJ, J. GOLIAN, P. MASSÁNYI, N. LUKÁČ

Slovak Agricultural University in Nitra, Slovak Republic, robert.toman@uniag.sk

*The aim of this study was to find the structural changes in the rat testis after a diazinon administration. The testis structure changes after the diazinon administration of 20 mg/kg b.w. (i.p.) and daily dose of 40 mg/l in drinking water (p.o.) were evaluated in light microscopy. 36 hours after the diazinon i.p. administration, the vacuolization of the seminiferous epithelium, evacuation of germ cells into the tubule lumen, epithelium necrosis and interstitium extension were observed. After 90 days of daily oral administration, the changes in the testis were not as visible as in the acute intoxication. The germ cells released from the basal lamina and then were visible in the tubule lumen. Diazinon causes the damage of the germinal epithelium in the testes leading to the spermatogenesis failure. The infertility can then appear.*

**Keywords:** diazinon, testis, histology, morphometry, rat

## **IODIDE INSUFFICIENCY – CONSEQUENCES AND PROPHYLAXIS**

### **INSUFICIENȚA IODULUI – CONSECINȚE ȘI PROFILAXIE**

I. TURIANICA<sup>2</sup>, ROSTOKA LARYSA<sup>1</sup>, BALINT LYUBOV<sup>1</sup>, S, HLUCHÝ<sup>2</sup>, O, KULCICKY<sup>3</sup>

<sup>1</sup>*Uzhgorod National University, biochemistry and pharmacology department, Uzhgorod, Ukraine*

<sup>2</sup>*Slovak Agricultural University, human nutrition department, Nitra, Slovakia*

<sup>3</sup>*Institute for Gerontology of Medicine Academy Science of Ukraine*

## **THE USE OF CHICKPEAS (CICER ARIETINUM) IN POULTRY DIETS: A REVIEW**

### **FOLOSIREA NĂUTULUI (CICER ARIETINUM) ÎN HRANA PĂȘĂRILOR: TRECERE ÎN REVISTĂ**

V.A. BAMPIDIS<sup>1</sup>, V. CHRISTODOULOU<sup>2</sup>, ELEONORA NISTOR<sup>3</sup>,  
B. SKAPETAS<sup>1</sup>, GH. NISTOR<sup>3</sup>

<sup>1</sup>*Department of Animal Production, School of Agricultural Technology, Alexander Technological Educational Institute, 57400 Thessaloniki, Greece*

<sup>2</sup>*Animal Research Institute, National Agricultural Research Foundation (N.AG.RE.F.), 58100 Giannitsa, Greece*

<sup>3</sup>*Faculty of Animal Sciences and Biotechnologies, Timișoara, Romania  
bampidis@ap.teithe.gr*

*Chickpeas can be used as a high energy and protein feed in poultry diets to support growth and egg production. In common with other grain legumes, chickpeas can also contain anti-nutritional factors such as trypsin and chymotrypsin inhibitors that can impair the utilization of the nutrients by poultry. Heat treatment is an effective method to increase the amount of protein available for intestinal digestibility. This review evaluates chickpeas in regard to their nutrient composition, anti-nutritional factors content, and their impact on poultry performance. The possible reasons and implications of these results are discussed.*

**Keywords:** chickpeas, broilers, layers, performance, egg quality

## **STUDY OF COMBINED FEEDS QUALITY MADE BY HAMMER MEALS AND HORIZONTAL MIXERS**

### **STUDIUL CALITĂȚII FURAJELOR COMBINATE PRODUSE DE MORILE CU CIOCANE ȘI AMESTECĂTOARELE ORIZONTALE**

V. BĂRBIERU, M. MUNTEAN, V. SÂRB, S. NICOARĂ

*University of Agricultural Sciences and Veterinary Medicine from Cluj-Napoca, Romania*

*The study was made in order to establishing qualitative indexes of combined feeds made by hammer meals MB-22 and mixed by horizontal mixer Himel. Granulometric tests were made by sieving machine AS-300 using 3 plates with 2.5 mm, 1.25 mm and 0.63 mm orifice size and two working mode: continuous and intermittent. Obtained results indicate mixture combined feeds, having a percentage of particles kept on 2.5 mm plate between 4.8% (intermittent sieving) and 5.8% (continuous sieving) suitable for hens like used recipe, being in frame limits indicate by other authors (Popa, 1983). Concerning index of particles average <M>, the estimation indicate to fine granulations to all samples, the results are not concluding because of different orifice size to AS-300, comparing with other authors.*

**Keywords:** Combined feeds, sieving, qualitative index.

## PRODUCTIVE EFFECT OF SOYBEAN MEAL

### EFFECTUL PRODUCTIV AL SROTULUI DE SOIA

OLIMPIA COLIBAR<sup>1</sup>, T. MOT<sup>1</sup>, P. ONITA<sup>2</sup>, D. POPOVICI<sup>1</sup>

<sup>1</sup>Faculty of Veterinary Medicine, Timisoara, Romania, olimpia\_fmvt@yahoo.com,

<sup>2</sup>Laboratory of Veterinary Medicine, Arad, Romania.

*One of the main problems standing before mankind on the threshold of the XXI century is satisfaction of demand in protein. About 70% of world protein stocks have vegetative origin and therefore preparations of this protein it is very important. Importance of soya is connected with following reasons: high content of protein with functionality for food products, good essential amino-acid balance, lipids and other biologically active compounds & micronutrients. Nutritional value of soy bean meal (FFSBM) products is limited of ten by high content of antinutritive factors causing different physiologically undesirable effects after usage in food or feed of crude beans. It explains the necessity of development of special technologies of productions of full fat soya products. The objective of this works was to asses the effect of various supplementation in terms of nutritional efficiency, especially about the Ca and P level from feed and bones of broiler chickens*

**Keywords:** soya, productive effect, chickens.

## THE INFLUENCE OF MANNAN OLIGOSACCHARIDES ADDED POLEN ON BRED AREAS

### INFLUENTA MANANOLIGOZAHARIDELOR ADĂUGATE POLENULUI ASUPRA ARIILOR CU PUIET

OLIMPIA COLIBAR<sup>1</sup>, D. POPOVICI<sup>1</sup>, E. CRAINICEANU<sup>1</sup>,  
GABRIELA KORODI<sup>1</sup>, P. ONITA<sup>2</sup>

<sup>1</sup>Faculty of Veterinary Medicine, Timisoara, Romania, olimpia\_fmvt@yahoo.com,

<sup>2</sup>Laboratory of Veterinary Medicine, Arad, Romania.

*Probiotics and prebiotics (oligosaccharides and acidifying agents) appeared in the place of the old antibiotics. Mannan -oligosaccharides from Saccharomyces cerevisiae (beer-yeast) are used with success in the nutrition of pigs, chickens and rabbits. The beer-yeast is used also in the bee family's foraging with a major success. The bee-bred which is the protein source for the honey bees contains also many species of yeast. Our experiment of adding mannan -oligosaccharides in the energetic and protein feed and of using the artificial bee-bread in the place of pollen shows that those methods didn't lead an increased performance of the frozen pollen, honey energetic and protein feed.*

**Keywords:** manan- oligosaccharides, bee families, feed, pollen

## PROBIOTICS INFLUENCE UPON THE MAIN TECHNICO-ECONOMIC PARAMETERS IN BROILER BREEDING

### INFLUENȚA UNUI PROBIOTIC ASUPRA PRINCIPALILOR PARAMETRI TEHNICO-ECONOMICI AI CREȘTERII LA BROILERII DE GĂINĂ

C. CUMPĂNĂȘOIU, E. TÎRZIU, ILEANA NICHITA, MONICA ȘEREȘ

*Faculty of Veterinary Medicine Timișoara, 119 Calea Aradului, Romania*  
[ciceronis56@yahoo.com](mailto:ciceronis56@yahoo.com)

