

ABSTRACT
Vol. 44 (2) - 2011

Alexandru T. Bogdan, Nicolae Pacala, Eliza Simiz

The Sustainable Development of Zootechnical Sciences in the Context of Life Sciences and the Perspectives of Zootechnical Engineers in the Innovative Concept of Eco-Bio-Economic Engineering

i

Abstract

Zootechnical sciences represent a well defined concept since the notion of "Zootechnics" has been in use (in the second part of the 19th c.) and they continued to develop throughout the 20th century and they have acquired new insights in the early 21st c. knowledge society. The three authors bring forth numerous and various professional documents from national and international literature, some of which are novel and demonstrate that the concept of Zootechnical sciences represents an objective reality.

From a present and future perspective, several scientific fields are grouped in two expressions highly employed in the international specialty literature which have begun to be utilized in our country as well. In this respect, the expressions "biosciences" and especially "life sciences" are explained by the team of authors with concrete examples and relevant evidence, including discussions with undeniable arguments concerning the place and role of zootechnical sciences within the scope of biosciences and life sciences.

As part of *the Postdoctoral School for Zootechnical Biodiversity and Food Biotechnology, based on the Eco-economy and the Bio-economy required by Ecosanogenesis* (contract POSDRU/89/1.5/S/63258), funded by the European Social Fund through the Operational Programme Human Resources Development, the scientific basis of a new paradigm of integrated eco-bio-economy have been presented and developed at national and international symposia with acknowledged academic character; the authors further develop the perspectives of zootechnical engineers regarding the innovative concept of integrated eco-bio-economic engineering with a socio-economic impact upon increasing bio-food resources for humans and farm animals in the context of preventing and combating a new global food crisis, in a changing multipolar world.

Keywords: biosciences, life sciences, eco-bio-economic engineering

AQUACULTURE

Flavius Blidariu, Adrian Grozea

Increasing the Economical Efficiency and Sustainability of Indoor Fish Farming by Means of Aquaponics

1

Abstract

This review focuses on increasing economical efficiency and sustainability of indoor fish farming. Aspects like sustainability and economical efficiency were reviewed. In order to improve man's health we must reconsider the agricultural sciences, by this we understand that we must develop technologies friendly for the environment. Sustainable indoor fish farming is the farming of the new millennium. Combining aquaculture with hydroponics we obtain a new innovation named aquaponics which respects principles of sustainable agriculture (wastewater biofiltration by plants) and gives us the possibility to increase economical efficiency with an additional production (organic vegetables).

Keywords: aquaculture, aquaponics, hydroponics, organic products, recirculating aquaculture systems (RAS).

Marian Bura, Radu Muscalu-Nagy, Camelia Hevesi, Ioan Banatean-Dunea

Morphometric Studies on Anodonta Anatine Bivalve Population from the Dognecea Lake

9

Abstract

In the Dognecea Lake, near town Bocsa in Caras-Severin county a strong bivalve population has been discovered from the duck mussel specie (*Anodonta anatina*). Harvested individuals were transported to the Aquaculture laboratory where measurements and correct identification was made. This specie is considered endangered but in Banat area, especially in the Dognecea Lake it is well represented, having an ecological importance, but the bivalve can have an economical importance too, due to the high percentage of edible part of 56.5%.

Keywords: *Anodonta anatina*, Dognecea Lake, biometry

Erol-Florian Gabor, Aurel Şara, Florin Molnar, Mihai Benţea

The Influence of Some Phytoadditives on Growth Performances and Meat Quality in Rainbow Trout (*Oncorhynchus Mykiss*)

13

Abstract

The experiment aimed to determine the bioproductive effects of the administration of phytoadditives in rainbow trout feeds. The additives were represented by garlic, ginger, oregano and Echinacea that were added into rainbow trout feed in proportions of 2% garlic (L1E), 1% ginger (L2E), 1% oregano (L3E) and 0.5% Echinacea (L4E). The experimental period was 116 days. The greatest weight gain was recorded in the L3E group and the lowest in the L4E group. The highest specific growth rate was recorded in the L4E group. The lowest feed conversion ratio was recorded in the L3E group and the highest in the control group. Analyzing the meat chemical composition, the highest increase in dry matter was recorded in L1E group compared with the control group; the biggest increase in the Gross Protein value was recorded in L4E group, the L3E group showing a decrease compared with the control group. Regarding the Gross Fat content, the highest value was recorded in the L1E compared to the control group while the L3E group showed a decrease of GF content, compared with the control group. The results obtained confirm the beneficial effects of these phytoadditives on the growth and consumption indices in rainbow trout.

Keywords: phytoadditives; growth indices; garlic; ginger; oregano; Echinacea; rainbow trout

Sandita (Placinta) Ion, Victor Cristea, Iulia Grecu, Elena Bocioc, Adina Popescu, Marian Tiberiu Coadă

Influence of Environmental Conditions in Ichthyophthiriasis Trigger to the Europeans Catfish Juveniles (*Silurus Glanis*) Stocked into a Production System with Partially Reused Water

19

Abstract

Currently, in Romanian aquaculture, the rearing of the European catfish into intensive production systems raises a growing interest determined by its higher technological performances. In comparison with pond traditional aquaculture, the new farming systems are characterized by modified environmental conditions that may lead, in case of exceeding thresholds of tolerability, to occurrence of stress factors, thus setting the disease conditions. From this perspective, the purpose of this paper is to present the association circumstances of the predisposed environmental conditions that have weakened the fish body resistance promoting the pathological action of *Ichthyophthirius multifiliis* after the transfer of European catfish juveniles ($G=33.6\pm 1.7$ g, $L=17.5\pm 2.9$ cm) from a pond system into a tank culture system with partially reused water. During a 21-day period, some restrictive parameters of water quality have registered values far beyond the optimum interval for wells juveniles growth ($t\leq 16^{\circ}\text{C}$, $C_{\max}\text{N-NH}_4^+=3.62\text{mg/l}$, $C_{\max}\text{NO}_2^-=9.18\text{mg/l}$, $C_{\max}\text{Cl}_2=0.1\text{mg/l}$) which caused the appearance of some characteristic symptoms, such as the gills brown coloration, masking the first symptoms of ichthyophthiriasis and contributing to the subclinical evolution of the disease. The concentrations of water chemical parameters were determined by spectrophotometer methods using Merck kits, analogous to standard methods. Subsequently, the "ich" diagnosis was confirmed by microscopic examination of the gills and skin scrapings highlighting the presence of parasites. In order to alleviate methaemoglobinaemia and parasite treatment, sodium chloride was gradually added in water till 1 ppt concentration. Maintaining the salinity of the system led to a reduction of gills parasitic intensity, while mature trophonts encapsulated in the skin were protected by mucus hypersecretion. Finally, the destruction of gill epithelium seriously affected the osmoregulation, resulting in fish death by asphyxia which led to a loss of 90% of the population.

