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Session 1 – oral presentations

Nutrition and gut health of the young pig around weaning: what news?

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ABSTRACT

Gastro-intestinal tract (GIT) disorders, infections and diarrhoea increase at the time of weaning in young pigs. Weaning is a complex step involving many stresses that interfere deeply with feed intake, GIT development and adaptation to the weaning diet. The European ban put on in-feed antibiotic growth promoters has stimulated research on the mechanisms of GIT disorders and on nutritional approaches for preventing or reducing such disturbances. From the data accumulated over the past years, it appears that products like spray dried plasma and various organic acids are among the most effective. Other substances under study are also providing promising results. Increasing numbers of studies with prebiotics and probiotics provide evidence for the potential of these approaches. Conversely, many plant extracts and natural substances, used alone or in combinations have given frequently inconsistent results in vivo, despite their demonstrated anti-bacterial effects in vitro. Therefore, additional work is needed for précising the bioavailability of such substances.

Key words: pig, weaning, gastro-intestinal tract, nutrition, alternative substances to antibiotics

Effect of initial weight on feedlot local breed cattle performance in the Mediterranean conditions

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ABSTRACT

This study was aimed to investigate the effects of initial weight and the performance of local breeds in feedlot in the Mediterranean conditions. Fifty eight (58) animals from two local breeds (Boz and Gak) were grouped into three according to their weights groups. Group 1 was composed of animals with liveweights ranging from 150-200 kg and Group 2, 200-250 kg and finally, Group 3, 250-300 kg respectively.

The performance of the animals was not affected by the initial weight. Boz breed animals performed better than Gak type of animals. Although there was no statistically significant affect of initial weight on feedlot performance of local breed cattle the results of this study may have practical and economical importance in terms of decision making process that in feedlot conditions it would be more profitable to start feedlot with the cattle weighing between 200-250 kg.

Key words: Beef Cattle, Feedlot, Initial weight, Performance,

Zearalenone effects on expression of enzymes involved in the xenobiotics detoxification.

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ABSTRACT

Zearalenone (ZEA) is a resorcylic acid lactone derivative produced by various *Fusarium* species that are widely found in food and feeds. It is known to exert oestrogenic effects in all animals tested but susceptibility varies according to species. These effects possibly reflect differences in the metabolic processing of ZEA, which predominantly involves reduction, hydroxylations, as well as conjugation with glucuronic acid.

The interaction of Zearalenone and its metabolites on the detoxification enzymes (especially P450) is important to be determined for a better understanding of the zearalenone metabolic pathway. In order to assess the detoxification enzymes expression we have used the quantitative RT-PCR for mRNA assessment.

First of all, we choose several enzymes of interest, by doing a bibliographical screening of the enzymes that are usually involved in xenobiotics detoxification. We choose 27 genes of interested that are coding proteins involved all along the cellular detoxification pathway: transporters, CYPs including aromatase, hydroxysteroid dehydrogenases, transferase, as well as receptors involved within the steroids (it is well known that Zearalenone is a estrogenomimetic).

The obtained results are not showing any kind of changes concerning the gene expression for the estrogenic receptors as we expected, but, in contrary, we observed significant changes of the gene expression linked to the transporters, especially the Pg-p (P-Glycoprotein) and minor changes in the expression of CYP 2C7.

We are presently working on the measurements of activities of these enzymes upon zearalenone treatments.

Effects of the whole grain, *Saccharomyces Cerevisiae* and yoghurt on performance and some organ characteristics in Turkeys

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ABSTRACT

In this experiment carried out on whole grain and probiotics on 200 turkey chickens, the following parameters were compared: weight of the body, carcass, liver, hearth, spleen, gizzard, full-empty of small intestine, sekum, length of small intestine and sekum. In addition, the effect of an probiotic preparation containing 1, 5 % *Saccharomyces cerevisiae* (3,44x10⁸ CFU/g) and ½ yoghurt-water. Were given by daily and twice in a week to the birds till the end of the experiment. At the end of experimental period 40 animals were slaughtered by sex and it was observed that there was no effect of probiotics and whole grain on body weights (P>0.05), on the other hand sex was found statistically different on body weights of animals (P<0.001). The evaluated results indicated that there were no statistical differences on different organs of the turkeys which fed on 1, 5 % *S. cerevisiae*, ½ yoghurt-water and whole grain treatments with body-organ weight and lengths of birds.

Key words: whole grain, pasture, *Saccharomyces cerevisiae*, yoghurt, performance, organs

Effects of prebiotic and mycotoxin binder feed supplementation on aged laying hens performance and egg quality

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ABSTRACT

The present study aimed to evaluate the effects of Bio-Mos[®] and Mycosorb[®] on the performance and egg quality of commercial laying hens approaching the end of the laying cycle. The trial was conducted at the Animal Husbandry Faculty's Experimental Farm in Iasi, Romania, during a period of 4 weeks. A total of 90 hens, 57 week old ISA Brown layers were allocated to a completely randomized experimental design with three treatments, with 30 birds each. Both groups received fodder additives given superior results, concerning the production performances, the internal and external egg quality.

Key words: Bio-Mos[®], Mycosorb[®], laying hen performance

Effects of aniseed (*Pimpinella anisum L.*) on egg production, quality, cholesterol levels, hatching results and the antibody values in blood of laying quails (*Coturnix coturnix japonica*).

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ABSTRACT

This study was carried out to determine the effects of Aniseed (*Pimpinella anisum*) on egg production (EP), egg weight (EW), egg cholesterol levels (ECL), egg quality [egg shell tickness (EST) and haugh unit (HU)], feed consumption (FC), feed conversion ratio (FCR), hatching results (HR) and antibody levels in serum (after vaccination to against New castle virus) of laying quails. A total of 180 laying quails were divided into six groups. One basal diet was used in the experiment. There were 5 experimental groups which were supplemented with aniseed as follows: Group I; 1 %, Group II; 2% , Group III; 3% , Group IV; 4%, Group V; 5%, respectively. The control group received no aniseed. Experiment was lasted in 13 weeks. There were statistical differences among the groups in terms of FC,FCR and EW ($P<0.01$) except the EP, ECL HU, EST and HR. Antibody levels were increased by aniseed positively($P<0.05$). It is concluded that the aniseed could be used up to 4 % level in laying quail diets.

Keywords: aniseed, egg, quail, hatching, cholesterol

Session 2 – oral presentations

Effects of probiotic and organic acid on performance and some tissue in broiler chicks

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ABSTRACT:

Tan experiment was conducted to study the effects of probiotic (P) and organic acid (OA) on performance and some tissue in broiler chicks. Seventy two 1-d-old (male and females) broiler chicks (Ross PM) consisted of 4 groups (Control, 02 % Probiotic (*Saccharomyces cerevisiae*), 04 % OA and 02 % P + 04 % OA, each of which had 25 chicks. In conclusion, the analysis of the data indicated that no significant effect between the groups was found in body weight, feed intake, hot carcass, gizzard, liver

and large intestine weight, but a significant difference in small intestine weight was observed ($P < 0.001$). According to the results of this study, it was found that the provision of mentioned probiotic or organic acids to the diet of broiler throughout 42 days had no effect on performance.

Key Words: Chicken, probiotic, organic acid, organ weight, performance

Effect of Cr picolinate and Zn supplementation on plasma cortisol and some metabolites' levels in mutton Charolais hogget during acclimatization

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ABSTRACT:

The effect of Cr and Cr+Zn treatment on adrenal response to stress in newly imported Mutton Sharolais hoggets after the quarantine period was investigated. Chromium and Cr+Zn implication in carbohydrate and protein metabolism as evidenced by the levels of some metabolites was studied, too.

Eighteen one year old Mutton Charolais hoggets were divided into three groups: control group, Cr and Cr+Zn experimental groups given supplemental dietary Cr picolinate and $ZnSO_4 \cdot 7 H_2O$ respectively. Plasma cortisol, glucose, cholesterol, urea and indol levels were measured.