*The purpose of this research was to establish the effect of Biomin IMBO probiotic upon broilers chicken vaccinated against Newcastle disease. Probiotic effect was assessed by emphasis of the most important zoo-economic changes induced by these bioadditive. Group C (control) and E<sub>2</sub> (experimental 2) were fed with standard combined diet; group E<sub>1</sub> and E<sub>3</sub> were fed with standard combined diet and Biomin IMBO added to the starter diet at 1 kg/tonne, and in grower diet at 0.5 kg/tonne. Birds from group E<sub>2</sub> and E<sub>3</sub> were vaccinated against Newcastle disease. All broilers were periodically weighted and at the control slaughtering the carcasses were cut in commercial pieces and: average daily gain, specific feed intake and slaughtering efficiency were quantified. Results analysis suggest that the highest values of weight were registered in experimental group E<sub>3</sub> (probiotic + vaccination), while C, E<sub>1</sub> and E<sub>2</sub> have variability two and half fold higher. Also, the obtained results proved that positive effect of Biomin IMBO on summation of average daily gain and specific intake was 13.49%.*

**Keywords:** broiler chicken, probiotic, average daily gain, specific feed intake.

## EFFECT OF ENERGO-PROTEIC RATIO BY FEED OF BROILERS FROM 1 DAY TO 48 DAYS

### EFFECTUL RAPORTULUI ENERGO-PROTEIC DIN HRANA BROILERILOR DE LA 1 ZI PÂNĂ LA 48 DE ZILE

ANA DRIHA<sup>1</sup>, P. OPREA<sup>2</sup>, D. DRINCEANU<sup>1</sup>, C. JULEAN<sup>1</sup>

<sup>1</sup>Faculty of Animal Sciences and Biotechnologies, Timișoara, România, [ana\\_driha@yahoo.com](mailto:ana_driha@yahoo.com) <sup>2</sup>A.P.I.A.C.L. Arad

In this experiment we have studied the bioproductives effects of energy-protein ratio at diferents levels of crude protein and methabolizable energy, concerning whith broilers age. The experiments was carried out from one day chicken which was feeded whith in three periods. First period from 1 day till 20 days, secod period from 21 dys to 30 days threed period from 31 till 48 days. The experiments was brought about in four experimental group. Each group was feeded differently concerning energy-protein ratio. At the 48 broilers was slaughtered and cutted into anatomical parts like breast in-bone, wings, thighs, back and neck and fat pad. For all period the chicken was weighted randomly periodically and also was estimated feed conversion and feed consuming.

**Keywords:** energy-protein ratio, feed conversion, comecial anatomical cutts, breast in bone, tights, fat pad

## THE MINERAL SUPPLEMENTATION OF POULTRY FEED IN ORGANIC FARMS (REVIEW)

### SUPLIMENTAREA MINERALĂ A HRANEI DESTINATĂ PĂȘĂRILOR CRESCUTE ÎN FERMELE ORGANICE

D. DRINCEANU, I. LUCA, LAVINIA ȘTEF,  
ELIZA SIMIZ, C. JULEAN, D.ȘTEF

*Banat's University of Agricultural Sciences and Veterinary Medicine,  
Timisoara – Romania, ddrinceanu@yahoo.com*

*In this paper work was made a review of possibilities to ensure the mineral requirements of poultry reared in organic farms from western area of Romania. Insufficient documentation related to the use of mineral resources in feeding the poultry reared in organic farms leads to the regarding of these as "chemicals" that may not be used for food. Therefore in this paper we proposed to introduce: - the need to use sources of macro and micro minerals to satisfy the requirements of different categories of poultry reared in organic farms; - the experience of advanced countries in this field and possibilities for design of local minerals premix in accordance with national and community legislation. It can be said that a ration for combined forages for poultry reared in organic farms in the western area of Romania it may be mineral equilibrated by respecting national and European regulations.*

**Keywords:** organic, mineral premix, poultry

## PRODUCTIVE PERFORMANCES OF TWO ITALIAN CROSSBRED PIGS FED HIGH ENERGY DIET

### PERFORMANȚELE PRODUCTIVE A DOI HIBRIZI ITALIENI DE PORCINE HRANIȚI CU RAȚII AVÂND NIVELE RIDICATE ÎN ENERGIE

R. FORTINA, CAROLA LUSSIANA, VANDA MALFATTO,  
A. MIMOSI, SONIA TASSONE

*Dipartimento di Scienze Zootecniche, Università degli Studi di Torino, Via L. da Vinci 44, 10095 Grugliasco, Italy, [riccardo.fortina@unito.it](mailto:riccardo.fortina@unito.it)*

*The aim of the trial was to compare the average daily gain (ADG), the carcass characteristics, and the meat and fat quality of 18 Italian crossbred pigs fed high energy diets formulated for improved genotypes (digestible energy: DE >14 MJ/kg DM). Nine "Fumati" crossbreds (Large White x Mora Romagnola; average initial live weight: 84 kg) and nine "Borghigiana" (Large White x Nera di Parma; average initial live weight: 90 kg), reared under similar environmental and nutritional conditions, were slaughtered at the average final weight of 180 kg (285 days). Calculated dry matter intake (DMI) and feed conversion index (FCI) were similar; no significant differences were observed with respect to average daily gain (ADG: 679 vs. 658 g/d). At slaughtering, the dressing percentage of the Fumati was significantly lower than that of the Borghigiana (80.9 vs. 84.5). The Fumati seemed more prone to fattening than the Borghigiana, as confirmed by the statistically higher percentage of belly (14.9 vs. 12.2), and fat (3.9 vs. 2.4) and marbling of *M. longissimus dorsi* (2.7 vs. 1.4). On colour analysis, the Fumati had statistically higher L\* and hue values, and lower a\* of *M. longissimus dorsi*. The fatty acid composition of meat was similar between crossbreds; backfat fatty acid composition of the Fumati showed a significantly higher percentage of saturated fatty acids (SFA), and lower amounts of monounsaturated and polyunsaturated fatty acids (MUFA and PUFA) than in the Borghigiana. Results showed that performances and meat quality of local crossbreds still bred in semi-intensive systems, like Fumati and Borghigiana, can be positively influenced when fed diets considered suitable for improved pig genotypes.*

**Keywords:** nutrition, pig crossbreds, performances, meat quality, fat quality

## THE CONSEQUENCES ON BLOOD GSH DYNAMICS ON WISTAR FEMALE RATS AT AD LIBITUM CHROMIUM (VI) ADMINISTRATION DURING THE GESTATION AFTER THE WEAN

### CONSECINȚELE APORTULUI DE CROM (VI) ASUPRA DINAMICII GSH-ULUI SANGUIN DUPA INȚARCARE, ADMINISTRAT FEMELELOR WISTAR, AD LIBITUM, ÎN TIMPUL GESTAȚIEI

CORINA GRĂVILĂ<sup>1</sup>, LETIȚIA STANA<sup>2</sup>, SNEJANA PETROVICI<sup>2</sup>, ALEXANDRA TRIF<sup>2</sup>

<sup>1</sup>Faculty of Animal Sciences and Biotechnologies, Timișoara, Romania, cgravila@animalsci-tm.ro

<sup>2</sup>Faculty of Veterinary Medicine, Timișoara, Romania

*Chromium (VI) is a widely used industrial chemical, extensively used in paints, metal finishes, steel including stainless steel manufacturing, alloy cast irons, chrome, and wood treatment. In nature chromium occurs in divalent, trivalent and hexavalent forms. Hexavalent chromium predominates over the trivalent form in natural waters. We have studied the influence of potassium dichromate (K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>) on blood GSH values in rats. This study was carried out on 28 Wistar adult female rats, divided in 3 experimental groups (E) and one control group (C). The rats were feed with 25ppm (LOAEL), 50ppm and 75ppm potassium dichromate, ad libitum, in drinking water, during the gestation. The control batch received tap water. Reduced glutathione (GSH) was measured quantitatively after the wean using a Perkin-Elmer spectrophotometer, through Beutler et al. method, at 412nm. This study reports that potassium dichromate exposure induced the depletion of blood GSH because Cr(VI) can generate reactive oxygen species (ROS). It can induce oxidative stress and toxicity.*

**Keywords:** GSH, potassium dichromate, oxidative stress, female rats.

## GLUTATHIONE DYNAMICS IN THE SECOND GENERATION YOUNG RATS BLOOD AS A CONSEQUENCE OF FEMALE EXPOSURE TO Cr(VI) INTOXICATION DURING GESTATION