Keywords: *Ichthyophthirius multifiliis*, nitrite ions, *Silurus glanis*, water quality

Florin Molnar, Aurel Șara, Erol-Florian Gabor, Mihai Bențea The Influence of Some Additives to Growing Indices and Meat Quality for one Summer Common Carp (<i>Cyprinus Carpio</i> L.)	24
---	----

Abstract

The aim of this research was to evaluate the use of additives in fodders for common carp (*Cyprinus carpio* L.). The experiment was carried out for a period of 257 at the fish farm from Mărtinești in the county Cluj. The fish were divided in 6 groups, LM-control group and 5 experimental groups; the fodder for the experimental groups was supplemented with Allzyme SSF (L1E), Bio-Mos (L2E), Allzyme SSF and Bio-Mos (L3E), Allzyme SSF and Sel-Plex (L4E) and Allzyme SSF, Bio-Mos and Sel-Plex (L5E). Each batch contained 100 fish divided as it follows: 50 common carp from Lausitz var. and 50 common carp from Galitian var. The average weight for both varieties of common carp was 1.5 g/ specimen. The groups were distributed in 6 cages with 150 mp. The best results regarding growing indices for Galitian var. were obtained by L4E group with medium weight (MW) of 791.73±35.05g and the survival rate (SR) of 94%, compared with LM group (MW=743.37±39.20g and SR= 88%). In the case of Lausitz var. the best MW was obtained by L1E with 908.36±34.33g compared with LM (MW= 794.66±26.61g) and the best survival rate was obtained by L4E and L5E with SR=94% compared with LM (SR= 76%). The results reveal that the supplementation of fodder for both varieties of common carp (Lausitz and Galitian var.) carp with used additives determined a better growing rate and a better survival rate.

Keywords: Allzyme SSF, Bio-Mos, common carp, fodder additives, SelPlex, survival rate.

Cristina Muscalu-Nagy, Samuel Appelbaum, Danijel Gospič A New Method for Out-of-Season Propagation for Northern Pike (<i>Esox Lucius</i> , L.)	31
---	----

Abstract

Being a valuable fish specie for aquaculture, the pike is getting more attention from the scientists and the farmers. Normally, intensive pike farming involves the feeding of pikes with pellets up to the size of 250-300 grams, followed by culture in traditional policulture in earth ponds. In intensive pike farming, having the fingerlings sooner means that the pike will have a bigger size at the end of the growing season. Therefore out-of-season propagation for this specie is important if we need large size pike at the age of one summer. In current practice, out-of-season propagation for pike involves quick wintering followed by thermal shocks. We propose a simple method which consists in lack of wintering and allows the farmer to artificially reproduce the pike almost in any period of winter or spring

Keywords: Northern pike, out-of-season, propagation.

Octavian Negrea, Vioara Mireșan, Camelia Răducu, Liviu Oană, Flore Chirilă, Zamfir Marchis, Daniel Cocan Incidence of Larval Anisakiosis in Ocean Fish Sold Through Network of Supermarket Stores	35
---	----

Abstract

Investigations conducted on a sample of 33 ocean fish of consumption, mackerel and herring unviscerated and frozen, packed in plastic bags, different weights and purchased from supermarket chain stores, concerning the incidence and intensity of parasitism by larvae of Anisakis sp. to gut and visceral level, lesion picture caused and also some morphological measurements, reveals an incidence of anisakiasis of 60.0% to 72.2% in mackerel and respectively in herring. Regarding the infestation intensity of Anisakis larvae sp., infestations dominate weakly the mackerel (44.4%), followed by medium (33.3%) and massive (22.0%). In contrast to the herring are dominant the medium infestations (46.1%), followed by massive (30.7%) and low infestations (23.1%). Table of lesion caused by larval stages in gut and visceral level is characterized by intestinal congestion, hemorrhagic enteritis and hemoragico – necrotic and the presence of larval cystic foci on serous of gut, kidneys, liver and gonads. Morphological investigations carried out on a sample of 20 larvae, collected from herring and mackerel, regarding biometric aspects, cuticular and of color, body size variables highlights from 13.0 mm / 0.6 mm minimum to 27.0 / 0.6 mm maximum, with an average of 20.0 mm / 0.5 mm, comparable to those presented in the speciality literature.

Keywords: cyst, larva, lesions zoonosis.

Marioara Nicula, Iosif Gergen, Monica Harmanescu, Ionut Banatean-Dunea, Adela Marcu, Eliza Simiz, Tiberiu Polen, Mihai Lunca Assessing the Impact of EDTA Chelating Effect on some Macro- and Microminerals in Prussian carp (<i>Carassius gibelio</i>) Tissues	40
---	----

Abstract

Chelators are used in [chemical analysis](#), in medical applications, as [water softeners](#), as decontamination agents on radioactive surfaces and they are ingredients in many commercial products such as [shampoos](#) and food [preservatives](#). Such a synthetic chelator is [EDTA](#) (ethylenediaminetetraacetic acid). It is considered one of the tools that promises to control the heavy metal pollution in aquaculture. EDTA attaches itself to heavy metals and carries the metals from the fish body. EDTA can also slow free-radical activity produced by heavy metals in the body. Because its ability to sequester metal ions, we tried to estimate the potential risks of a chronic exposure to EDTA on tissue mobilization of some metals which have an essential role in realization of different cell functions in Prussian carp specimens. Ca, Mg, Fe, Zn, Mn and Cu, were the mineral elements we have targeted in this study. It was found that these minerals have a trend of their tissues distribution and concentration in the body of the control specimens (higher or lower related to other similar works) and EDTA presence in water led to a significant decreasing of their level in all tissues analyzed in a dose-dependent manner.

Keywords: EDTA, fish, macroelements, microelements.