Supplemental Cr+Zn caused cortisol decline by 2nd and increase by 9th day, but didn't have any influence on 5th day. Chromium alone had no significant effect on plasma cortisol level by 2nd day but increased cortisol level by 9th day. Plasma glucose level was not influenced by supplemental Cr or Cr+Zn. Supplemental Cr+Zn caused significant decline in plasma cholesterol, urea and indol levels by 2nd day. It is suggested that the enumerated effects of supplemental Cr+Zn are mediated via hypothalamic-pituitary adrenal axis.

Key words: Chromium, zinc, hoggets, cortisol, glucose, cholesterol, urea indol

The effects of nonylphenol on growth, egg production and hatching results in the quail

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ABSTRACT

This study was carried out to determine the effects of nonylphenol (NP), a derivative of (APEs), on growth, feed conversion ratio, egg production, and hatching in quails. Quails were exposed to 0 (control), 10, 100, 500, 1000 and 5000 µg NP/kg feed. Data were analyzed by one-way ANOVA followed by TUKEY's test. Results showed that nonylphenol did not have significant effect ($P>0.05$) on growth and feed conversion ratio in quails among all groups in the first six weeks of treatment. Although nonylphenol did not have significant effect on egg production and feed consumption in layers after six weeks of treatment, there was a significant reduction in egg production after ten weeks of treatment in quails exposed to the highest concentration of NP ($P<0.05$). It was also determined that nonylphenol did not have significant effect on hatching results ($P>0.05$). In conclusion, it can be said that NP could have adverse effects on egg production when quail exposed to higher concentrations of NP in a longer period of time.

Keywords: nonylphenol; quail; growth; egg

The use of oregano (*Origanum vulgare*) in laying quails (*Coturnix coturnix japonica*) (2): The effects of oregano on performance, carcass yield, liver and some blood parameters

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ABSTRACT

Nowadays, the natural ways of nourishment attract attention of people and more emphasis on the natural ways of animal feeding suitable to the nature of their species is done. Studies regarding animal feeding based on aromatic plants parallel to their natural requirements became an interesting research topic, particularly after antibiotic supplementation to diets was banned in Europe at the beginning of 2006. This study was carried out to determine the effects of Oregano (*Origanum vulgare*) on food conversion

ratio, egg production, egg weight, carcass yield and liver weights, blood cholesterol, HDL, retinol, β -carotene, nitricoxide, total protein and glucose in laying quail. Totally 216 laying quails (*Coturnix coturnix japonica*) were divided into six groups, each of 36 birds. The experimental groups which were supplemented oregano were as follows: Group I; 1 %, Group II; 2%, Group III; 3% , Group IV; 4%, Group V; 5%, respectively. The control group received no oregano. Significant differences were examined among the groups by one-way ANOVA followed by Duncan test. There were no significant differences between the groups regarding food conversion ratio, egg production, egg weight. In addition, no difference was observed during the organoleptic control of the carcasses as well as the blood parameters, the total cholesterol, HDL, Retinol, β -carotene, nitricoxide, total protein and glucose values among the groups. As a result, no detrimental effect of using oregano was observed on blood parameters and carcass quality in laying quails.

Keywords: Oregano, quail, carcass, blood

The effect of inoculation on the fermentation characteristics, aerobic stability and intake of grass-legume silage by dairy COWS

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ABSTRACT

The experiment was carried out to examine the influence of stimulating by microbial mixture (*Lactobacillus plantarum* Milab 393, *Pediococcus acidilactici* P6 and P11, *Eterococcus faecium* M74, and *Lactococcus lactis* SR3.54) treatment on the on the fermentation quality, aerobic stability and nutrient intake from legume-grass silage by dairy cows. Silages prepared from the first cut grass-legume sward consisting of ryegrass, red clover and fescue were offered to lactating dairy cows in feeding experiment. Silages were prepared in round bales, either untreated or treated with bacterial mixture at 5×10^5 colony forming units g^{-1} of fresh herbage and wilted for up to 10 h. Dairy cows were used in feeding experiment to evaluate utilization of nutrients. Silage inoculated with microbial mixture showed a lower final pH, significantly higher ($P < 0.05$) concentrations of total acids and lactic acid and numerically lower concentrations of butyric acid and ammonia-N than uninoculated silage. A higher fermentation quality of the inoculated silage decreased significantly ($P < 0.01$) fermentation (DM) losses and significantly increased ($P < 0.01$) energy concentration in silage DM. Inoculated silage was more aerobically stable than untreated. Inoculation increase DM intake of grass- legume silage and benefit of the inoculated silage was the rising in milk yield by 1.16 kg energy-correct milk per cow⁻¹ day⁻¹ compared with untreated silage.

Keywords: silage, inoculant, fermentation, aerobic stability, dairy cows, milk production.

Session 3 – oral presentations

Modification of potatoes, by either recombinant DNA technology or conventional breeding, affects their nutritional value for the rat

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ABSTRACT

The present study was conducted to compare the composition and nutritional value of two genetically modified potato lines, Desiree 35Svp60SEK-6 (Des-VP60) and Albatross GBSSctxBvp60SEK (Alb-VP60), and their conventional parental counterparts in a feeding experiment in rats. Both transgenic potatoes express the VP60 viral antigen (a major structural protein of the *Calicivirus* causing the rabbit hemorrhagic disease) as the ‘novel’ protein. The nutritional value of the diets was investigated based on weight gain, nitrogen balance, protein and amino acids digestibility, and changes in gut microbiota of rats fed for 14 days on a semi-synthetic diet supplemented with potato. The amount of potato to be in the diet was calculated on N basis. 15% N of diet protein was of potato origin.

The nitrogen balance study revealed differences in the nutritive values of both parental potato lines Des and Alb, these differences were also seen in the transgenic counterparts. The increased nutritive value of the Desiree lines in comparison with the Albatros lines is possibly due to the higher protein and lower starch content in Desiree relative to Albatros. Genetic modification of the two parental potato lines differentially affected the nutritive value of the transgenic potatoes. The genetic modification of the Desiree potato led to a significant improvement of N-balance and the total tract apparent crude protein digestibility, whereas N-balance and the other nutritional characteristics remain unchanged in the Alb-VP60 potato when compared with the parental Alb potato. The increased nutritional value of the genetically modified (GM) Des-VP60 potato compared to its parent strain was probably due to alterations in chemical composition of the potatoes that are caused by pleiotrophic metabolic effects related to insertion of a ‘foreign’ DNA sequences into the potato genome, rather than by biological effects of the expressed VP60 protein.

Keywords: genetically modified organisms (GMO), nutritional value of protein, rat, transgenic plant, VP60

Posibilitites of optimisation of Pizgauer cattle breeding program in Slovakia

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ABSTRACT

The Aim of the paper was to simulate TMI on three groups of traits: milk, meat and fitness, represented by traits: milk production, live weight at 210 days of age and length of production life and estimate trends. Flexible scheme of breeding program with use 70 % of young bulls in mating and Bulmer effect were taken into simulation with software R 2.0 plus. Short term results of TMI show positive trend of all selected traits. Average breeding value improvement during 20 years of breeding program was 139.24 kg milk, live weight 3.34 kg and LPL 0.1 year. Genetic improvement during breeding program is decreasing. Long term results expressed possibility to increase production of population as result of positive trend of breeding values, but this improvement is non-linear due to Bulmer equilibrium.