### DINAMICA GSH-ULUI CELEI DE A DOUA GENERAȚII DE ȘOBOLANI MATURI DIN PUNCT DE VEDERE SEXUAL CONSECUTIV INTOXICĂRII CU Cr(VI) A FEMELELOR MAME ÎN TIMPUL GESTAȚIEI

CORINA GRĂVILĂ<sup>1</sup>, LETIȚIA STANA<sup>2</sup>, SNEJANA PETROVICI<sup>2</sup>, ALEXANDRA TRIF<sup>2</sup>

<sup>1</sup>Faculty of Animal Sciences and Biotechnologies, Timișoara, Romania, cgravila@animalsci-tm.ro

<sup>2</sup>Faculty of Veterinary Medicine, Timișoara, Romania

*Chromium compounds are found in the environment, due to [erosion](#) of chromium containing rocks and can be distributed by volcanic eruptions in food, water. Metals being non-biodegradable persist in the environment for a long period and cause serious ecotoxicological problems. Chromium, which exists in nature mostly in the trivalent form (Cr<sup>+3</sup>), is essential for activating certain enzymes and for stabilizing proteins and nucleic acids. We have studied the influence of the glutathione dynamics in the second generation rats blood, as a consequence of females chromium (VI) intoxication during the gestation. This study was carried out on 7 Wistar adult female rats, control group (C), 21 adult Wistar female rats, divided in three experimental groups (E) and their young rats. The rats were feed, during the gestation, with 25ppm (LOAEL), 50ppm and 75ppm potassium dichromate, ad libitum, in drinking water. The control batch received tap water. Reduced glutathione (GSH) was measured quantitatively after the wean using a Perkin-Elmer spectrophotometer, through Beutler et al. method, at 412nm. The study reports also the depletion of young rats blood GSH.*

**Keywords:** GSH, potassium dichromate, oxidative stress, young rats.

## ASPECTS REGARDING FUNGI INCIDENCE IN FIBROUS AND SILAGE FODDER

### ASPECTE PRIVIND INCIDENȚA CIUPERCILOR ÎN FURAJELE FIBROASE ȘI ÎN CELE ÎNSILOZATE

MARCHIȘ Z., NEGREA O., LADOȘI DANIELA, CÎMPEAN A.

*Universitatea de Științe Agricole și Medicină Veterinară Cluj-Napoca*

*The quantitative and qualitative mycological assessments in roughages and silo feeds display a tight correlation between the organoleptic characters and the number of fungi per gram of feed, thus, Lays and high quality silage, or medium quality silage, contain below  $8 \times 10^5$  fungi/g feed in contrast with the inferior ones in which the mycotic load  $7g$ , feed excudes several times, the above mentioned value.*

The ubiquitous presence of *Aspergillus*, *penicillium*, *mucor*, *Stachybotra* and *fusarium* in hays and silage stands witness for their pathogenic potentiality. In order to prevent the spread of mycoses and mycotoxicoses, several precaution measures are to be taken; thus it is recommendable that low quality fodder with strong organoleptic alteration, with over  $8 \times 10^5$  fungi/g feed be ousted from the nutrition of pregnant females, in lactation or young suffering from chronic diseases. These feeds are to be administered restrictively and in mixture with good quality feed, for the other categories of animals.

**Keywords:** fungi, fibrous, silage fodder

## BIOPRODUCTIVE EFFECT OF FEED ENERGO-PROTEIC RATIO ON CAPONS AND PULLETS IN RELATION WITH THE CARCASE CUTTING PARTS

### EFFECTUL BIOPRODUCTIV A RAPORTULUI ENERGO-PROTEIC DIN HRANA ASUPRA CLAPONILOR ȘI A PUICUȚELOR DE CARNE ÎN RELATIE CU PĂRȚILE ANATOMICE ALE CARCASELOR

P. OPREA<sup>1</sup>, ANA DRIHA<sup>2</sup>, D. DRINCEANU<sup>2</sup>, C. JULEAN<sup>2</sup>

<sup>1</sup>A.P.A.I.A. CL Arad, [petru\\_opr@yahoo.com](mailto:petru_opr@yahoo.com)

<sup>2</sup>Faculty of Animal Sciences and Biotechnologies, Timișoara, România

*In this experiment we have studied the bioproductives effects of energy-protein ratio at diferents levels of crude protein and metabolizabel energy, concerining whith broiler pulets and capons. The experiments was carried out on 80 fowls divided in four experimental groups ; (L1.1, L1.2, L1.3, and L1.3). In this experiment 40 subiects was capons and 40 was pullets. The used hybrid was Ross 308 because of his good versatility and productivity. The experiment was carried out in two phases of feeding program. First feeding stage was for gowing and begun at 54 days and was finished at 110 days. Second feeding stage was for finishing and begun at 111 days and finished at 130 days. At 84 days, we are proceeding for assessment slaughtering; therefore, we choose randomly 5 capons and 5 pullets for each groups. After slaughtering was made cutting by anatomical parts. Finaly was also carried out at slaughtering and cutting by anatomical parts. For all period we weighing all fowls and calculated feed conversion and mortality.*

**Keywords:** capons, pullets, energy-protein ratio, bioproductive indicces, compensatory growth

## BIOPRODUCTIVE EFFECT OF ENERGO-PROTEIC RATIO AT BROILERS FEEDED MONOPHASIAL

### EFFECTUL BIOPRODUCTIV AL RAPORTULUI ENERGO-PROTEIC LA BROILERI HRĂNIȚI MONOFAZIAL

P. OPREA<sup>1</sup>, ANA DRIHA<sup>2</sup>, D. DRINCEANU<sup>2</sup>, C. JULEAN<sup>2</sup>

<sup>1</sup>A.P.I.A.C.L. Arad, [petru\\_opr@yahoo.com](mailto:petru_opr@yahoo.com)

<sup>2</sup>Faculty of Animal Sciences and Biotechnologies, Timișoara, România

*In this experiment we have studied the bioproductives effects of energy-protein ratio at diferents levels of crude protein and metabolizabel energy, concerining whith broilers alloances. The experiments in carried out with monophasial feeding, with aim to become more prominent the effect of energo-proteic ratio. This kind of feeding is uncomon but that point out influences of energy and protein ratio effects. For that experiment was kept broiler hybrid Ross 308, which was divided in 3 pens, populated with 1150 birds each pen. The total number of birds is 3450. For all period was weighted weekly and randomly for each pen. For all period was calculateed feed conversion, daily gain and mortality. At a finaly of period was brought about cutting parts of carcass, because we want to observe the effects of protein and energy reflected in carcass anatomical cuts. In conclusion could be confirmed sensitive effects of food showed in valuables cutting parts of carcasses.*

**Keywords:** energy-protein ratio, bioproductive indicces, monophasial feeding, izocaloric feeding

## THE EFFECT ON BROILER INTESTINAL MUCOSA OF BARLEY NON- STARCH POLYSACCHARIDES (NSP)

### IMPACTUL POLIGLUCIDELOR NEAMIDONOASE (PNA) DIN ORZ ASUPRA MUCOASEI DIGESTIVE LA PUII DE CARNE

C. PANDUR<sup>1</sup>, LAVINIA STEF<sup>2</sup>, GABI DUMITRESCU<sup>2</sup>,  
D. DRINCEANU<sup>2</sup>, C. JULEAN<sup>2</sup>, D. ȘTEF<sup>2</sup>, LILIANA BOCA<sup>2</sup>

<sup>1</sup>Pro Feed București, [cosmin\\_pandur@yahoo.com](mailto:cosmin_pandur@yahoo.com), 0728909728