Adina Popescu, Maria Fetecău, Catalina (Ciortan) Mirea, Victor Cristea, Marian Tiberiu Coadă Researches on Evaluating the Efficiency of Hormonal Stimulation with Silver Carp Pituitary Extract in Order to Optimize Controlled Reproductive Technology at Asian Cyprinids	45
--	----

Abstract

Large requirements of fish larvae, led the specialists at the Carja 1 farm to experience injection with pituitary extract from other species of cyprinids, silver carp pituitary. The experiment took place in the period from 2-25 June 2008. To verify the effectiveness of injections of silver carp pituitary suspension were used two experimental groups of 30 exemplars (1:1), the first group of females received a total dose of 2.9 mg/kg, and the second batch a dose of 4.5 mg/kg. The total dose used for breeding male is 2 mg/kg pituitary. During the Asian cyprinid reproductive guided aimed to determine: the proportion of breeding maturation, fertilization rates and survival during embryonic development index and the index of survival to hatch from eggs to larvae of 3-5 days (most representative for the whole process of reproduction). Determining the number of larvae from each batch of fertilized eggs, the ultimate goal of action is guided by reproductive hormonal stimulation with silver carp pituitary. The number of larvae obtained from experimental plots 3-5 days silver carp injected with silver carp pituitary extract (63,96 and 64,67 thousand) comparable with those obtained in experimental groups grass carp (36,21 and 31,14 thousand) and bighead carp (39,36 and 41, 34 thousand) was approximately 58% higher.

Keywords: Asian cyprinid, dose, larvae of 3-5 days, pituitary.

Adina Popescu, Maria Fetecău, Desimira Dicu, Săndița Ion (Placintă), Victor Cristea Research about the Influence of Environmental Factors on Breeders Quality	50
---	----

Abstract

Along the growth period of the breeders, the monitoring of environmental parameters is a fundamental condition to ensure the quality of the breeders used for reproduction. The results from the research presented in this paper were obtained following experimental type investigations developed in vegetation and cold season within Carja 1-Vaslui fish farm, on chemical and biological samples which were analyzed within the research laboratory of the Department of Aquaculture, Environmental Science and Cadastre. Were analyzed parameters which influence bio-productivity: temperature, oxygen, pH, the concentration of nitrites, nitrates, phosphates, the density and abundance of phytoplankton and zooplankton, the individual weight and health condition of breeders. Analyzed parameters included mean values recorded in the optimal range for fish waters, as reflected in the numerical density and abundance of plankton and the average weight of Asian cyprinids breeders with a plankton nutritional spectrum.

Keywords: breeders, health, phytoplankton, quality, zooplankton.

Aurel Șara, Alina Rodica Ani (Toma), Florin Molnar and Erol Gabor

Histological Investigations on an Intestinal Level in Common Carp, one Summer Old, Fed with Organic Selenium (Selplex) Supplemented Fodder

56

The trial had been carried out during 5 May–30 September 2009, (23 weeks) at the trout farm ICAS Gilau, Cluj County. Two groups were implied: a Control group and one experimental group (Bio-Mos0.2%+SelPlex0.03%+NuPro2%) each consisting of 250 rainbow trout juveniles. The experimental group received 0.2 % Bio-Mos+0.03% SelPlex+2%NuPro. At the end fish reached an average weight of 253.20 g/specimen for experimental group and 241.10 g/specimen for the Control group. The growth rate increased by 5.23 % at the experimental group comparative with the Control group. The highest value of specific growth rate was recorded at group E, 1.51 g/day, with 5.59 % higher than the specific growth rate of the Controls. The addition of combined fodder additives in group E feed led to an abatement of the feed conversion rate (1.39:1) by 2.12 % smaller comparative with the Control group (1.42:1). The analysis of indices regarding the fish health and survival rate, showed the positive effects of the combined additives. At intestinal level it was noticed an increasement of villi length at group E with 10.72 % higher comparative with the Control group. A significant improvement of selenium content of rainbow trout meat was also noticed.

Keywords: combined fodder additives, meat quality, productive performances, rainbow trout.

Aurel Sara, Aurelian Barbu, Erol Gabor, Mihai Bentea

Researches Regarding the Combined Fodder Additives (Bio-Mos+Nupro+Selplex) Effects on the Productive Performances and Health of Rainbow Trout (*Oncorhynchus Mykiss W.*)

61

Abstract

The goal of this research was to analyze the effect of organic Selenium (SelPlex) on the intestinal mucosa and the impact on the growth and consumption performances in one summer old common carp (*Cyprinus carpio*), Lausitz and Galitian varieties. The research were conducted on a number of 392 fish, Lausitz variety divided in 2 groups and on 192 fish, Galitian variety, divided into 2 groups. The fish were raised in 2 ponds (one pond for the control group and one pond for the experimental group), in a semi-intensive polyculture system. The rearing conditions were identical for the 2 groups. The fodder for the experimental group was supplemented with Selenium (0.03mg/kg fodder). At the end of the experiment, the Selenium supplementation had a positive influence on the height of the intestinal villi. The experimental group (both varieties) showed significant differences compared with the control group. The mean height of the intestinal microvilli from the experimental group, Lausitz variety, was 2.328μm, 0.95% bigger compared to the same variety of the control group. The Galitian variety showed a mean height of the microvilli of 2.227μm, 0.72% bigger than the same variety of the control group. This development of the villi structures in the experimental groups led to an increase in the absorption surface of the intestine which explains the accelerated growth and the improvement of the feed conversion ratio.

Keywords: carp, consumption, growth, microvilli, organic selenium, villi.

FUNDAMENTAL SCIENCES IN ANIMAL HUSBANDRY

BIOCHEMISTRY, BIOPHYSICS, MATHEMATICS, INFORMATICS

Lavinia Ioana Bărnăuțiu, Liviu Al. Mărghițaș, Daniel S. Dezmirean, Cristina Manuela Mihai, Otilia Bobiș

Chemical Composition and Antimicrobial Activity of Royal Jelly

67

Abstract

The present paper presents the literature data regarding the chemical composition and antimicrobial activity of Royal Jelly. Royal Jelly is a secretion from the hypofaringeal glands of worker bees which serves as a food for queen bee and to the growing up larvae. Having biological properties already proven, Royal Jelly has considerable commercial appeal and is today used in many sectors (pharmaceutical, food industries and cosmetic products). The physicochemical composition of pure royal jelly are analyzed by determining moisture, ash, lipids, proteins, vitamins, aminoacids, carbohydrates, 10-HDA; RJ is the key substance in the antimicrobial function of the system Apis

mellifera. The intact Royal Jelly exhibited the highest antibacterial activity.

Keywords: antimicrobial activity, chemical composition, royal jelly.

Rodica Căpriță, Adrian Căpriță

Chemical Methods for the Determination of Soluble and Insoluble Non-Starch Polysaccharides

73

Abstract

Polysaccharides are macromolecules of monosaccharides linked by glycosidic bonds. Non-starch polysaccharides (NSP) are principally non- α -glucan polysaccharides of the plant cell wall. They are a heterogeneous group of polysaccharides with varying degrees of water solubility, size, and structure. The water insoluble fiber fraction include cellulose, galactomannans, xylans, xyloglucans, and lignin, while the water-soluble fibers are the pectins, arabinogalactans, arabinoxylans, and β -(1,3)(1,4)-D-glucans (β -glucans). Both the enzymatic-gravimetric and enzymatic-chemical methods used for the determination of soluble and insoluble non-starch polysaccharides have undergone a number of modifications and improvements, most occurring over the last 20 years.