Key words: simulation, genetic improvement, total merit index, Bulmer equilibrium

Inbreeding in purebred Slovak Pinzgau dual-purpose cattle population

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ABSTRACT

The aim of the paper was to evaluate the level of inbreeding in the population of Slovak Pinzgau cattle and its economical influence to milk production traits. The average numbers of ancestors were 20.4 and 20.1 at the sides of sires and dams, respectively. The equivalent number of known generations was 3.19 – 1.21. Population of 5896 animals was evaluated, from which 3.6 % were inbred. The mean value of the inbreeding coefficient (F^x) was 3.077 %. Higher number of inbred animals was observed in the evaluated population compared to their ancestors, but the mean value of F^x decreased continuously from value of 13.28 % in the 3rd generation of ancestors to 2.48 % in base population. Animals with coefficient of inbreeding lower than 0.01 can be treated as outbreed. Increased inbreeding had negative impact on SPI and EBV of milk, fat and protein production. It was observed inbreeding depression -39.60 SKK of SPI, 8.95 kg in EBV of milk, 0.37 kg in EBV of fat and 0.36 kg in EBV of protein.

Key words: Pinzgau, endangered breed, inbreeding,

Study of some reproductive traits and investigation of the Booroola (*FecB*) and Inverdale (*FecX^l*) mutations in two Greek sheep breeds

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ABSTRACT

The aim of this study was to investigate some reproductive traits and the Booroola *FecB* and Inverdale *FecX^l* mutations in the prolific Chios and non-prolific Florina Greek sheep breeds. In 25 ewes of each breed, oestrous behaviour, oestrous return, lambing percentage, ovulation rate, prolificacy and percentage of still-born lambs were monitored during 2 successive years. In addition DNA samples from these animals were screened by PCR-RFLP in order to investigate the presence of the *FecB* and the *FecX^l* mutations of the *BMPRII* and the *BMP15* genes respectively. Both ovulation rate (2.37 ± 1.01 vs 1.79 ± 0.63 , $P < 0.05$) and litter size (1.93 ± 0.76 vs 1.34 ± 0.52 , $P < 0.01$) were higher in Chios than in Florina ewes. The molecular results indicated that none of the mutations was present in the two breeds. These PCR-RFLP tests were found to be a very useful tool for future breeding plans for increased fecundity by introgression of major genes into Greek sheep breeds.

Influence of the mulberry tree variety onto the efficiency of the leaf nutrients utilisation by the *Bombyx mori* larvae

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ABSTRACT

During the experiments performed upon different types of mulberry tree, the mean ratio between the dry substance from the ingested leaf and the dry substance gathered by larva in the form of body matter, during all the larva period, was 4.6901, in this case, the efficiency of conversion of ingested food in the body matter of larva (ECI-body matter) being 21.81%.

As regarding the utilization of sustenance from the mulberry tree leaf in the silk shell of cocoons, the mean ratio between the ingested dry substance and the dry substance from the silk shell of cocoons was 10.5633, the efficiency of conversion of ingested food in silk shell (ECI-silk shell of cocoons) being, in this case, 9.47%.

Keywords: mulberry tree, nutrient, larvae

Design and develop software for fattening pigs diet formulation and optimisation to produce normal lipid meat for human consumption

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ABSTRACT

The design and development of software for fattening pig diet formulation and optimisation considering the lipid level of the feed ingredients aims to develop a logistic information support for the field research on the feed-primary consumers (pigs)-end consumers (humans) flow. This will allow the ready access of the users to the associated data base. The influence of the lipid ingredients structure on pig meat quality can be evaluated and its impact on the health of humans running risks of nutrition and metabolism disease

Keywords: feeding software, diet optimisation, improved pig meat lipid level.

Physiological parameters and plasma cortisol in exposed to sun buffaloes

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ABSTRACT

Ten lactating buffaloes were kept in a barn or exposed to direct solar radiation (air temperature 30.2 °C) for 12 h. Rectal temperature and respiratory rate were measured at 8 h, 11 h, 15 h and 20 h. Both RT and RR increased significantly at temperature – humidity index (THI)- 77.83, showing that the lactating buffaloes are sensitive to heat stress and are not able to maintain their core temperature within the thermoneutral zone. The same THI had no significant effect on rectal temperature elevation when the buffaloes were kept in barn. The obvious heat stress, assessed by the rate of RT and RR elevations, was not accompanied with an enhancement of plasma cortisol level. The unchanged plasma cortisol level in the buffaloes under heat is interpreted within the context of the hormonal integration and the modulating effect of hypothalamo-pituitary-adrenal axis on the other endocrine glands involved in the thermal homeostasis maintenance. These data demonstrate that lactating buffaloes need protection against the direct solar radiation.

Key words: lactating buffaloes, stress, thermoregulation, cortisol.

Traditional animal species and races, protection of origin, up to date raw materials and food products (Possibilities in the genetic management of indigenous animals)

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ABSTRACT

In Hungary in the last ten years the number of animals decreased significantly with most of the species. Some possibilities are presented by the help of which this decrease can be achieved with optimal exploitation of environment and other resources linked to animal breeding. Authors deal with preservation and development of feeding methods of poultry, pig and game races, based on grazing and extensive breeding. The protection of origin of food raw materials and regional specific foods are discussed at an up-to-date level. So the quality “from farm to fork” and the confidence can be ensured, and similarly to other EU-countries, the local marketing would be possible. Some races are presented and the “protected geographical denominations” demand is urged. Specific races and species are the traditional poultry, sheep, pig, cattle and game. The results of our efforts will be traditional, special food raw materials and products with particular taste, aroma and palatability.

Keywords: traditional (indigenous) animal species and races, protection of origin, local or regional products.

Note on Balkan sheep breeds origin and their taxonomy

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ABSTRACT

A correct breed identification, nomenclature, and classification are a sine qua non basis of an efficient Animal Genetic Resources management (improvement, conservation, utilization). For some objective, but also subjective reasons, many errors persist in this field. The same name is given to different breeds (Tsigai to Tsigai and Ruda), a breed have different name (Corkscrew horn Valachian have some six names), the breeds origin and their phyletic group confused (the Valachian breeds named Zackel-the name of *O. paleoegyptica* breeds), a.s.o. Practically does not exist a correct

phylogenetical breed classification. Draganescu (2006) underline that Farm animal taxonomy is now in a paradigm crisis, and proposed as a solution de zoological approach, a diagnostic key for breed identification and 3 sugested cladograms for the breeds of Balkan area. An attempt of EAAP (Simon 1993) to classify European breed by similarities, and to untroude also an international nomenclature was practically not continued by FAO, who overrate de efficiency of present molecular approach and underestimate the classical zoological taxonomical approach. Our attempts (1994-2006) to make some phyletic classification are just partial, reflecting some interesting aspects as least for us.

Poster session

Evaluation of content with lead and cadmium of feeds used in alimentation of a dairy cows

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ABSTRACT

The purpose of researches was to identify and evaluate the heavy metals content (Pb, Cd) in feeds, during 2006 agricultural year from a dairy cows farm in Iasi district. Lead and cadmium contents were assessed using atomic absorption spectrophotometry method in flame. In this period were analysed 65 samples of: corn, alfalfa and pasture hay, barley straw, sorghum, alfalfa, pasture, vetch, sunflower meal, wheat husks, brewery drugs, corn and alfalfa silage. The results shown that all of analyzed samples contained lead and cadmium. Average values of lead content in samples varied between 0.34 and 3.42 mg/kg, while the average values cadmium content was found within 0.047 and 0.328 mg/kg. These values were under the maximal limits established by the MAAP Ord. no. 120/2005.

Key words: lead, cadmium, feed, atomic absorbtion spectrofotometer

Hypothalamic neuropeptides and their anabolic/catabolic role in the energy homeostasis of the animal organism

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ABSTRACT

Energy homeostasis is achieved by an integrated neuro-humoral system. Recently, both molecular (neuropeptides) and appetite and body weight regulating paths were identified at the central and peripheral levels. According to their role, there are orexygenic neuropeptides (which stimulate the appetite) and anorexygenic neuropeptides (which inhibit the appetite). Neuropeptides are secreted in the hypothalamus and intervene actively to regulate the feeding behaviour of the animals.