<sup>2</sup>Faculty of Animal Science and Biotechnology Timisoara

*One hundred and twenty broiler chicks were dived in four groups (CG, EG1, EG2 and EG3) and included in a 6 weeks in vivo experiment. They were separated according with the amount of barley present in their daily diet (0-40%), which will result in a higher amount of NSP administrated. During the first 3 weeks group EG3 received with 1.02% more NSPs and with 1.46% more within the period of 4-6 weeks (40% barley) compared to group CG. Similarly in the case of NSPi in the first 3 weeks we have and increase of 0.76 p% and for the last phase (3-6 weeks) the increase was with 1.21 p% compared to group ML. At intestinal level the hypertrophic processes are more intense for groups EG2 and EG3 compared to group CG. Thus, if in EG1, intestinal villi are high, they are very narrow and the mucosal chorion has "thin" aspect containing fine fiber with a conjunctive cell population reduced. However, in the case of EG2 and EG3, at the level of duodenal and jejunal mucosa and vilosity, epithelial disruptions are observed. We have also observed glandular development and in particular of the chorion which shows evidence of the vascular network hypertrophy with an increased number of fibroblasts switching to mio-fibroblasts, the lymphoid infiltrate thickened, the leukocytes infiltrate are present in both basal chorion and in the villi.*

**Keywords:** non starch polysaccharides, intestinal mucosa, broiler, barley

## IMMUNOMODULATOR AND NUTRITIONAL EFFECTS OF BIO-MOS

### EFFECTUL IMUNOMODULATOR SI NUTRITIONAL AL PREPARATULUI BIO-MOS

TATIANA RUGEA<sup>1</sup>, R. TRIF<sup>2</sup>, E. TIRZIU<sup>2</sup>, ILEANA NICHITA<sup>2</sup>,  
C. CUMPĂNĂȘOIU<sup>2</sup>, R. V. GROS<sup>2</sup>, MONICA SERES<sup>2</sup>

<sup>1</sup>DSVSA Timis, dsvtimis@dsvtimis.rdstm.ro

<sup>2</sup>Faculty of Veterinary Medicine Timisoara

*The Bio-Mos product, foraged for 90 days to growing chicken vaccinated against aviary infectious bursitis determined the stimulation of the immunological reactivity. Significant values for antibodies titer growing were recorded for the secondary immune response, thus demonstrating the tardily immunostimulator effect of Bio-Mos. The product stimulates the chicken growing performance.*

*The 90 days chicken mean weight in the experimental group was 12.5% higher than in the control group.*

The Bio-Mos product reveals a protector effect on the intestinal mucosa, this aspect being proved by the ascendant dynamic of the daily mean weight gain.

**Keywords:** broilers chickens, probiotics, immunomodulator, nutritional.

## THE NUTRITIVE EFFECT OF SOME FUNGAL POLYSACCHARIDES USED ON BROILER FEEDING

### EFFECTUL NUTRITIV AL UNOR POLIZAHARIDE FUNGICE UTILIZATE ÎN ALIMENTAȚIA BROILERILOR

TATIANA RUGEA<sup>1</sup>, E. TIRZIU<sup>2</sup>, R.V. GROS<sup>2</sup>, MONICA SERES<sup>2</sup>

<sup>1</sup>DSVSA Timis, dsvtimis@dsvtimis.rdstm.ro

<sup>2</sup>Faculty of Veterinary Medicine Timisoara

*In this study we determined the immunostimulant effect of an alcoholic total extract from Pleurotus ostreatus administered in 5 and 15% concentration to broiler chickens vaccinated against infectious bursal disease. The immunogen was represented by two vaccines (Biavac and Biaromvac) used in infectious bursal disease prophylaxis. Vaccination was made at the age of seven days in four groups of broilers. Laboratory tests results showed that fungal extract have a stimulant action upon average daily gain, the most conclusive results being registered in group treated with 15% Pleurotus extract.*

**Keywords:** broilers chickens, fungal polysaccharides, body weight.

# THE INFLUENCE OF “AVISTIM” PREMIX ADMINISTERED IN LAYING HENS DIET ON THE PRODUCTION PERFORMANCES AND EGG QUALITY

## INFLUENȚA PREMIXULUI “AVISTIM” ADMINISTRAT ÎN HRANA GĂNILOR OUĂTOARE ASUPRA PERFORMANȚELOR DE PRODUCȚIE ȘI CALITĂȚII OUĂLOR

A. ȘARA<sup>1</sup>, M. BENȚEA<sup>1</sup>, ALINA NICULA<sup>2</sup>, ANCA BACIU<sup>2</sup>, L. CLAPA<sup>1</sup>

<sup>1</sup> USAMV Cluj- Napoca, [asara@personal.ro](mailto:asara@personal.ro)

<sup>2</sup> Applied Biotechnology Centre - Proplanta Cluj - Napoca

The goal of this study was the knowledge of avistim's influence administered in laying hens diet on the production performances, egg quality and the carotene content of eggs. The researches have been made on a number of 162 laying hens, hybrid Isa Brown, assigned in 3 batches of 54 hens/batch. In the feed of batch 2 (E) was added avistim premix 1 % and in the feed of batch 3 (E) was added avistim premix 2 %. The experimental period was 5 weeks, representing the second laying stage (age 56-61 weeks) following: laying intensity, the average egg weight, the fodder consumption per egg. To establish egg's quality, at the end of trial had been determined: egg structure, egg-shell quality, intensity of yolk's color and the carotenes content (La Roche method). The use of avistim determined the improvement of laying intensity with 3.86% at batch 3E, the improvement of egg weight with 6.08% at batch 2E and 1.23% at batch 3E, the reduction of fodder consumption per egg with 3.72% at batch 3E. Also we recorded the improvement of the weight and thickness of the egg-shell at the experimental batches, the improvement of yolk's color and the improvement of carotene content at batches 2E and 3E. We recommend the use of avistim premix in laying hens diets for the improvement of the production performances and the yolk pigmentation, which can influence the commercial value of eggs.

**Keywords:** premix, laying hens, production performances, egg quality

# THE INFLUENCE OF THE RELATIONSHIP BETWEEN ENERGY AND THE MAIN ESSENTIAL AMINO ACIDS OVER THE PRODUCTIV PERFORMANCES OF THE LAYING HENS

## INFLUENȚA RAPORTULUI DINRE ENERGIE ȘI PRINCIPALII AMINOACIZI ESENȚIALI DIN HRANĂ ASUPRA PERFORMANȚELOR PRODUCTIVE ALE GĂNILOR OUĂTOARE

ELIZA SIMIZ, D. DRINCEANU, ANA DRIHA, LAVINIA ȘTEF,  
C. JULEAN, SILVIA PĂTRUICĂ

<sup>1</sup>Faculty of Animal Sciences and Biotechnologies, Timișoara, România, [esimiz@yahoo.com](mailto:esimiz@yahoo.com)

*It is recommended to correlate the energetic level with the protein level in order to establish the nutritious characteristics of a mix forage (MF) and moreover its correlation to the essential aminoacids level. To establish the influence of the relationship of an essential aminoacid (AAe) to the metabolisable energy (ME), there was carried out an experiment at the Didactic Station of USAMVB Timisoara on 100 Shaver 579 hibrid layer hens. The hens were divided in four experimental groups and were administered diverse versions of the MF with an optimum level of metabolizable energy (to the NRC, 1994), but with different levels of crude protein (CP) and essential aminoacids, achieving various energo-proteic and energo-aminoacids relations. The best results, materialized by the weight mass-egg (50.07±2.33) but also by the specific intake obtain (2.55 kg /kg MF mass-egg) were observed to the group that had a reduced level of protein (15.2%) but supplemented with L-lisine and DL-metionin, having as a result the following data: 182 kcal ME/%CP, 2.96 g lisine/1000 kcal ME and 1.51 g metionine/1000 kcal ME.*

**Keywords:** laying hens, energy level, amino acids, energo-proteic relation, energo-aminoacids relation

# EFFECTUL POLIGLUCIDELOR NEAMIDONOASE DIN DIFERITE SURSE PROTEICE VEGETALE ASUPRA INDICILOR NUTRITIVI ŞI BIOPRODUCTIVI LA PUII DE CARNE

## EFFECT OF NON-STARCH POLYSACCHARIDES FROM DIFFERENT NUTRITIONAL PROTEIN SOURCES ON BIOPRODUCTIVE AND NUTRITIVE INDICES AT BROILER