Keywords: enzymatic chemical methods, enzymatic gravimetric methods, non-starch polysaccharides.

Rodica Căpriță, Adrian Căpriță, Iuliana Crețescu, Călin Julean

Influence of Temperature on the Extractibility of Polysaccharides in Barley

81

Abstract

Barley contains substantial amounts of both soluble and insoluble non-starch polysaccharides (NSP). The main water soluble NSP in barley are highly viscous β -glucans. Monogastric animals, including humans and birds, cannot synthesize β -glucanase, and the amount of β -glucanase derived from barley grain and bacteria in the gastrointestinal tract is insufficient to completely hydrolyze β -glucans. In the present investigation, we have studied the influence of temperature and heating time on the extractibility of soluble polysaccharides in barley. Heating the barley samples at 60°C and 80°C before extraction has the effect of lowering the soluble fraction of the polysaccharides. The dynamic viscosity values of water extracts from barley decreased up to 21.68% when heating at 60°C for 15 minutes, and up to 25.30% when heating at 80°C for 15 minutes, when the determinations were made immediately after extract separation. Heating the barley samples for 15 minutes at 80°C deactivates the endogenous hydrolytic enzymes.

Keywords: barley, dynamic viscosity, non-starch polysaccharides.

Ciceronis Cumpanasoiu, Cristian Emil Cumpanasoiu, Emil Tirziu, Radu Valentin Gros,

Bianca Cumpanasoiu, Adia Carmen Tirziu

Study of the Behavior of Some *Yersinia enterocolitica* Strains Susceptible to Disinfectants and Antibiotics Isolated From Swine

85

Abstract

The species from *Yersinia* genus are widespread in nature, they could be isolated from warm-blooded and cold-blooded animals, from foods, water and soil. Among genus species, *Yersinia enterocolitica* is most frequently isolated from human and animals. The resistance of *Yersinia enterocolitica* is similar to *Yersinia pseudotuberculosis*. Moreover, it resists to refrigeration temperature (+4°C). It is susceptible to streptomycin, chloramphenicol, tetracyclines, polymyxin B and colistin sulfate. Also, *Yersinia enterocolitica* is easily inactivated by sodium nitrite and sodium nitrate added in foodstuffs. It still shows some resistance to these salts, in solution, and could tolerate a 5% NaCl concentration in culture media. Toora shows that adding a 5% NaCl in food could lead to a growing rate reduction. In our research we study the behavior of *Yersinia enterocolitica* strains isolated from swine feces, on different isolation and identification media, chlorine tolerance, but also the behavior against eleven anti-infectious substances (nalidixic acid, furazolidone, erythromycin, tetracycline, gentamicin, streptomycin, ampicillin, kanamycin, cefalotin, trimethoprim and enrofloxacin).

Keywords: antibiotics, disinfectants, susceptible, swine, *Yersinia enterocolitica*.

Bogdan Georgescu, Carmen Georgescu, Stelian Dărăban, Anca Bouaru, Simona Pașcalău
Heavy Metals Acting as Endocrine Disrupters

89

Abstract

Last years researches focused on several natural and synthetic compounds that may interfere with the major functions of the endocrine system and were termed endocrine disrupters. Endocrine disrupters are defined as chemical substances with either agonist or antagonist endocrine effects in human and animals. These effects may be achieved by interferences with the biosynthesis or activity of several endogenous hormones. Recently, it was demonstrated that heavy metals such as cadmium (Cd), arsen (As), mercury (Hg), nickel (Ni), lead (Pb) and zinc (Zn) may exhibit endocrine-disrupting activity in animal experiments. Emerging evidence of the intimate mechanisms of action of these heavy metals is accumulating. It was revealed, for example, that the Zn atom from the Zn fingers of the estrogen receptor can be replaced by several heavy metal molecules such as copper, cobalt, Ni and Cd. By replacing the Zn atom with Ni or copper, binding of the estrogen receptor to the DNA hormone responsive elements in the cell nucleus is prevented. In both males and females, low-level exposure to Cd interferes with the biological effects of steroid hormones in reproductive organs. Arsen has the property to bind to the glucocorticoid receptor thus disturbing glucocorticoids biological effects. With regard to Hg, this may induce alterations in male and female fertility, may affect the function of the hypothalamo-pituitary-thyroid axis or the hypothalamo-pituitary-adrenal axis, and disrupt biosynthesis of steroid hormones.

Keywords: arsen, cadmium, endocrine disrupter, heavy metal, mercury, nickel.

Liviu Mărghitaș, Daniel Dezmirean, Flore Chirilă, Nicodim Fiț, Otilia Bobiș
Antibacterial Activity of Different Plant Extracts and Phenolic Phytochemicals Tested on *Paenibacillus Larvae* Bacteria

94

Abstract

Paenibacillus larvae, a Gram-positive and spore-forming bacterium is responsible for American foulbrood disease in bees. The antimicrobial activity of different plant extracts and phenolic phytochemical was evaluated on *Paenibacillus larvae* bacteria. In addition possible correlation with antioxidant activity of the same plant extracts was studied. Extracts of the following plants were utilized: *Achillea millefolium* (yarrow), *Ocimum basilicum* (basil), *Thymus vulgaris* (thyme) and *Urtica dioica* (nettle). The extracts that showed antimicrobial activity were later tested to determine the Minimal Inhibitory Concentration (MIC). Although nettle present the lowest polyphenolic content compared with the other plant extracts, exhibit the highest antimicrobial activity, measured as the inhibition zone using Mueller-Hinton agar plates. Basil presented both polyphenolic content and antimicrobial activity at higher levels, while thyme had the lowest antimicrobial activity, even it present high amount of polyphenols.

Keywords: bacterium, basil, *Paenibacillus larvae*, phenolic pytochemicals, nettle, thyme, yarrow.

Cristina M. Mihai, Liviu Al. Mărghitaș, Daniel S. Dezmirean, Lavinia Bărnuțiu
Correlation between Polyphenolic Profile and Antioxidant Activity of Propolis from Transylvania

100

Abstract

Propolis samples used for the present study were collected in Transylvania. Our study had the purpose to investigate the amount of total polyphenols and the correlation that it may exist between the mentioned class of compounds and antioxidant properties. Polyphenolic profile was determined using Folin-Ciocalteu colorimetric method, while antioxidant activity was investigated by means of free radical scavenging activity (DPPH assay) and ferric reducing antioxidant power (FRAP assay). The content in polyphenols for analyzed propolis samples ranged between 24.46 and 62.39 g standard mixture/ 100 g propolis. All propolis samples showed antioxidant activity. The correlation between polyphenolic profile of propolis and its antioxidant properties was found to be positive.