Keywords: neuropeptides, feeding behaviour, neuromediators, feeding, anorexy, hyperphagy

Aspects concerning equine identification and recording in agreement with the European requirements

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ABSTRACT

The accession of Romania to the EU required the implementation of all the European norms in terms of animal identification and traceability.

The regulations on equines are included in OM 464 / 2006 on studbook organization, origin certification and equine trading, OUG 49/2006 regulating equine identification and recording, OM 502/3311/2006 concerning the procedure of equine identification and recording, the sanitary-veterinary norm of 15.02.2006 concerning equine movement, Law 514/2006 concerning modifications to OUG 49/2006. All these regulatory papers originate in the following European regulations: 90/426/EEC, 90/427/EEC, 93/623/EEC amended by 2000/68/EEC

Comparison between breeding values for milk production and reproduction of bulls of Holstein breed in artificial insemination and bulls in natural service.

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ABSTRACT

Breeding values of bulls in artificial insemination (AI) and bulls in natural service (NS) in the Czech Republic were evaluated. Examined bulls were of Holstein breed, born between the years 1996 and 2001. Concerning a breeding value for kg of milk (AI = 177.54; NS = 50.12) and a relative breeding value (EBV) for kg of protein (AI = 100.03; NS = 97.23) significant higher values ($p > 0.05$) in AI bulls compared to NS bulls were shown. Other indicators of milk production (kg, % of fat and protein) showed not significant values. NS bulls showed not significant more positive breeding values of reproduction indicators compared to AI bulls. Reproduction indicators involved in the research were: male fertility (AI = -0.45; NS = -0.02), female fertility (AI = -0.91; NS = 0.08) and a relative breeding value for fertility (AI = 99.95; NS = 102.1). Breeding values of AI bulls compared to NS bulls were significant higher in case of the milk production (kg Milk and RBV) but not significant lower in case of the fertility.

Key words: milk production, reproduction, natural service, artificial insemination, Holstein bulls

The use of elementary selenium in the combined fodder for broiler chickens

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ABSTRACT

Almost all off the foddors don't provide necessity in selenium. Micro supplements of selenium salts into chicken's ration favor stimulation of growth. The necessity in producing of mixed food with supplement of selenium for chickens is obvious. In our experiments, in using selenium supplements in mixed food for quick-growing chickens we got positive results in body mass, spending of foddors and preservation, but it is necessary to continue research.

Key words: nutrition, selenium, broiler chickens

Cattle feeding in the private farms of the Republic Moldova

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ABSTRACT

A model project for small dairy farms with 44 cattle, of which 20 dairy cows with an annual milk yield of 4,000-6,000 kg milk, was drawn in order to revitalise animal husbandry in the Republic of Moldova. The feed intake, feed conversion ratio and the diet formulation are analysed.

Effects of the mineral premix based on phosphate fritte with chelated bioelements on broiler performance

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ABSTRACT

The purpose of the study was to quantify broiler performance following the use of PM – BC 126 (mineral premix with chelated bioelements) produced by SC Cerasil SA, Oradea, in the compound feeds formulation. The biological test was conducted on 1040 COBB broilers, during 0-42 days of age. The broilers were assigned to 4 groups, a control (C) group and three experimental groups (E1, E2 and E3) with 260 broilers per groups (4 groups × replicates × 130 broilers). The broilers were phase-fed according to their age: start (0-14 days), grower-developer (15-28 days) and finisher (29-42 days) compound feeds formulations. For each stage of growth, based on the chemical analyses of the raw feed ingredients, compound feeds formulations (control formulations) were developed based on corn, soybean meal, full fat soy, fish meal, 0.5% vitamin premix and 0.5% classical IBNA premix (trace elements from inorganic salts). In the experimental groups, the classical mineral premix was replaced by PM – BC 126 as follows: 0.1% (E1), 0.5% (E2) and 1% (E3). The results show that PM – BC 126 can replace the classical mineral premix throughout the growth period (0-42 days); broiler performance was better (+3.21% up to 3.35% weight gain and 1.54%-2.05% lower feed conversion ratio). The cost of feed by kg of weight gain also decreased by 1.07% compared to the control group. The replacement of the classical mineral premix with 1% PM – BC 126 was not economically justified.

mineral premix with chelated bioelements, broilers, body weight, feed conversion ratio, economic efficiency

Bioconversion of organic waste by vermiculture, efficient method for environmental protection

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ABSTRACT

Investigations have been conducted in order to develop an efficient method to alleviate the ecologic state of the environment by the bioconversion of organic waste by vermiculture. This biological process produces valuable organic fertilizers, ecologic agricultural products safe for human consumption and improves the quality of the environment.

Keywords: organic waste, bioconversion, vermiculture, organic fertilizers

Influence of “Apifitostimulina” preparation on the live weight and hematological indices in suckling piglets

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ABSTRACT

Specific means have been increasingly used during the recent years to boost the organism resistance to diseases. One of these preparations is the Apifitostimulin. Three groups of 5 piglets each were formed, two were treated with 1.5 ml/kg live weight and the third (control) group received the same amount of saline. All groups received similar maintenance and feeding treatments. The experimental results showed that the Apifitostimulin had a beneficial action on piglet live weight.

Keywords: piglets, diseases, resistance, piglet weight

Alteration on the histological structure some organs induced by low levels of DON mycotoxin in weaned piglets

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ABSTRACT

Deoxynivalenol is a mycotoxin produced by fungi of the *Fusarium* genus, which are abundant in various cereal crops and processed grains. In order to establish the morpho-physiological changes caused by the mycotoxin DON upon various tissue types, we have taken samples from duodenum, liver, kidney, heart and spleen from 9 piglets

belonging to three experimental groups: group I – control, group II (experimental I – 0.5 ppm DON) and group III (experimental II – 1.5 ppm DON). Microscopic studies are revealing a series of morphostructural changes, for the experimental groups, as follows: desquamation processes in the villositar epithelium and some denudation (epithelium together with subjacent chorion) of the mucous arias too, hepatic dystrophic processes and enlargement of the capillaries with hemorrhagic arias in the liver, glomerulites and tubulonephrites accompanied by blood vessel enlargement with local hemorrhages in the renal parenchyma, miocardiocytes mild miolysis accompanied by endothelial cells alteration with the local blood extravasations, stroma development in spleen.

Key words: Deoxynivalenol, Fusarium, duodenum, liver, kidney, heart, spleen, microscopic analysis.

Effect of different feeding conditions and aging on meat tenderness in bulls

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ABSTRACT

18 crossbreed bulls progenies of Charolais or the three-breed (50% Charolais, 25 % Aberdeen Angus, 25 % Czech Fleckvieh) crossbred bull at the parental and Czech Fleckvieh at the maternal position were allocated at weaning to three groups to test the effect of extensive and intensive feeding conditions on tenderness of beef during aging period 2,16,30 and 44 d post-mortem. The highest Warner-Bratzler shear force was measured in the extensive group (3) WBSF=139 N on 2nd day post-mortem. The lowest value was for the intensive feeding group (1) on 44th day post-mortem WBSF=42 N. There was the significant difference in the factors interaction (feeding condition and aging). The slopes of the linear functions (WBSF~log aging time*diet) were -57, -60.8 and -24 for the 1st, 2nd and 3rd group, respectively.

Key words: meat, beef quality, MLLT, tenderness, Warner-Bratzler.

The testing of bulls from different lines of the Moldovan Black spotted with utilization of alleles *aeb*-locus

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ABSTRACT

It is presented the antigenic spectrum and alelofond AEB-locus of reproductive bulls from 5 lines of the type of Moldovan Black spotted bulls. It was found a high frequency of antigens A₂, B₂, G₂, G₃, I₂, O₂, Y₂, D', E'₂, G', O', Q', G'', C₁, C₂, E, X₂, F, H'.