LAVINIA ŞTEF, D. DRINCEANU, C. JULEAN, I. LUCA, D. ŞTEF,  
ELIZA SIMIZ, D. FOTA

<sup>1</sup>Banat's University of Agricultural Sciences and Veterinary Medicine, Faculty of Animal Sciences and Biotechnology, Department of Animal Nutrition, Email laviniastef@gmail.com, tel. 0722351672, fax 0256277110

*The purpose of this paper work was to establish the anti nutritive effect of non starch polysaccharides from different protean sources on nutritive and bioproductive indices at broiler chickens. The experiment was made on a period of six weeks, on 120 broiler chickens divided in four experimental groups (EG1, EG2, EG3 and EG4). Were formed four experimental groups: an experimental group EG1 fed with a forage at which the main protein source was soybean meal in proportion of 34% in the period from 0 to 3 weeks and 30.5% in the period from 3 to 6 weeks, an experimental group EG2 with high quality sunflower meal (36% CP) as protein source in proportion of 10%, an experimental group EG3 at which was used poor quality sunflower meal (27% CP) and an experimental group EG4 at which was used peas in proportion of 15%. At the age of 3 and 6 weeks was determined the nutritive and bioproductive indices. The highest forage consumption is registered at EG4 at which in the structure of combined forage was incorporated peas and it was with 8.69% greater comparative with EG1. The incorporation of poor quality sunflower meal determines a decrease in body weight with 6.16% comparative with the group at which was used soybean meal. The rising of NSPs and NSPt content after incorporating poor quality sunflower meal determines the rising of specific consumption at broiler chickens with 13.29% comparative with EG1 at which was used high quality soybean meal.*

**Keywords:** non starch polysaccharides, nutritive and bioproductiv indices, broilers, protein sources

## THE EFFECT OF CELLULOSIC CATEGORIES FROM COMBINED FORAGES WITH BARLEY ON BROILER CHICKENS EFFECTUL CATEGORIILOR CELULOZICE DIN FURAJELE COMBINATE CU ORZ LA PUII DE CARNE

RAMONA BIANCA TETILEANU<sup>1</sup>, D.DRINCEANU<sup>2</sup>, LAVINIA ŞTEF<sup>2</sup>, I.LUCA<sup>2</sup>,  
C.JULEAN<sup>2</sup>, VOICHITA GHERASIM<sup>2</sup>, T.G.A. BERLOVAN<sup>2</sup>

<sup>1</sup> Agency for Payments and Intervention in Agriculture (APIA) - Romania, ramona.berlovan@gmail.com  
<sup>2</sup> Banat's University of Agricultural Sciences and Veterinary Medicine, Timisoara - Romania

In this experiment we have studied the effect of cellulosic categories (NDF, ADF and ADL) from combined forages with barley on nutritive and bioproductive indices at broiler chickens. The experiment was carried out on six weeks on 90 broiler chickens divided in three experimental groups: CL, EG1 and EG2. At experimental group EG1 was incorporated barley in proportion of 20% in the structure of combined forage, at EG2 was incorporated 40% barley and at control group was not incorporated barley. At the age of 3 and 6 weeks were determined the nutritive and bioproductive indices. The highest forage consumption is registered at EG1 at which in the structure of combined forages was incorporated 20% barley and was greater with 12.24% comparative with control group. The incorporation of barley in the combined forages in proportion of 20 and 40% has no significant influence on body weight of broiler chickens from experimental groups. The rising of NDF, ADF and ADL content after the incorporation of barley in the structure of combined forages in proportion of 20 and 40% determined a rising of specific consumption with 5.74% at EG1 and 8.62% at EG2.

**Keywords:** cellulosic categories, barley, broiler chickens

# THE EFFECT OF CELLULOSIC CATEGORIES FROM COMBINED FORAGES WITH SUNFLOWER MEAL ON BROILER CHICKENS

## EFFECTUL CATEGORIILOR CELULOZICE DIN FURAJELE COMBinate CU SROT DE FLOAREA SOARELUI LA PUII DE CARNE

RAMONA BIANCA<sup>1</sup>TETILEANU, D. DRINCEANU<sup>2</sup>, LAVINIA STEF<sup>2</sup>,  
I. LUCA<sup>2</sup>, C. JULEAN<sup>2</sup>, VOICHITA GHERASIM<sup>2</sup>, T.G.A. BERLOVAN<sup>2</sup>

<sup>1</sup> Agency for Payments and Intervention in Agriculture (APIA) - Romania, ramona.berlovan@gmail.com

<sup>2</sup> Banat's University of Agricultural Sciences and Veterinary Medicine, Timisoara - Romania,

*In this experiment we have studied the effect of cellulosic categories from combined forages with sunflower meal on nutritive and bioproductive indices at broiler chickens. The experiment was carried out on 90 broiler chickens divided in three experimental groups: CG, EG1 and EG2. At control group was incorporated in combined forage 20% barley, at EG1 was incorporated 20% barley and 10% sunflower meal of good quality (36% CP) and at EG2 was incorporated 20% barley and 10% sunflower meal of poor quality (27% CP). At the age of 3 and 6 weeks were determined the nutritive and bioproductive indices. The highest forage consumption is registered at CG at which in the structure of combined forages was incorporated barley in proportion of 20% and was with 12.02% higher comparative with EG1 and with 5.9% higher comparative with EG2. The incorporation of barley and sunflower meal in the structure of combined forages fed to broiler chickens determines the reduction of body weight with 11.18% at EG2 and with 9.55% at EG1. The highest specific consumption is registered at EG2 and is with 6.52% higher comparative with control group.*

**Keywords:** cellulosic categories, sunflower meal, broiler chickens

## CONFIDENCE LEVELS AND/V.S. STATISTICAL HYPOTHESIS TESTING IN STATISTICAL ANALYSIS. CASE STUDY.

### INTERVALELE DE ÎNCREDERE ȘI/V.S. TESTAREA IPOTEZELOR STATISTICE ÎN ANALIZA STATISTICĂ. STUDIU DE CAZ.

ILEANA BRUDIU

USAMVB Timisoara, Department of Exact Sciences, România, [brudiu@yahoo.com](mailto:brudiu@yahoo.com)

*Estimated parameters with confidence intervals and testing statistical assumptions used in statistical analysis to obtain conclusions on research from a sample extracted from the population. Paper to the case study presented aims to highlight the importance of volume of sample taken in the study and how this reflects on the results obtained when using confidence intervals and testing for pregnant. If statistical testing hypotheses not only give an answer "yes" or "no" to some questions of statistical estimation using statistical confidence intervals provides more information than a test statistic, show high degree of uncertainty arising from small samples and findings build in the "marginally significant" or "almost significant" ( $p$  very close to 0.05).*

**Keywords:** confidence interval, significance testing, the sample volume.

## EXPERIMENTALLY-DERIVED FORMULA FOR COMPUTING SERUM OSMOLARITY IN PIGS

### STABILIREA EXPERIMENTALĂ A FORMULEI PENTRU CALCULUL OSMOLARITĂȚII SERICE LA PORCI

RODICA CĂPRIȚĂ, A. CĂPRIȚĂ

Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara, [rodi.caprita@gmail.com](mailto:rodi.caprita@gmail.com)

*The serum osmolarity mainly results from the inorganic ions and the small molecules and only in small extent from the protein ions. In serum sodium, potassium, chloride, bicarbonate, urea and glucose are the only components present in high enough concentrations to individually affect the osmolality. There are several different formulas for the calculation of human serum osmolarity. It has not been demonstrated which of the formulas is most effective for serum from various animal species. The goal of this study is to estimate the serum osmolarity in pigs from the concentrations of the main electrolytes and the glucose and urea content, and to establish the contribution of each osmotic component. Linear regression analysis was carried out to determine the best predictors of serum osmolarity in chickens. Two equations were also deduced for calculating serum osmolarity using manual regression analysis:  $y = 1.8117 Na + Urea + Glucose + 26.05$  and  $y = 1.8933 (Na+K) + Urea + Glucose + 4.93$*