Keywords: DPPH assay, FRAP assay, polyphenols, propolis.

Octavian Negrea, Vioara Miresan, Camelia Raducu, Flore Chirilă, Liviu Oana, Zamfir Marchis

Parasitological Aspects of Pollution Levels in Some Equine Digestive Helminthosis

104

Abstract

Research conducted on the parasitological pollution in some digestive helminthosis in horses, (parascaridiosis, strongillidosis and oxyuriasis), made in January 2011 in the village of Crasna, Salaj county on a herd of 72 horses from households (40 adults and 32 young horses), using diagnostic methods ovohelminthoscopies with enrichment of faeces taken (method Willis) and the scaling technique of curettage in anal pit area, revealed a different incidence of the main digestive helminthosis studied in correlation with age category and area of origin of the samples. Thus, mean parascaridiosis values are of 12.5% in adults and of 34.0% in young horses and riding in strongillidosis to an average of 82.5% in adult horses and, respectively, to 34.5% in young horses. In exchange for pinworm infection extensivity of parasitism in adult horses is 18.0% and respectively, 15.0% in young horses. Linked to the intensity of parasitism in helminthosis taken in study, the data obtained reveals different levels of pollution coproparasitologic Eggtester, in correlation with the area of origin and age. Thus, adult and youth horse parascaridiosis, dominates the low and medium infestations (100%) and in adult horses strongillidosis dominate the medium infestations (84.0%) and low infestations (75%) in young horses.

Keywords: coproscopy, extent, incidence, helminthosis.

Crenguța I. Pavel, Liviu Al. Mărghitaș, Otilia Bobiș, Daniel S. Dezmirean, Agripina Șapcaliu, Ion Radoi, Mariana N. Mădaș

Biological Activities of Royal Jelly

108

Abstract

Royal jelly is a secretion product of the cephalic glands of nurse bees that has been used for centuries for its extraordinary properties and health effects. This bibliographic study aims to review many of the scientific findings and research that prove many of the remarkable various actions, effects and some uses of royal jelly. There are taken into consideration numerous biological properties and effects of royal jelly: antioxidant, neurotrophic, hipoglicemiant, hipocholesterolemiant and hepatoprotective, hypotensive and blood pressure regulatory, antitumor, antibiotic, anti-inflammatory, immunomodulatory and anti-allergic, general tonic and antiaging. Royal jelly is one of the most studied bee products, but there still remains much to reveal about its biochemistry and biological activity in future research for our health and life benefit.

Keywords: biological activity, royal jelly (RJ), scientific evidence.

Dana Popa, Victoria Niculescu, Cristiana Diaconescu, Livia Vidu, Răzvan Popa, Marius Maftai, Nicoleta Ișfan, Carmen Nicolae

Research on the Structure, Quality and Measures to Prevent and Combat Soil Erosion in the Village Stejaru from Teleorman County

119

Abstract

This study is part of a research project on the influence of agro-livestock activities on surface water quality in Teleorman County. The paper presents structure, quality and measures to prevent and combat soil erosion in relation to agro-livestock activities in this area. The paper presents structure, quality and measures to prevent and combat soil erosion in relation to agro-livestock activities in this area. The research has been done in the whole locality, and took soil samples to determine the type and soil texture and soil supply status with major nutrients (N, P, K). Based on these results and knowing the types of main crops and livestock structure, at Stejaru level, recommendations were made about avoiding the risks of pollution of surface water by nitrates from agricultural and livestock activities.

Keywords: erosion, nutrients, soil structure, soil and water pollution

Dana Popa, Victoria Niculescu, Cristiana Diaconescu, Livia Vidu, Răzvan Popa, Marius Maftai, Nicoleta Işfan, Carmen Nicolae

Research on the Influence of Soil Structure and Amendments on Surface Water Quality from Cervenia Village, Teleorman County

124

Abstract

This study is part of a research project on the influence of agro-livestock activities on surface water quality in Teleorman County. The paper presents structure, quality and measures to prevent and combat soil erosion in relation to agro-livestock activities in this area. The research has been done in the whole locality, and took soil samples to determine the type and soil texture and soil supply status with major nutrients (N, P, K). Based on these results and knowing the soil amendments at Cervenia village level, recommendations were made about avoiding the risks of pollution of surface water by nitrates from agricultural and livestock activities.

Keywords: amendments, soil structure, surface water.

Sorina Ropciuc, Radu Cenuşă, Rodica Căpriţă, Iuliana Creţescu

Study on the Ascorbic Acid Content of Rose Hip Fruit Depending on Stationary Conditions

129

Abstract

The dog rose area includes southern and central Europe, reaching southern Scandinavia; it is also found in Asia Minor, Central Asia and North Africa. In our country, *Rosa canina* is the most widespread of the many species of *Rosa*, common in all areas. The components of the station, known also as the „stationary factors” affect differently the plant life and their chemical composition. *Cynosbati fructus* is the false fruit of *Rosa canina* L. (*Rosaceae*), known in Romanian as rose hip. The rose hip contain as active ingredients 500-1000 % vitamin C, 600-10000 mg% carotenoids, pectin, dextrin, vitamins B2, E, PP, flavone, sugars, organic acids, tannins, volatile oil, vanillin, triterpenoid saponosides, beta-sitosterol, fat (lecithin, glycerides of fatty acids in seeds), minerals (potassium, calcium, magnesium, iron). Vitamin C (ascorbic acid) plays an important role in human body. The greatest amount is found in plants which reached maturity. It is concentrated in the rose hip flesh. Solutions easily destroy it in the presence of UV, of copper, silver, iron and oxidative enzymes traces. Vitamin C participates actively in all processes of oxidoreductions of the living cell. Its lack in food causes the disease called scurvy which manifests itself by inflamed and bleeding gums, tooth loss. Rose hip fruits are known as medicines since prehistoric times.

Keywords: ascorbic acid, chemical composition, rose hip, spreading area, stationary factors.

Sorina Ropciuc, Radu Cenuşă, Rodica Căpriţă, Iuliana Creţescu

Influence of Climatic Factors on the Nutritional Value in *Cynosbati Fructus*

133

Abstract

Ascorbic acid (vitamin C) is an important component in the fruits of dog rose. Its slightly laxative and diuretic effect, for which the dog rose is used in folk medicine, is supposed to be due to its content rich in pectin and organic acids. The investigated material were the fruits of *Rosa canina* L collected from 42 biotypes marked on the route: Suceava – Pătrăuţi – Lunca Sucevei (Dărmăneşti) - Costâna - Părhăuţi - Todireşti - Cajvana - Arbore - Solca - Clit - Marginea - Rădăuţi – Suceviţa – Palma during 2007, 2008, 2009 and 2010 years. The quantitative values of rainfalls influenced the content in vitamin C and the humidity of the fruits. The content in vitamin C increased with the increase in humidity and with the decrease in temperature.