The highest genetic similitude was found in line Rokmen and Astronavt ($r=0.8650$).

The alelofond of the studied lines in AEB-locus includes 95 alleles. The individual homozygote (C α) of lines of the type of Moldovan Black spotted bulls constitutes 6.8%.

Key-words: antigen, allele, AEB-locus, genetic similitude, genetic distance, homozygote level, frequency.

A new PCR-RFLP method for analyzing the *Cream* locus in horses

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ABSTRACT

In horses, basic colours such as bay or chestnut may be diluted to cream. A single point mutation in MATP gene is responsible for this. The mutation is localized in exon 2 of the MATP gene and determines the change of aspartic acid to asparagine in the encoded protein. Our objective is to develop an easy method to identify this mutation and then to examine the Cream locus in horse populations. We design primers to amplify only a 155bp fragment from the *MATP* gene with or without the single point mutation. The PCR products have been cut with Tsp509 I endonuclease and the restriction products were analysed by electrophoresis in agarose gel. Using the PCR-RFLP technique, we established an easy and efficient method that can be use to screen the Cream locus.

Key words: horse, cream colour, mutation, PCR-RFLP, sequencing.

Use of crossbreeding to produce superfine wool

IV. Characterization of the hybrids obtained in the third stage of crossing

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ABSTRACT

During the first stage of the experiment, Stavropoulos Merino ewes were mated to Australian Merino rams and during the second stage, the hybrids produced during the first stage and the Stavropoulos Merino ewes were mated to Pollwart rams. During the third stage of the experiment, the Stavropoulos Merino ewes that remained from the initial herd, the offspring from the first stage, which have ½ Australian Merino blood and the offspring from the second stage, which have ½ Pollwart blood were mated to Suseni Merino rams. The herd consisted of 30 Stavropoulos ewes, 64 female offspring having ½ Australian Merino blood, 34 female offspring having ½ Pollwart blood and 7 rams. The rams were used for mating for two consecutive years and 70 hybrid ewes were produced in two series. The average phenotypical values of the ewes used to start the third stage were: fleece finesse 22.90 microns, coat weight 5.31 kg, body weight 39.44 kg. The rams had the following values: fleece finesse 18.91 microns, coat weight 6.0 kg, body weight 52.57 kg. The hybrids that resulted from the cross had the following values: fleece finesse 21.02, coat weight 4.49 kg, body weight 34.42 kg. During this stage of crossbreeding, the fleece finesse was improved by 1.52 microns compared to the second stage and by 2.63 microns compared to the initial experimental stage, which supports the hypothesis of the paper.

Keywords: Merino, superfine wool, crossbreeding

Study concerning the contribution of BioR on some blood biochemical and reproduction function indices on the sire boars

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ABSTRACT

The objective of this study was to examine the effect of *Spirulina platensis* extract – BioR on any blood's biochemical and reproduction function indices of the sire boars. The biopreparation was introduced intramuscular, under 0,05% hydria solution in regime of 5 and 10 days in volume of 0,3 ml/boar/day. BioR induced a decrease of total

blood's lipids concentration; was considerable modified metabolism of triglycerides and β -lipoproteins; on BioR administration end in the III gr. (5 days x 0,3 ml/boar/day) have been observed an increase of triglycerides blood's concentration with 49,10%, while in the II gr. (10 days x 0,3 ml/boar/day) with 13,72% given the control; β -lipoproteins in the III gr. and II have been increased with 16,30% and 11,95%, respectively, given the control; inhibited the blood's lipid peroxidation, on boars from II gr. DMA blood concentration was smaller I with 21,61%, in the III – with 15,68% given the control; compared with the control group: the ejaculate volume have been increased, respectively, with 21,41% and 13,83% for the III and II groups; spermatozoa mobility have been increased, in the II gr. with 9,45% and – 9,22% in the III gr.; farrowing rate for sows, after first insemination with the semen collected from II group boars, have been prevailed with 4,57% control and for the sows inseminated with the semen material collected from the III group boars farrowing rate was higher with 3,29%; total number of piglets born was higher given the control with 9,13 and with 3,60% for II and III group, respectively.

Research on the qualitative interactions in pigs due to the transformation of lipids along the forage – animal food chain

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ABSTRACT

In order to improve meat quality, by increasing the level of linoleic acid, an experiment was conducted on 24 Large White pigs with initial weigh of 67 kg, assigned to two equal groups (C and E) fed for 42 days on two types of compound feeds. For C group we used conventional compound feeds (based on corn, full fat soy, soybean meal, sunflower meal), while for E group we used compound feeds made from organic cultivated plants (corn, sunflower meal, toasted soy beans, Camelina oil obtained by cold pressing with 46.71% linoleic acid anti oxidant premix based on Jerusalem Artichoke, nettle, buckthorn and flax meal). Growth performances have been taken into consideration, and at the end of the experiment 6 pigs from each group were slaughtered in order to determine fatty acids profile and cholesterol content of *longissimus dorsi* muscle and of the haunch. The forage had 9.05% ω 3 acid, and this lead to the modification of ω -3: ω -6 ratio in E group, reducing it from 1:28.55 in *l. dorsi* and 1:23.69 in the haunch, to 1:10.55 and 1:12.04. The cholesterol content (mg cholesterol / 100 g meat sample) has significantly decreased in E group from 37.6 in *l. dorsi* and 36.8 in the haunch, to 32.9 and 16.4.

Key words: pigs, Camelina, linoleic acid, linolenic acid, anti oxidant premix

How can we produce healthy beef in Hungary?

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ABSTRACT

In this study the opportunities for enhancing of the beneficial fatty acid in beef was examined. The effect of diet (extensive vs intensive diet, feeding concentrates are rich in *n*-3 fatty acids) and the breed (old: Hungarian Grey, dual purpose: Hungarian Simmental, dairy: Hungarian Holstein-Friesian) was investigated on the fatty acid composition of beef. Findings reveal that the extensive diet with linseed supplemented concentrate influenced the *n*-6/*n*-3 ratio and the CLA content of *longissimus* muscle more advantageous concerning human nutrition. The meat from Hungarian Grey (HG) and Hungarian Simmental (HS) contained more CLA and less *n*-6 fatty acids than that of Holstein-Friesian bulls. With the linseed supplementation in concentrate at the finishing phase of the maize silage fattening the *n*-6 and *n*-3 fatty acid ratio can be altered more beneficial whereas the slaughter and the carcass quality traits are not significant changed.

The use of X-ray computer tomography for slaughter value estimation of cattle

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ABSTRACT

The aim of this series of experiment was to examine the opportunity of application of X-ray Computer Tomography (CT) in cattle production. Altogether 176 animals of different breeds and genders were used in the study. Firstly, tissue composition of *M. longissimus dorsi* (LD) cuts between 11-13th ribs (n=136), was determined by CT and correlated with tissue composition of intact half carcasses prior to dissection and tissue separation. Correlation coefficients were calculated among slaughter records, tissues in whole carcasses and tissue composition of rib samples. Results indicate that tissue composition of rib samples determined by CT closely correlates with tissue composition results by dissection of whole carcasses. In Exp. 2 tissue composition of rib samples by CT (n=40) were compared to the results of EUROP carcass classification. Findings reveal that, CT analysis has higher predictive value in estimation of actual tissue composition of cattle carcasses than EUROP carcass classification.