**Keywords:** osmolarity, osmotic coefficient, chicken, linear regression analysis

## REFRACTOMETRIC METHOD FOR EVALUATION OF SOYBEAN PROTEIN SOLUBILITY

### METODĂ REFRACTOMETRICĂ PENTRU EVALUAREA SOLUBILITĂȚII PROTEINEI DIN SOIA

RODICA CĂPRIȚĂ, A. CĂPRIȚĂ, IULIANA CREȚESCU, VALERIA NICU

Banat's University of Agricultural Sciences and Veterinary Medicine Timișoara, [rodi.caprita@gmail.com](mailto:rodi.caprita@gmail.com)

*During the manufacture of soybean meal a quick control is essential, so that simple and rapid methods, to enable an immediate decision to be made, are of value. A simple and rapid method for estimating soybean protein solubility on the basis of changes in the refractive index of dilute potassium hydroxide solution extracts was tested and we found to be highly correlated with the usual protein solubility test in KOH ( $r = 0.9382$ ). Determination of biophysical parameters instead of chemical indices has two great advantages: the methods are nonpolluting since they don't use chemical substances, and the methods are very rapid.*

**Keywords:** soybean meal, KOH protein solubility, refractive index

# THE INFLUENCE OF ASOCIATED SUPPLEMENT OF ALFA AMYLASE AND XYLANASE ON THE RHEOLOGY OF DOUGH CONCERNING ITS CONSTITUTOGRAPHICAL PARAMETERS

## INFLUENTA ADAOSULUI ASOCIAT DE ALFA AMILAZA SI XILANAZA ASUPRA REOLOGIEI ALUATULUI PRIVIND PARAMETRI CONSISTOGRAFICI

RODICA CHEREJI<sup>1</sup>, C-TIN MATEESCU<sup>2</sup>, RODICA CĂPRIȚĂ<sup>2</sup>, IULIANA CREȚESCU<sup>2</sup>

<sup>1</sup>Sanitary Veterinary and Food Safety Department Bihor, Oradea, cherejirodica@yahoo.com

<sup>2</sup>U.S.A.M.V.B.Timișoara

*In this paper we determined the influence of associated supplement of alfa amylase and xylanase on the rheology of dough concerning its constitotographical parameters : maximum pressure ( $P_r$  max), (mb) and the absorbed water (Wa), %. The analysis on the consistograph were conducted for constant hydration at the consistency of 500 UF. Determinations were made on 4 types of flour and optimal dosages were found for each enzyme, after which we prepared the optimal dosage of the enzymes in the compound for flour F1 and F2 : P1-840000 U. SKB/100 kg flour +8100 U. FXU /100 kg flour, P2-840000 U. SKB/100 kg flour+16200 U. FXU, /100 kg flour, P3-840000 U. SKB/100 kg flour+24300 U. FXU/100 kg flour, and for F3 and F4 thus: P1-280000 U. SKB/100 kg flour +8100 U. FXU /100 kg flour, P2-280000 U. SKB/100 kg flour+16200 U. FXU/100 kg flour, P3-280000 U. SKB/100 kg flour+24300 U. FXU/100 kg flour. Fungous  $\alpha$ -amylase and xylanase were used in these concentrations to establish which one is more appropriate to be added in flour to obtain superior quality of bread: finer texture of the crumb, prolongation of the freshness of the bread, improvind the colour and flavour, emproving the slicing ability.*

**Keywords** :  $\alpha$ -amylase, xylanase, constituating parameters.

## RHEOLOGICAL MODELS USED TO CHARACTERIZE THE RUMINAL FLUID

## MODELE REOLOGICE UTILIZATE PENTRU CARACTERIZAREA FLUIDULUI RUMINAL

IULIANA CREȚESCU<sup>1</sup>, D. DRINCEANU<sup>1</sup>, C-TIN MATEESCU<sup>1</sup>,  
RODICA CĂPRIȚĂ<sup>1</sup>, RODICA CHEREJI<sup>2</sup>

<sup>1</sup>U.S.A.M.V.B.Timișoara

<sup>2</sup>Directia Sanitara Veterinara si pentru Siguranta Alimentelor Bihor, Oradea  
[icretescu@animalsci-tm.ro](mailto:icretescu@animalsci-tm.ro)

*From the literature data resulted that the high ratio of cereals from the feeding diets in ruminants led to the marked increase of the ruminal fluid viscosity. The studies from the present research were done on young sheep of the Tsurcana breed divided into two groups each comprising a number of nine heads, as follows: control group (LM) fed with feed diet composed of alfalfa hay 60% and barley 40%; the experimental group (LE) fed with the same basic feed diet but with an addition of yeast (1.5 g Saccharomyces cerevisiae, Yea-Sacc<sup>1026</sup> strain /head/day). Ruminal fluid was sampled from the ventral sack of the slaughtered animals and analyzed with a high-tech rheometer. The obtained data were modeled after the power law, Herschel-Bulkley, Volcado, Casson, Cross, Carreau. Modeling was done with the Table Curve program. A very good correlation was noticed between the experimental data and the rheological models. This suggests that the experimental data can be interpreted by any of the given models, and the simplest model was selected (power law) because it is the most used model. As well, this model is at the basis of the rheological fluid classification.*

**Keywords**: ruminal fluid, sheep, rheological models

# MICROSATELLITES ANALISIS FOR THE STUDY OF BIODIVERSITY AND TRACEABILITY OF THE PIG

## ANALIZA MICROSATELITILOR PENTRU STUDIUL BIODIVERSITATII SI TRASABILITATII LA SUINE

IUDITH IPATE<sup>1</sup>, G.BREM<sup>2</sup>, A.T.BOGDAN<sup>1</sup>, MONIKA GUTSCHER<sup>2</sup>, I. SEREGI<sup>3</sup>, G. F. TOBA<sup>2</sup>, L. ZOLDAG<sup>3</sup>, A. MAROTI-AGOTS<sup>3</sup>

<sup>1</sup>Romanian Academy- CSCBA

<sup>2</sup>Faculty of Veterinary Science Viena

<sup>3</sup>Faculty of Veterinary Science Budapesta

*Traceability of animals and animal products has a priority for governments of the European countries. The great development reached by the molecular genetic in last decades, has determined a high knowledge of the genome of the different species. The Deoxyribonucleic Acid (DNA) of each animal is different (with the exceptions of monozygotic twins and clones). Since the genome of each animal contains approximately three billion DNA units, the range for variation among the DNA sequences of animals is enormous, consequently DNA markers analysis allows assuring a traceability of 100% in the meat industry. A methodology using 17 ISAG (International Society for Animal Genetics) DNA microsatellite markers is proposed for meat traceability. Principal methods used to reveal DNA polymorphism are described as their applicability in species identification and meat traceability. The objective it was analysis the DNA profile of pig with 10 microsatellite markers and results of meat identity control.*

**Keywords:** genetic diversity, microsatellites

# GENES ASSISTED SELECTION AS INSTRUMENT OF THE BIODIVERSITY AND POOLING THE GENETIC DISEASES

## SELECTIA ASISTATA DE GENE (GAS) CA INSTRUMENT DE SELECTIE A BIODIVERSITATII SI PREVENIREA BOLILOR GENETICE

IUDITH IPATE<sup>1</sup>, G. BREM<sup>2</sup>, A.T.BOGDAN<sup>1</sup>, MONIKA GUTSCHER<sup>2</sup>, I. SEREGI, G.F.TOBA, S IVANA, L. ZOLDAG<sup>3</sup>, A. MAROTI-AGOTS<sup>3</sup>, M.PARVU<sup>4</sup>, N. POPESCU<sup>1</sup>

<sup>1</sup>Romanian Academy- CSCBA

<sup>2</sup>Faculty of Veterinary Science Viena

<sup>3</sup>Faculty of Veterinary Science Budapesta

<sup>4</sup>Faculty of Spiru Haret

*The objective it was analysis the prion protein for scrapie resistance genotyping as codon- amino acid at codon 136, 154, 171 from 5 known haplotypes resulting PrP Genotype. Tissue samples were collected at Institute for Research and Development Rusetu for study the scrapie resistance. Ovine scrapie is a member of the transmissible spongiform encephalopathies (TSEs), a heterogeneous family of fatal neurologic disorders characterized by deposition of an abnormal isoform (prion protein [PrP] PrP-Sc) of a cellular sialoglycoprotein in neural tissue.*