Keywords: rose hip fruit, food principles, low caloric value, carbohydrates.

Laura Stan, Liviu Al. Mărghitaş, Daniel Dezmirean

Quality Criteria for Propolis Standardization

137

Abstract

Propolis is a natural resin produced by honeybees with high biological value for human kind. Although propolis is intensively used in medicine, cosmetics and lately in food industry also, there is no quality standard (Romanian or European) for this specific beeprodut. This article presents the quality criteria for Romanian raw propolis (56 samples) as a collection of data obtained along the years through extensive qualitative and quantitative analysis. Data obtained for extraction yield (59%±8%), wax content (35%±8%), total flavonoids (9±3%) and total phenolics (28%±7%), antioxidant activity against DPPH are presented.

Keywords: antioxidant activity, DPPH, flavonoids, quality standard of propolis, phenolic compounds, propolis.

Razvan Stefan, Silvana Popescu, Maria Bindea, Adriana Popa, Oana Raita

EPR Structural Investigations on $\text{Ag}_2\text{O-B}_2\text{O}_3\text{-CaO-P}_2\text{O}_5$ Vitreous System

141

Abstract

Glass samples from vitreous system $1.5\text{Ag}_2\text{O}98.5\%[0.47\text{B}_2\text{O}_3(0.53-x)\text{CaO}x\text{P}_2\text{O}_5]$ with $0 \leq x \leq 0.08$ have been obtained by undercooled method. The magnetic species existing in glass powders have been highlighting by mean of electronic paramagnetic resonance (EPR). The resonance linewidth analysis reveal the interactions between magnetic ions.

Keywords: EPR, glass, silver

Emil Tirziu, Ciceronis Cumpanasoiu, Radu Valentin Gros, Monica Seres

Yersinia enterocolitica Monographic Study

144

Abstract

Germs from *Yersinia* genus have a vast ecologic niche, being met at different domestic and wild animal species, but also in food, water and soil. The majority of yersinias live in the digestive tract of human and numerous animal species, especially rodents, but also in soil, plant debris, waters etc. Numerous species of *Yersinia* genus could produce characteristic infections in human, the main source of infections is represented by rodents and hematophagous insects or, more frequently, by water or contaminated food. In a 1999 study, Mead and coauthors established that the *Yersinia enterocolitica* prevalence in food, in USA, is around 90%. Foods of animal origin more frequently contaminated with *Yersinia enterocolitica* are: pork, poultry, beef and lamb meat, milk, ice-cream, sea fruits etc., among them pork meat and milk represents the sources of the most numerous toxo-infection outbreaks in human, in different world regions. Bacteria determine infections which interest the digestive tract in numerous animal species and human, with diarrhea, lymphadenitis, pneumonia and abortion are the most important symptoms. *Yersinia enterocolitica* enter the human body regularly by oral ingestion, and localize itself with predilection in the distal portion of the ileum and at the ileocaecal appendix and proximal colon level, were determine a terminal ileitis with lymphadenitis, acute enterocolitis, and secondary accompanied with nodosum erythema, poliartiritis that could be complicated with septicemia, sometimes leading to death.

Keywords: *Yersinia enterocolitica*, bacteria, epidemiology, incidence.

MORPHOLOGY AND PHYSIOLOGY

Carmen Berghes, Petrut Tanase, Monica Parvu, Cristina Dinu, Cuca Daniel

Contributions to the Study of the Esophagus and Stomach Morphology in Guinea Pig

150

Abstract

Aim of the study is to illuminate some data on gastric esophageal junction morphology in Guinea Pig brings explanations on mice unable to vomit. There are few literature data on the conformation and structure of the laboratory mouse esophagus and stomach. They try to explain why the mouse can not vomit. Deviating slightly to the left only in the cervical region the esophagus runs mainly in the cervical region the esophagus runs mainly mid sagittally along the dorsal aspect of the trachea. Its length is about 30 mm (3, 4). Through out its length the diameter is about 2 mm. Through out its length the diameter is about 2 mm. The epithelium of the esophagus is moderately to extensively cornfield. The submucosa is free of gland. Both layers of the muscular coat are made buddle of skeletal muscle. The esophagus enters the middle of the lesser curvature. The esophageal sphincter is a circular muscle that surrounds the base of the esophagus. At its lower edge, it has muscle fibers that insert into the limiting ridge. So when the sphincter contracts, it not only constricts the walls of the esophagus, it also pulls the sides of the limiting ridge's "U" together, thus hiding and tightly closing the esophageal opening. Muscle layer is formed on the entire length of skeletal muscle fiber

Keywords: esophagus, stomach, Guinea Pig

**Gabi Dumitrescu, Lavinia Ștef, Dan Drinceanu, Calin Julean, Ducu Ștef,
Liliana Petculescu Ciochina, Cosmin Pandur**

Control on the Wheat Non-Starch Polysaccharides (NSP)' Anti-Nutritional Effect on Intestinal Wall, by
Introducing Xylanase in Broiler Feed

155

Abstract

The experiment was performed in order to determine the protocol of xylanase utilization to fight against the anti-nutritional effect exerted by wheat non-starch polysaccharides (NSP) on intestinal wall in broilers. The experimental works were carried out on broilers, the hybrid Ross 308. We formed four experimental groups, as follows: the experimental group LE1, fed on forage without wheat in its structure, the experimental group LE2, fed on combined forage including wheat in a proportion of 40%, the experimental group LE3 including wheat in a proportion of 40% and xylanase, in an amount of 25 g / to, and the experimental group LE4, including wheat in a proportion of 40% and xylanase, in an amount of 100 g. At 3 and 6 weeks, successive to chicken killing, we sampled the intestinal wall and determined the main changes occurred. The histo-morpho-metric analysis of the four experimental groups led to the conclusions that: wheat administration in a proportion of 40% in the individuals in LE2 determines the development of vilositary muscle elements, decreased of intestinal villosities height, leucocitary migration, and also vascular ectasies and reduced hemorrhagic areas; xylanase addition in the wheat-based feed may be associated with the increase of intestinal villosities height, and especially at jejuna level the villosities seem slightly branched, a slight hypertrophy of the epithelial cells compared with the individuals in LE2, the increase of goblet cells frequency and hypertrophy of the capillary network. These microscopic aspects come together with more intens digestion and absorption processes, and especially in the experimental group 4.