Boron effect in counteracting the toxic effects of deoxynivalenol in weanling piglets

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ABSTRACT

Deoxynivalenol (DON) is one of the most known mycotoxine from the trichothecenes group responsible for an important pathology in both human and animals. This paper studied the effect of piglet feed supplementation with an organic boron derivate – calcium fructoborate (FB). The piglets were grouped into 4 groups: control, FB (4ml/day/animal), DON (1ppmDON), FB+DON (FB 4 ml/day/animal and 1ppmDON). The piglets were fed 24 days the respective treatments and in the end the animals were slaughtered after they were weighted and blood samples were taken. Our results showed that neither DON nor FB does induce a significant alteration of the animal performances, daily gain, the feed conversion and organ weight. Both FB and DON determined a significant decrease of the IgA concentration, but no effects were observed on the IgM or IgG concentration. Intoxication with DON for 24 days induced a significant decrease of the cholesterol concentration and an increase of the albumin concentration comparative with the control. The supplementation with the FB of the diet determined a significant decrease of the LDH concentration, while the rest of the serum parameters were not affected. The FB feed supplementation in DON intoxicated piglets determined the significant reduction of the triglyceride and LDH concentration (synergic effect with FB) and the significant increase of the albumin concentration (synergic effect with DON). Complementary studies (as cytokine synthesis) are necessary to have a complete image of the calcium fructoborate role in counteracting the DON effects on the immune response.

Comparative study on some Romanian and Bulgarian silkworm hybrids with the aim of their introduction in the family sericultural seed farms – I. economical characters of the egg and larva

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ABSTRACT

The study was carried out to evaluate 19 Romanian and Bulgarian hybrids, with the aim of their introduction in the family sericultural seed farms. The experiment was made at experimental base of the Commercial Society “SERICAROM” S.A. – Research Department Baneasa. Hybrids evaluation for the economical characters specific in egg and larval stage pointed out, on the whole, the following values: 493-641 eggs/laying; 1815-1986 eggs/1 g; 262-335 mg weight of the laying; 35.0 – 42.55 layings/1 box silkworm seed; 93.36-99.49% hatching percentage; 746-763 hours larval period; 92.48-96.88% pupation percentage. A high hatching percentage was determined in the hybrids: SK₂/F x S₈ (99.49%), AC/T x B₁ (99.33%), AC/T x S₈ (99.32%), V₃₅ x M₂ (98.90%), V₂₀₀₅ x V₆₄ (98.58%). The high values of the pupation percentage have presented the following hybrids: B₁ x AC/T (96.88%), AC/T x B₁ (96.64%), AC₂₉ x SK₂/F (96.48%), V₂₀₀₃ x V₂₀₀₅ (96.44%), V₃₅ x M₂ (96.36).

Key words: hybrids, laying, hatching, larval period, pupation percentage

Metabolic misbalance induced nutritionally in farm animals with biotin deficiency

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ABSTRACT

Biotin is very important metabolically because it acts as cofactor for enzymes that fix the CO₂. It is present in most feeds but its bioavailability differs very much. The diets formulated with macronutrients (glucid, proteins and lipids) induce vitamin deficiencies in the farm animals, particularly in the young animals. The paper presents the pathological modifications that can occur if deficient diets are used as well as the biotin requirement for the main species of farm animals.

Keywords: biotin, farm animals, feeding, vitamin deficiency

Comparative studies on the quality of buffalo milk from different areas of Romania

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ABSTRACT

Because the milk nutrients are in optimal levels, the milk is assimilated by the organism better than any other food. It can be consumed fresh or as dairy products enhancing the strength of the organism to infections and intoxications and improving the health state of the population. This paper evaluates the quality of the buffalo milk from three areas of Romania: Bistrita Nasaud (BN), Sibiu (S) and Satu Mare (SM), by determining the physical and chemical parameters of the milk: density, protein, fat and lactose. The average values on milk density (g/ml): 1.026(BN); 1.018(S) and 0.967(SM), and on milk protein (g/ml): 4.524(BN); 4.4545(S) and 4.628(SM) were not significantly different ($P < 0.05$) between the three areas of Romania. Significant differences ($P < 0.05$) were observed, however, in milk fat – average values (g/100ml): 8.524(BN); 7.868(S) and 8.651(SM), between the samples collected from Sibiu-Satu Mare and Sibiu-Bistrita Nasaud, and for lactose – average values: 5.785(BN), 4.630(S) and 4.821(SM), between the samples collected from Bistrita-Sibiu, and Bistrita-Satu Mare, respectively.

Keywords: quality, buffalo milk, chemical composition.

Trends in cattle production research as background to European welfare policy

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ABSTRACT

Scientific staff of Research & Development Institute for Bovine-Balotești has deduced out of agriculture European policy four main aims to be located to cattle production. They are: (i) balancing the milk and the beef production in the best way for the food security, (ii) protecting the public health by safety food through better hygienic technology and good animal health, (iii) protecting the natural environment and helping to increase the soil fertility (iv), as more sensible actions, protect the farm animals' welfare. On this base the research strategy of the Institute has in view to propose and develop projects pleading for rearing specialised dairy breeds, developing beef production by peculiar crossbreeding programs, best treatment of farm vestiges, new farming systems with less conventional energy consumption and free keeping of

animals. In this respect a schedule of one intended research project portfolio is presented.

Key words: cattle production, European policy

Influence of the nutritional additive OVOCAP on the productivity in lactating cows

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ABSTRACT

This study was conducted to test the effects of feeding supplemental Bulgarian nutritive additive OVOCAP® on milk production, milk composition and milk quality. Twelve lactating American Brown cows (BW = 695 ± 28 kg; at the beginning of the lactation) were separated to two treatments for 1,5 year. Cows were fed typical diets during the winter (corn silage, meadow hay, straw, wheat bran, potatoes and compound feed) and summer (pasture and compound feed). Experimental cows received in addition to concentrate part of daily ration per 2x22 ml OVOCAP® every 28 day post partum, as first doses were on 3/4 days post partum. Feed intake was similar in two groups. No differences were observed for milk yield under the influence of OVOCAP®. Overall, both milk composition and quality were influenced to better. This experiment demonstrated that OVOCAP® is adjusted to use in lactating cows with sure benefit on milk composition and quality.

Key words: milk production, milk composition, milk quality, cows, OVOCAP®, BG.

Effect of BIOPRO on the biochemical changes in the blood of sires

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ABSTRACT

This study was conducted to asses the effect of Bulgarian nutritional additive BIOPRO on the biochemical changes of ingredients of the blood of sires. The study were carried out in two different Stations for Artificial Insemination (SAI 1 and SAI 2) during the 3 year period (2004-2006). 108 blood samples were analyzed for content of total protein, blood glucose, Ca, P, Mg and Zn. The experimental protocol shows that during the years there were periods with or without additive to daily rations, composed by meadow hay (65%) and compound feed (35 %). The comparison of experimental

results from feeding the additive BIOPRO shows that the great relative effects was obtained on the level of Mg – 32% (SAI 1) and 18% (SAI 2), following by total protein – 8% (SAI 1) and 13% (SAI 2) and level of P – 7% (SAI 1) and 13 % (SAI 2). No effects were obtained on level of Ca and blood glucose had a tendency to lower. There was positive correlation between levels of Zn both in the blood and sperm.

Key words: total protein, glucose, Ca, P, Mg, Zn, blood, sires, BIOPRO, BG.

Researches concerning some enzymatic products utilization in chicken broilers feeding

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ABSTRACT

Basing on the research results, it could be stated that the chickens within experimental groups obtained higher values, as comparing to the negative reference treatment, especially concerning live weight and feed conversion ratio. When referring to positive control group, better results were found in the groups receiving Nutrikem Dry and Kemzyme MS products. Economically speaking, the T5 group achieved 44.43-69.97% better results than other groups, having meantime the best body development and the lowest value of the feed conversion ratio.

Best results, concerning all the observed parameters, were found at the chickens belonging to T5 groups, which received 500 g Nutrikem Dry /tone of feed.

Keywords: enzymes, broilers, feeding

On the impact of supplementary feeding in honeybee families in winter and spring

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ABSTRACT

In this experiment we monitored well supplied with honey in the fall honeybee families' response to supplementary feeding. In February we fed them with pollen and honey based protein feed, honey based energetic feed, in parallel with a control lot that we did not feed supplementarily. We then monitored the response to supplementary feeding with milk protein syrup little before the appearance of natural food in March. We monitored: the evolution of the number of larvae, the number of adult bees by acacia blooming, the amount of honey made during spring and from acacia flowers, the

evolution of the honey supply amounts in the hives, the honeybee quality before and after feeding them in February by weighing their weight, dry substance, and somatic protein amount.