*One other objective it was analysis the stress resistance and F 18 + E.coli resistance of pigs. Tissue samples were collected at Institute for Research and Development Rusetu and from Romsuintest Peris. The results are favorable for use the genes assisted selection as instrument of the biodiversity and for selection the animals that are the positives characters.*

**Keywords:** scrapie resistance, stress resistance, genotype,

## IMPACT OF IODINE-CONTAINING PUMPKIN OIL ON THE COURSE OF CARDIAC ISCHEMIA IN THE RESIDENTS OF ZAKARPATTYA REGION

### IMPACTUL CONȚINUTULUI ÎN IOD AL ULEIULUI DE DOVLEAC ASUPRA ISCHEMIEI CARDIACE LA LOCUITORII REGIUNII ZAKARPATTYA

BALINT LYUBOV<sup>1</sup>, ROSTOKA LARYSA<sup>1</sup>, TURIANICA IVAN<sup>2</sup>, CHLEBO PETER<sup>2</sup>,  
CIZMAROVA MARTINA<sup>2</sup>, KULCICKY OLEG<sup>3</sup>

<sup>1</sup>*Uzhgorod National University, biochemistry and pharmacology department, Uzhgorod, Ukraine*

<sup>2</sup>*Slovak Agricultural University, human nutrition department, Nitra, Slovakia*

<sup>3</sup>*Institute for Gerontology of Medicine Academy Science of Ukraine*

E-mail: [rostoka@yandex.ru](mailto:rostoka@yandex.ru)

*The purpose of the research was exploration of the impact of the conventional treatment in combination with simvastatin and iodine-containing pumpkin oil "Fortuna vita" on the values of lipid metabolism in cardiac ischemia patients residing in the setting of iodine deficit. The patients were divided into 2 groups: group 1 – patients underwent conventional treatment with application of simvastatin of 20mg/day during the whole course of observation; group 2 – same treatment in combination with iodine-containing pumpkin oil "Fortuna vita" of 10ml/day, which contains 200µg of organically combined iodine form. The level of total cholesterol, triglycerides, high-density lipoprotein cholesterol (HDL cholesterol) and low-density lipoprotein cholesterol (LDL cholesterol) in serum, and aspartate aminotransferase and alanine aminotransferase in patients before treatment, after 10 days, and after 1 month of treatment was measured. It was determined, that simvastatin is an effective and safe cholesterol-reducing preparation for cardiac ischemia patients which results in reduction of cholesterol level by 18% and LDL by 23% in one month. A combination of simvastatin and iodine-containing pumpkin oil appears more effective, probably because of potentiation of their effects, which also facilitate growth of antiatherogenic HDL and consequently decrease the atherogenicity coefficient. The general clinical state of both groups improved as a result of the treatment, though more so for the patients treated in combination with iodine-containing pumpkin oil. We are inclined to explain this fact by normalization of iodine-thyroid status, and consequently, of the general metabolism of the patients in the setting of ecologic iodine deficit because of iodine-containing fatty acids.*

**Keywords:** cardiac ischemia, simvastatin, cholesterol, lipoproteins, iodine-containing oil

## SOME STUDIES ABOUT CEREALS BEHAVIOR DURING FREEZE DRYING PROCESS

### CÂTEVA STUDII DESPRE COMPORTAMENTUL CEREALELOR PE DURATA USCĂRII PRIN CONGELARE

GABRIELA-VICTORIA MNERIE, D. MNERIE, D. ȚUCU

*POLITEHNICA University of Timișoara, Mechanical Faculty, Department of Mechanical technology, Romania,*  
[Gabi.Mnerie@gmail.com](mailto:Gabi.Mnerie@gmail.com)

The paper presents some special method and equipment and the principal advantages of freeze-dried food. The freeze drying is a good method of freeze-drying for make some experiments with many kind of cereals, for the improvement that in food production. It is necessary and is possible to study the corn oil extract, wheat flour, the maltodextrin from corn, modified cornstarch, spice extracts, soy sauce, hydrolyzed wheat gluten, partially hydrogenated soybean and cottonseed oil etc. That is very porous, since it occupies the same volume as the original and so rehydrates rapidly. There is less loss of flavour and texture than with most other methods of drying.

**Keywords:** freeze-drying, cereals, equipment, maltodextrin,

## THE INFLUENCE OF FREEZING ON THE BIOLOGICAL VALUE OF BERRIES

### INFLUENȚA CONGELĂRII ASUPRA VALORII BIOLOGICE A AFINELOR ȘI STRUGURILOR

MÁRIA NÉMETH- BALOGH, I. TURIANICA, BRIGITA PAULOVICSOVÁ

*Department of Human Nutrition, Slovak University of Agriculture, Nitra, Slovakia,  
e- mail: riabalogh@gmail.com*

*The objective of our research was to observe the influence of freezing on the biological value of selected berry samples according to their antiradical activity, content of anthocyanins and vitamin C. The content of vitamin C (method by Lásztity and Törley, 1987), anthocyanins (method by Fuleki and Francis, 1968) and antiradical activity (method by Brand- Williams et al., 1995 and Sanchéz- Moreno et al., 1998) were analysed both in frozen and fresh berry samples. In general, the average contents of vitamin C, anthocyanins and values of antiradical activity in the fresh and frozen berry samples are not significantly different. Freezing of fresh plant materials to  $-18\text{ }^{\circ}\text{C}$  is suitable for preservation of their basic biological properties (content of anthocyanins, vitamin C and antiradical activity). These plant materials can be used for direct consumption and also to rise the biological value of human nutrition.*

**Keywords:** freezing, anthocyanins, vitamin C, antiradical activity, berries.

## THE EVOLUTION OF THE LABOUR MARKET IN ROMANIA'S WEST REGION

### EVOLUȚIA PIETEI MUNCII ÎN REGIUNEA 5 VEST A ROMÂNIEI

MANUELA-DORA ORBOI<sup>1</sup>, A. BĂNEȘ<sup>2</sup>, MIRELA MONEA<sup>3</sup>, A. MONEA<sup>3</sup>

<sup>1</sup>*Teaching Staff Training and Social Human Sciences Department, Timisoara, Romania,  
manuela\_dora@yahoo.com,* <sup>2</sup>*Department of Exact Sciences, Timisoara, Romania,*

<sup>3</sup>*Faculty of Science, University of Petrosani, Petrosani, Romania*

*In the past years, the population of the West Region has experienced a decline, under the mixed influence of the different level of the natural growth, domestic migration flows and intense external migration. The demographic and economic effects of the reduced young population will be felt in time and will lead to changes in subpopulations (school population, fertile age population, employable population). The effects of the demographic aging process upon the development of the economic and social life have been felt after 2005, when the generations born after 1990 joined the employable population. The transition to the market economy has had a strong impact on the characteristics of the labour market, causing significant changes in the size and structure of the main labour force indicators (activity rate, employment rate, unemployment rate).*

**Keywords:** active population, employed population, unemployment, activity rate, employment rate

## THE NATURAL MOVEMENT OF POPULATION IN THE NORTH-WEST REGION OF ROMANIA

### MIȘCAREA NATURALĂ A POPULAȚIEI ÎN REGIUNEA NORD-VEST A ROMÂNIEI

MANUELA-DORA ORBOI<sup>1</sup>

<sup>1</sup>Teaching Staff Training and Social Human Sciences Department, Timisoara, Romania,  
manuela\_dora@yahoo.com

*From the perspective of human development indicators during the past 15 years, Region North-West has undergone a series of negative processes, which are the most significant demographic decline due to negative natural growth and increased migration of people, especially those assets. Region North-West faces a negative demographic trend, with life expectancy of 71.38 years, the national average (72.22 years) with high external migration, especially of highly qualified workforce. Analysis of employment trends of population in Region North-West shows a downward trend and projections for the development for years emphasized the decrease in employment. Estimates on the evolution of the population in Region North-West during 2005-2013 reveals a total population decreased by 4.2%.*