Key words: broiler, intestinal wall, non-starch polysaccharides, xylanase, wheat.

Svätoslav Hluchý, Norbert Bolcsó, Róbert Toman

Histological and Morphometric Study of Regressive Changes in the Mammary Glands of Pigs during
Regression

164

Abstract

The work deals with the histological and morphometric description of regressive changes in the mammary glands of swine after lactation. Samples of mammary glands of thoracic, abdominal and pubic udders were taken soon after they were killed. Samples were processed by histological and histochemical methods and evaluated by subjective and quantitative morphometrical methods. It was found that post-lactation increases the relative volume of connective stroma up to 75.10 ± 14.76 % of collagen in the tissue falls to 74.13 ± 14.87 % and the loose connective tissue, which was part of glandular parenchyma lobules accounts for only 0.97 ± 2.13 %. Adipose tissue is 18.93 ± 14.93 % of the udders volume.. Relative of glandular parenchyma fell to 5.97 ± 4.95 % and mainly consists of a interlobular and lobar ducts and atrophic alveoli. Epithelium is generally in the mammary glands 4.22 ± 3.56 % and lumen 1.75 ± 1.81 %. 1 cm^3 of tissue in the mammary glands located 190745.52 tubuloalveolar structures. Alveoli reach an average size of $36.80 \pm 11.57 \mu\text{m}$. It was found relative volume of the walls (epithelium) and cavities (lumen) of each alveolus, the amount of epithelial cells and the nucleocytoplasmic ratio. The individual building components mammary glands were calculated correlation relations.

Keywords: histology, morphometric study, mammary glands, pigs, regression.

Svätoslav Hluchý, Norbert Bolcsó

Histological and Morphometric Study of Lactating Mammary Glands in Sows

168

Abstract

This work deals with the quantitative histological morphometric description of the mammary glands of sows during the stage of lactation. As experimental animals were used White meat breed pigs (5 animals) kept in standard conditions VÚŽV in Nitra. After killing the animals we sampled mammary glands and have them processed by conventional histological and histochemical methods. Morphometric methods, we found that glandular parenchyma of mammary glands of sows consists of a lobules width $615.28 \pm 165.09 \mu\text{m}$ and length $1827.78 \pm 621.43 \mu\text{m}$. Glandular parenchyma is 64.84 ± 12.87 %, from which secretory epithelial cells of the alveoli are 19.11 ± 4.58 % and alveoli lumen accounts 45.73 ± 13.01 %. Connective tissue stroma is 33.68 ± 10.45 %, of which the collagen tissue accounts for 8.31 ± 9.88 % and the loose connective tissue 25.37 ± 9.61 %. Adipose tissue forms in this period, only

1.48 ± 4.50%. The work was described and quantified in alveolar differentiation, the average size and frequency of individual types of alveoli and their relative volume of the walls (epithelium) and cavities (lumen), the amount of secretory epithelial cells and the nucleocytoplasmic ratio. The average size of alveoli was 131.06 ± 36.07 µm, and the size of alveoli varied from 77.69 µm to 192.25 µm. Thickness interlobular ducts was 335.00 ± 78.69 µm. The average frequency of the alveoli is 226933.08 ± 161136.27 per 1cm³ of tissue in the mammary glands. Using correlation coefficients, we describe the relationships between structural components of the mammary glands.

Key words: histology, mammary glands, morphometric study, sows.

Daniela Moț

The Incidence Increasing of Sheep Some Diseases Caused by Heavy Rainy Spring of 2010 in the West Part of the Country

174

Abstract

As a result of heavy rains from spring of 2010 became to appear, after two months of animals maintaining in high humidity conditions, some health problems. Were been examined by clinical point of view 280 sheep from four herds of Timiș district particular breeders from Transilvanian Merinos and Țurcană breeds, 2-5 years aged. In the same time were been taken samples from foot lesions of affected sheep and were been examined from morpho-pathological point of view the 29 sheep bodies slaughtered by necessity. After all examinations was been observed that 197 sheep (70.35%), more than half from examined animals had foot lesions and respiratory clinic signs caused by exceeded rains from last months. From the necessity slaughtered sheep bodies were been isolated larvae from *Dictyocaulus filaria*, *Oestrus ovis* and adults of *Psoroptes ovis*, parasites who had found optimum conditions of development and to produce infections in rainy springs, with water and mud remained long time on pastures. From foot samples was been isolated in Microbiology laboratory *Fusobacterium necrophorum*, a bacteria responsible of interdigitally dermatitis in sheep. All these problems caused by heavy rains had as results important economic damages through milk and wool decreased productions and high costs with antiinfectious and antiparasitical treatments.

Keywords: *Dictyocaulus filaria*, *Fusobacterium necrophorum*, interdigitally dermatitis, *Oestrus ovis*, *Psoroptes ovis*.

Daniela Moț, Teodor Moț, Emil Țirziu, Ileana Nichita

The Hematological Indexes Values in Sheep Correlated with Season

177

Abstract

From 40 healthy sheep breeding in good conditions of hygiene and feeding belonging to particular herds from the West side of the country were been taken blood samples in most important seasons of the year: in spring, before pasturage period and in autumn, after pasturage period. Sheep were been periodically preventive treated against parasites and were clinically healthy. Were been followed haematological parameters like haemogram (number of erythrocytes, haemoglobin, haematocrit, erythrocytic indexes), leucogram (number of leucocytes, leucocytic formula) and those blood biochemical indexes (total seric proteins, proteic fractions, glucose, uric acid, GPT, creatinin, calcium, phosphorus, magnesium). The obtain values in spring season were smaller in comparison with those from autumn as a result of less favourable conditions in winter, when sheep can't have the same benefits like in warm season, with high quality fresh food and life conditions. This fact is emphasized in these sheep obtained productions.

Keywords: blood biochemical indexes, erythrocytes, erythrocytic indexes, haemoglobin, hemogram, leukogram,.

Monica Pârnu, A.T.Bogdan, Ioana Cristina Andronic, Adriana Amfim

Aspects of Energy Metabolism in Mangalitsa Pigs Exposed at Thermic Neutral Temperature

180

Abstract

The studies aimed the energy metabolism determination in Mangalitsa pigs exposed at thermic neutral temperature, compared to Large White pigs. The experimental period was between 80 and 100 kg liveweight. The animals had free access to standard, isoprotein and isocalory diets, with 13.5% crude protein (CP) and 3100 kcal/kg metabolizable energy. Feed intake was measured on a daily basis. The energy-protein balance was calculated on the basis of comparative slaughter made at the beginning and end of the experiment. The metabolizable energy (MEc) was estimated by chemical analysis (feed and excreta) using mathematical modelling and the Whittemore's formula. The metabolizable energy utilization efficiency was 0.61 at Large White and 0.53 at Mangalitsa.