Oils and their importance in farm animal nutrition

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ABSTRACT

Being present in many feedstuffs, fats are important components of diets. Fat supplements play an important role in improving the absorption of fat soluble vitamins and help to reduce the dustiness of feed. Fatty acids are usually classified as saturated (SFA), unsaturated (USFA), monounsaturated (MUFA) and polyunsaturated (PUFA) fatty acids. Among the polyunsaturated fatty acids group, linoleic (LA) and linolenic (LNA) fatty acids are the essential ones.

The fatty acid profile of feed affects the fatty acid profile of the tissues. Fatty acids in poultry diets affect the fatty acid composition in egg and tissues. They are also effective on the embryo development. The fatty acids in herbivores and carnivores have significant effects on tissues, milk fat and foetal development.

Fat supplements can enhance productive performance in cattle, pigs and poultry, and there is currently much interest in optimizing the amount and type of fat in diets of farm animals. Parallel to an increase in fat content of diet, an obvious increase can be seen in performance and quality as well as nutrient density of diets. This resulted in increased food conversion efficiency and faster growth in cattle, pigs and poultry. Extra caloric effect of fats is another important issue to be considered.

Key Words: Fat usage, animal nutrition, farm animals, fatty acid

Histological modification at the caecum level generated by introducing medicinal plants and essential oils in broilers feed

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ABSTRACT

Medicinal plants and extracts including in monogastric animals feeding represents a current practice because phyto-additives can represent an alternative to antibiotics using. In this way was been performed an experiment on 6 weeks, respectively from hatching to 42 days of age, on 120 broiler chickens, divided on four experimental variants (LEU, LEP, LEUP and LM) with 30 individuals each of them. The used hybrid was Ross 308. In LEU group were incorporated essential oils of *Coriandri fructus*, *Satureja hortensis*, *Hipophae rhamnoides*, 250 mg at 1 kg combined fodder. In LEP group were included in combined fodder structure a plants premix (*Mentha piperita*, *Salvia officinalis*, *Melissa officinalis*) in 2% proportion and in LEUP was included a mixture by plants premix and essential oils. The medicinal plants utilization and of essential oils in broiler chicken nourishment stimulates the caecal mucouse, generating an hypertrophic process manifested by glandular apparatus development, through capillary net hypertrophy and through leucocytic infiltrate stimulation, with role in local defending.

Keywords: medicinal plants and extracts, caececum, broilers

State of animal husbandry in Republic of Moldova – achievements and perspectives

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ABSTRACT

Animal husbandry in the Republic Moldova was one of the main branches of the agro-industrial complex, and it produced over half of the agricultural production. The agricultural sector was and will continue to be the main source of raw materials for the food and light industries and a source of organic fertilizers.

Keywords: animal husbandry, agro-industrial complex, raw materials, food, organic fertilizers

Opportunity of using graphite furnace atomic absorption spectrometry to determine the lead (Pb) from the zinc oxide used in animal diets

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ABSTRACT

A comparative test was conducted between two laboratories (IBNA Balotesti and IBA Bucharest) to determine the Pb from the zinc oxide, in order to determine the performance of graphite furnace atomic absorption spectrometry (GFAAS) in comparison to the flame atomic absorption spectrometry (FAAS). Both the Romanian and the EU legislation have very strict regulations on the level of Pb admitted in the forages. Zinc oxide is one of the Zn sources for the mineral premixes, but due to the production conditions, it is susceptible to be intoxicated by Pb, which has to be assayed by a very precise technology. The methods used most often are those of atomic absorption with FAAS and GFAAS variants. Two series of 10 determinations from the same sample of commercial zinc oxide were used. The Q test was applied on the data strings to discard the inconclusive values. The conclusion was that the data string produced by FAAS is more homogenous: the standard deviation 20.89 vs 31.2 (GFAAS), dispersion 436.57 vs 973.29, RSD 0.87 vs 1.19, confidence interval 2412 ± 17.51 vs 2629.2 ± 22.30 . The uncertainty value was 5.35 for FAAS and 9.87 for GFAAS. The data support the use of FAAS to determine the Pb in the raw ingredients, as long as it is present in ppm amounts.

Keywords: feeds, lead, atomic absorption, flame, graphite furnace

Obtaining pro-biotic biomass from yeasts used for fodder farm animals

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ABSTRACT

The researches effectuated in this paper have as purpose obtaining pro-biotic yeasts biomass, through cultivation at laboratory level and bio-reactor. For realizing the studies 6 strains of yeasts of the types *Trichosporon*, *Kluyveromyces*, *Issatchenkia*, *Saccharomyces* were used. At bio-reactor level, a culture environment based on molasses and corn extract was used. For all the used strains, kinetic parameters were calculated, for identifying the strain with maximum productivity. From the effectuated tests it results, that using the strains *Trichosporon beigeli* R-LF and *Issatchenkia orientalis* R-BC the results obtained are weak. Results comparable with those in the technical literature are obtained using strains *Saccharomyces cerevisiae* 2-15, *Saccharomyces cerevisiae* 1-29, resulting a productivity of $1.08 \text{ h}^{-1} \times \text{g} \times \text{l}^{-1}$, and $1.6 \text{ h}^{-1} \times \text{g} \times \text{l}^{-1}$ respectively.

Analysis of beta-lactoglobulin and kappa-casein genotypes in cattle

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ABSTRACT

Beta-lactoglobulin (b-Lg) and kappa-casein (k-Cn) are two of the most important proteins in the mammals' milk synthesized by the epithelial cells of the mammary glands. They play a crucial role in the milk quality and coagulation process (cheese and butter production). The PCR-RFLP test was performed to distinguish the different alleles in a population of Romanian Grey Steppe cattle. Genetic polymorphism was detected by digestion with the endonucleases Hae III (b-Lg) and Hinf I (k-Cn), followed by electrophoresis in agarose high resolution gel stained with ethidium bromide. Sixty DNA samples from the Romanian Grey Steppe breed were analyzed for A and B variants. This simple PCR-RFLP test makes the inclusion of b-Lg and k-Cn genotypes in breeding plans and cattle selection.

Keywords: kappa-casein, beta-lactoglobulin, polymorphism, PCR-RFLP.

Effect of using oleaginous diets (full fat soy, rapeseeds) on steer meat production and quality

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ABSTRACT

A trial using 30 fattening Brown steers during the finishing phase was set up to investigate the effect of two different fatty acids sources. The steers were assigned uniformly to 3 groups: control (C) no high fatty acids diet, E1 (24% full fat soy) and E2 (32% rapeseeds) in the compound feed. The use of high fatty acids feeds did not influence the intake of the full diet (concentrates + Sudangrass). Weight gain increased in the experimental groups (1393g in E1 and 1113g/steer/day in E2) compared to C (1053g/steer/day), but significant differences were identified only between C and E1 ($P \leq 0.05$). The crude fat linoleic fatty acid (C18:2) increased from 8.33% in C to 9.46% in E1, which is beneficial to human health.

Keywords: diets, oleaginous, fatty acids, steers, intake, live weight, meat quality

Research into the efficiency of dietary protein utilization by lactating Carpathian goats

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ABSTRACT

A group of 10 lactating goats was used to reveal the physiological processes showing dietary nitrogen utilization in lactation and the requirement for optimal dietary nitrogen levels. The goats were surveyed from lambing until month 5 of lactation by regular recordings of the feed intake and milk yield. Nitrogen balance was determined by nitrogen digestibility and retention in the urine and milk. The average feed intake ranged from 1595 to 1780 g DM, while the milk yield along the 5 months of lactation displayed a decreasing trend, from 2820 to 1800 g/day. Nitrogen balance during this period displayed negative values until the mid 4th month, turning positive afterwards.