**Keywords:** population, birth rate, mortality, natural growth, life expectancy

## ANTIOXIDANT PROPERTIES OF SELECTED LESS COMMON FRUIT SPECIES

### PROPRIETĂȚI ANTIOXIDANTE A UNOR SOIURI DE FRUCTE MAI PUȚIN FRECVENTE

BRIGITA PAULOVICSOVÁ<sup>1</sup>, I. TURIANICA,<sup>2</sup> TÜNDE JURÍKOVÁ<sup>3</sup> MÁRIA  
BALOGHOVÁ<sup>2</sup>, J. MATUŠKOVIC<sup>4</sup>

<sup>1</sup>Regional Veterinary and Food Administration, Štúrova 5, 945 01 Komárno, Slovakia, bpaulovics@gmail.com

<sup>2</sup>Department of Human Nutrition, Slovak University of Agriculture in Nitra, Tr. A. Hlinku 2, 949 76 Nitra, Slovakia, ivan.turjanitsa@uniag.sk

<sup>3</sup>Institut of Natural and Informatics Sciences, Constantine the Philosopher University, Dražovská 4, 949 01 Nitra, Slovakia, [tjurikova@ukf.sk](mailto:tjurikova@ukf.sk)

<sup>4</sup>Department of Pomology, Viticulture and Enology, Slovak University of Agriculture, Tr. A. Hlinku 2, 949 76 Nitra, Slovakia, [jan.matuskovic@post.sk](mailto:jan.matuskovic@post.sk)

*The aim of this study was to determine the anthocyanins, ascorbic acid content and the antiradical activity in less common fruit species native in the territory of Slovakia (black mulberries, cornelian cherries, blackberries, blackthorn, rowanberries) and honeyberries (*Lonicera kamschatica*) originated from Kamtschatka. Anthocyanins were evaluated after extraction from solid materials with acidified ethanol or after direct solution of liquid samples with HCl in ethanol solution by spectrophotometer measurement. To evaluate the antiradical activity, a spectrophotometer method based on the reaction of antioxidants with a stable radical 2,2-diphenyl-1-picrylhydrazyl (DPPH•) in methanol solution was used. The reduction properties of ascorbic acid are used in the measurement. The highest value of anthocyanin pigments was found out in honeyberries (*Lonicera kamschatica*) of all analyzed clones. Black mulberries of the genotype M104 and cornelian cherries of the genotypes 55 a 44 are the most significant sources of ascorbic acid among analysed less common fruit species. It is an interesting fact that blackthorns (*Prunus spinosa*) containing the lowest value of ascorbic acid ( $10.31 \pm 1.016 \text{ mg} \cdot 100 \text{ g}^{-1}$ ) and medium value of anthocyanins ( $1.71 \pm 0.08 \text{ g} \cdot \text{kg}^{-1}$ ) shows the highest level of antiradical activity ( $461.25 \pm 3.69 \% \approx EC_{50} = 0.1084 \pm 0.0101$ ). A similar phenomenon was observed in honeysuckles, too. According to these results we can suppose that another flavonoids (flavonols, flavons and flavanols) can also significantly contributed to antiradical activity of the blackthorns and edible honeysuckles. In summary, analysed less known fruit species are important sources of nutritive compounds, particularly anthocyanins, ascorbic acid and show significant free radical scavenging ability.*

**Keywords:** Berries. Anthocyanins. Vitamin C. DPPH

## THE ZOO-ECONOMIC CHALLENGES OF FISCAL DUMPING

### PROVOCĂRILE ZOO-ECONOMICE ALE DUMPINGULUI FISCAL

SÂRBOVAN MARINA LUMINIȚA

*Faculty of Economic Sciences, "Tibiscus" University of Timișoara, Romania*

*In United Europe, the economic policy proves common goals of prosperity and development, still each country is administrating its own policy mix in order to reshape the fiscal pressure and to safeguard the economic body of the society. The fiscal dumping is a feature of the market competition concerning the non-co-operating actions taken among the economic agents targeted to increase the fiscal appealing of their (home-land) territory by instrument of apparently favoring fiscal policies. In Romania this disguised tool of the policy promotion is mixed with an explicit expectation of rural and agriculture subvention, abundant in SMEs and rural fields, in line with the local needs of increasing the foreign investments and consolidating growth*

**Keywords:** fiscal dumping, policy promotion, growth

## THE INFLUENCE OF POTASSIUM DICHROMATE Cr (VI) ADMINISTRATION DURATION ON GLOBULAR RESISTANCE IN FEMALE RATS

### INFLUENȚA DURATEI DE ADMINISTRARE A BICROMATULUI DE POTASIU Cr(VI) ASUPRA REZISTENȚEI GLOBULARE LA FEMELE DE ȘOBOLAN

LETIȚIA STANA<sup>1</sup>, ALEXANDRA TRIF<sup>1</sup>, SNEJANA PETROVICI<sup>1</sup>, LOREDANA GABRIELA  
STANA<sup>2</sup>, CORINA GRĂVILĂ<sup>3</sup>

<sup>1</sup> *Faculty of Veterinary Medicine, Timișoara Romania*

<sup>2</sup> *University of Medicine and Pharmacy, Timișoara, Romania*

<sup>3</sup> *Faculty of Animal Sciences and Biotechnologies, Timișoara, Romania*

*The „in vivo” experiment has had as aim the study of different Cr(VI) doses administration on globular resistance in female rats related to administration duration. Study was carried out on 56 female rats divided in 8 groups, 6 experimental and 2 control that received potassium dichromate in drinking water in doses of 25 ppm, 50 ppm and 75ppm Cr(VI), for 3 months, respectively, 6 months. Decrease of globular resistance (in terms of haemolysis degree in hypotonic solutions) at increasing dose (up to 0.8% NaCl at 75 ppm dose) in all experimental groups, in direct relation with the duration of administration was registered. Control groups were in physiological limits. The results of the present study revealed the affecting of erythrocyte membrane in function of administration duration and chromium intake level, because of oxidative lesions produced by it.*

**Keywords:** chromium dichromate, rats, globular resistance

# ERYTHROCYTE MEMBRANE RESISTANCE IN ADULT FEMALE RATS EXPOSED TO POTASSIUM DICHROMATE (Cr VI) IN UTERO, DURING SUCKLING AND PRE-PUBERTY PERIOD

## REZISTENȚA MEMBRANEI ERITROCITARE LA FEMELE DE ȘOBOLANI ADULTE EXPUSE LA BICROMAT DE POTASIU Cr(VI), IN UTERO, PE PERIOADA DE SUGAR SI PREPUBERTATE

LETIȚIA STANA<sup>1</sup>, ALEXANDRA TRIF<sup>1</sup>, LOREDANA GABRIELA STANA<sup>2</sup>, SNEJANA PETROVICI<sup>1</sup>, MIHAELA PETCU<sup>1</sup>

<sup>1</sup>Faculty of Veterinary Medicine, Timișoara Romania, stana\_let@yahoo.com

<sup>2</sup>University of Medicine and Pharmacy, Timișoara, Romania

*The aim of the study was to relieve the impact of chromium hexavalent ions on the resistance of erythrocyte membrane in female rats at sexual maturity but exposed "in utero" or during the suckling or pre-puberty period. Concrete objectives were to establish the effect of 25 ppm (E<sub>1</sub> group), 50 ppm (E<sub>2</sub> group) and 75 ppm (E<sub>3</sub> group) chromium doses on haemoglobin (Hb) and erythrocyte membrane resistance (R.O.) (in terms of haemolysis degree in NaCl hypotonic solutions). The consequence of Cr(VI) exposure was the high significant decrease ( $p < 0,01$ ) of Hb in all E groups compared to control (C) (E<sub>1</sub>/C: -24.66%; E<sub>2</sub>/C: - 37.36%; E<sub>3</sub>/C: - 42.67%), under physiologic limits in E<sub>2</sub> and E<sub>3</sub> groups and at the lowest physiologic limit in E<sub>1</sub>. Maxim R.O. was equal in all groups and in physiologic limits. Minim R.O. decreased to 0.7% NaCl in E<sub>1</sub> and to 0.8% NaCl in E<sub>2</sub> and E<sub>3</sub>. It was asserted the increase of haemolyse degree in direct relation with the dose. Increasing the chromium intake level a haemolytic effect was induced.*

**Keywords:** chromium dichromate, rats, membrane erythrocyte