Keywords: goats, protein, balance, milk

Researches concerning the influence of passive immunization by antifat serum to obtain lean carcasses in small ruminants

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ABSTRACT

Animal fats have a major contribution on the increase of cholesterol and obesity, a fact for which scientific research is seeking various means to reduce the quantities of fat with animals raised for meat. The present article shows the partial results of an immunization protocol meant to reduce fat in the fattened kid carcasses. The antigen (a suspension of fat cell membranes) obtained through Nassau & Hu method (1992) has been given a subcutaneous injection to bucks. The Freund antigen – complete/incomplete adjuvant has been inoculated with the aim of their active immunization. Titre of antibodies in the antifat antiserum has been determined by making use of the enzyme-immune-assay (Flint, 1984). The immune serum collected in days 7 and 21 from the first active immunization of bucks has been inoculated for 3 consecutive days with a 1.5 ml dose of immunoserum/kg of live weight in Saanen X Carpatina cross kids. The antifat polyclonal serum was tested "in vivo" on 4 experimental groups: a trial group of 8 male kids and 8 lambs aged 120 days, a trial group of 10 male kids and 10 lambs aged 33 days. The control groups was 4, in which male kids and lambs were the same age and weight. At the end of the experiment all kids and lambs have been experimentally slaughtered, carcasses and their components being electronically weighed. The quantity of fat tissue in the kidney, abomassal, breast zones as well as in other organs was collected and registered. Following the immunization with antifat serum, kids in trial group 1, aged 120 days, achieved a daily average gain of 114 grams, twice as much as that achieved with the control group (55 grams) whose kids were the same age, breed and live weight. In lambs the experimental group aged 120 days, achieved a daily average gain of 210 grams and the control group was 183 grams. Both the weight of gastro-intestinal mass (without intestinal content) and the weight of the inner organs were bigger than those in the trial groups. The quantity of muscle tissue and inner organs in the cold carcass is larger in trial group 1 as compared with the control group. Immunization performed on kids and lambs aged 33 days did not alter the muscle tissue/bone tissue ratio. The fat tissue (in the breastbone, abomassal and kidney zones) has been directly affected by the inoculation of antifat antiserum with both trial groups. Passive immunization has not affected the morpho-structural integrity of cell membranes in vital organs and muscle cells as well. Under kid slaughtering over a longer period of time from the antifat immunization, 6.4% extra muscle tissue has been obtained with a fat percentage reduced by 1.87%. In lambs after slaughtering over a longer period of time from the antifat immunization, 6.7% extra muscle tissue has been obtained with a fat percentage reduced by 2.21%.

Keywords: fat, antiserum, passive immunization, kids, carcass

Morphostructural and physiological changes in rats and kids after acute intoxication with fusaric acid

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ABSTRACT

Mycotoxins are secondary metabolites secreted by fungi in various foods and are estimated to affect as much as 25% of the world's crop each year. Most of these mycotoxins belong to three genera of fungi: *Aspergillus*, *Penicillium* and *Fusarium*. They are produced in cereal grains as well as forages before. The presence of mycotoxins (aflatoxin, ochratoxin, zearalenone, fumonisin and T-2 toxin) in feed may affect animal health, beginning with the decreased feed intake and feed bioconversion with serious problems and even death. The possible presence of toxic residues in edible animal products such as milk, meat and eggs may have some detrimental effects on human health. Due to the diversity of their toxic effects and their synergetic properties, mycotoxins are considered risky to the consumers of contaminated foods. The aim of this study was to establish the toxicity of lucerne hay infested with fusaric acid, in Wistar rats and in kids 3-month-old. The rats and kids were distributed in three experimental groups and one control group. In rats, the following doses were administered by gavages: 1 ml normal water with 0,120 (group1), 0,227 (group 2) and 0,370 (group 3) fusaric acid doses ($\mu\text{g}/\text{kg}$ of body weight). The same experimental schedule was applied to kids, with 3 animals in each group, receiving the same amounts of mycotoxins mixed in dry lucerne and grounded grains. The control group received non-contaminated diet. The body weight evolution in both rats and kids decreased by 30-35% after 4 days (group 3), 7 days (group 2) and 12 days (group1), respectively. It became visible behavior disorders expressed by reduced appetite, apathy and after 12 days treatment with mycotoxins, the animals showed aggressiveness and anorexia. Behavior studies and weighing were performed every 4 days during the experiment. The experimental sacrifices were made after 16 days in rats and 21 days in kids. After the sacrifice done, a complex morphopathological examination was performed and were made biochemical and hematological analyses, as well as morphostructural studies by optic and electronic microscopy techniques. The microscopy pointed out in all rats purulent enteritis, hepatic, renal and cerebral congestions. The partial results of tissues examinations evidenced vacuolar degeneration in cells, hypertrophy of smooth endoplasmic reticulum, hypotrophy and degeneration process in mitochondria and rough endoplasmic reticulum. As results of this study, it was established that the clinical and morphopatological disorders degree depend on contamination level with fusaric acid of lucerne and grains.

Key words: fusaric acid, kid, rat, experimental group, examination

Methods of “ex situ” genofond preservation on small ruminants in Romania

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ABSTRACT

Based on the progress in scientific knowledge of endocrinology, reproductive physiology and embryology during the last 15 years, the news biotechnologies methods have been introduced goat and sheep reproduction. Some of these biotechnologies are developed for genofond preservation and for intensive reproduction to accelerate the level of amelioration. Among them are: induced and synchronisation of oestrous, freezing of the semen for artificial insemination and multiple ovulation and embryo transfer (MOET). The aim of reproductive biotechnology is to spread the level of amelioration on farm animals by increasing yhe offspring of selected males and females by reducing the interval between generations to preserve ovine and caprine genofond. Freezing semen and artificial insemination (IA). The first generation of biotechnology was IA with various form of conserved semen (fresh, refrigerated, freezing). The Romanian Carpathian breed has a very good suitability of semen ($P\% > 90$) an survival spermatozoa ($SS\% > 55$) and an excellent motility after thawing ($M\% 40-60$). Fecundity is variable according many factors: method of insemination (intracervical or intrauterine), time of insemination, form of buck sperm cryopreservation. Frozen goat semen fecundity ranged 45-55% after intracervical insemination and 60-75% after intrauterine insemination by laparoscopy. Frozen buck semen fecundity was higher (63.2%-76%) after intracervical insemination in Biladyl and Triladyl extender without seminal plasma. Ram semen freezing is done using the technologies elaborated in ICDOC Palas Reproduction Laboratory. The ram semen collected of Palas Merino, Karakul and Tzigae breeds are a very suitable for freezing in liquid nitrogen. The motility after thawing semen in saline extenders, present a very good ($> 40\%$ motility) but the pregnancy rate are variable to 20% – 45 % depending of many factors.

Multiple ovulation and embryo transfer (MOET). In sheep and goat the ET is realised by surgical method, with 3 or 4 chronically collection of embryos in some animals. For this reason ET has limited application in farms. In spite of these disadvantages embryos freezing in this species is very much utilised in many countries for genotype exchanges or for genofond preservation. In the both species the superovulation rates are very good after treatment with FSH-p or FSH-o in association with an fluorogeston acetate (FGA) pre-treatment. Ovulation rates ranged between 5-13 and the utilisable embryos are 3.5-7. Embryo survival (ES%) after fresh embryos transfer in goats receptors are 65-70% and the embryo survival are 35-52% . Generally the MOET indexes are variable in relation with season, ages, breed, treatment of superovulation and tip of insemination of donors. After our experience, the results of the conception rate in sheep ET are lower with 5-10% as goat ET.

Key words: freezing semen, embryo transfer, sheep, goat