Keywords: energy metabolism Mangalitsa pigs

Emil Tirziu, Ileana Nichita, Ciceronis Cumpanasoiu, Daniela Mot, Radu Valentin Gros, Monica Seres, Magdalena Simona Muntean
Anatomopathological Changes Induced by Mycotoxins

183

Abstract

Fungi or mycetes represents the biggest group of microorganisms from the entire biologic system (nearly 250.000 species), very widespread in nature. They are inferior vegetal organisms, heterotrophic, lacking chlorophyll or other trophic pigments, which grow up on live organic substrates or on decaying substrates. The intensive researches from the last two decades had proved that only 30 – 40% from the total number of fungi species is capable to synthesize some toxic metabolites, and, among this species, only 60 species had proved to be dangerous for human or animals. Researches about mycotoxins action upon factors that interfere with the natural or acquired immunity are relatively recent and most of them refer to aflatoxins. The immune-suppression phenomena rely on morphological and histological modifications of lymphoid organs, changes of blood parameters, changes of functional capacity of humoral and some cellular factors. The presence of mycotoxins in feed causes major economic losses, either by their direct action (defined by disease state) or indirectly, by affecting the specific and nonspecific resistance of the organism. In the present study we studied the effect of aflatoxins upon the main organs involved in immune response, pathological changes induced by mycotoxins. To determine the influence of mycotoxins on food conversion, weighings were made at the beginning and the end of the experimental period.

Keywords: acquired immunity, animals, histological modifications, mycotoxins.

Robert Toman, Mária Adamkovičová, Svätoslav Hluchý, Michal Cabaj, Jozef Golian
Quantitative Analysis of the Rat Testes after an Acute Cadmium and Diazinon Administration

188

Abstract

Changes in the rat testes caused by cadmium and organophosphate insecticide diazinon were evaluated using the morphometry methods. 36 hours after an single intraperitoneal administration of cadmium at a dose of 2 mg/kg b.w., diazinon 20 mg/kg b.w., and cadmium-diazinon 2 and 20 mg/kg, respectively, a significant increase in dilatation of blood vessels ($P < 0.05$) after an administration of diazinon, significant increase of intraepithelial spaces volume in testes in cadmium exposed group ($P < 0.05$) and highly significant increase in intraepithelial spaces volume in cadmium-diazinon treated animals ($P < 0.0001$) were observed. Cadmium and diazinon are toxic for male reproduction and can pose a higher reproductive effects when mixture of both toxicants enters the body.

Keywords: cadmium, diazinon, morphometry, rat, testis

GRASSLAND AND FODDER CROPS

Larisa Cremeneac, Tatiana Boclaci
The Study of the Vermicompost Influence on the Harvest and on the Quality of Forage Cultures

192

Abstract

The purpose of the research was the appreciation of the vermicompost quality. This material was obtained as a result of bioconversion of organically wastes (obtained from cattle) by worm cultivation, using wormculture (especially the Red Hybrid of California). The bioconversion process of organic wastes is implemented in the Experimental Section of the Scientific and Practical Institute of Biotechnologies in Animal Husbandry and Veterinary Medicine. As a result of the studies to effect in several states, including the Republic of Moldova, it has been stated that the vermicompost has a positive influence on the productivity of cultures, diminishing the period of culture growing, increases their resistance to unfavorable clamaterical conditions and to frequent phytotechnical maligns. In the agricultural production obtained as a result of cultivating on vermicompost. As a result of the research it has been stated that the quantity of the C vitamin in some of the vegetables has increased by 1,5 – 9,4 times. What's more the vermicompost has influenced positively the quality of the alfalfa, maize and sugar fodder, in which the azoth compounds quantity has diminished by 1,32 – 2,66; 3,47 – 3,76 and 1,10 – 1,14 times, in comparison with cultures cultivars tied with the help of mineral fertilizer. So, the agricultural and ecological importance of the vermicompost consists in improving the quality of agricultural production.

Keywords: alfalfa, maize, mineral fertilizer, sugar fodder, vermicompost.

Corina Cristea, Neculai Dragomir, Teodor Cristea, Dorin Rechițean, Carmen Dragomir, SebastianToth, Samira Răvdan, Mihai Lunca Influence of Planting Method on some Productivity Elements for Seed Production in <i>Festuca rubra</i> L. (I) Number of Generative Sprigs	196
--	-----

Abstract

The results obtained reflect the importance to know the way the generative sprigs form, the technological factors that influence the number of sprigs and, finally, the seed production. The utilization at planting of a reduced seed norm (5 kg/ha) strongly influences the sprigging capacity in red fescue, compared with a bigger norm, respectively 20 kg/ha.

Keywords: *Festuca rubra*, productivity elements, seed production.

Corina Cristea, Neculai Dragomir, Teodor Cristea, Dorin Rechițean, Carmen Dragomir, SebastianToth, Mihai Lunca Influence of Association Type with <i>Festuca rubra</i> L. on Forage Quality	199
---	-----

Abstract

Forage quality has a great importance in animal nutrition and is much influenced by the floristic composition structure of the temporary pastures. Legumes play an important role in the production of nutritionally-balanced forage. Analyzing the values of some quality indices of forage (crude protein, crude cellulose, organic matter digestibility, lignin, hemicellulose, ash, ADF, NDF), we may observe a significant increase of these indices in the variants planted in association (*Festuca rubra*, *Trifolium repens*, *Lotus corniculatus*).

Keywords: association type, *Festuca rubra*, forage quality.

Carmen Dragomir, Laura Mihăescu, Neculai Dragomir, Corina Cristea, SebastianToth, Mihai Lunca, Samira Răvdan, Iulian Frățilă Nitrogen Amount Transferred from <i>Trifolium resupinatum</i> L. to <i>Lolium multiflorum</i> L., under Cultivation in Association	202
---	-----

Abstract

The experimental display included a bifactorial experience, with different proportions of *Trifolium resupinatum* and *Lolium multiflorum*-based associations and different Nitrogen fertilization doses (N_0 , N_{100}). The studies, performed during a 3-year period, made evident the dry matter yield, the total Nitrogen amount and the amount of transferred Nitrogen. According to association's floristic composition, the amount of N transferred from legume species, on the whole, was between 48 and 145 kg/ha, in the variants without fertilization, and between 36 and 99 kg/ha, in the variants fertilized with N_{100} .

Keywords: dry matter, *Lolium multiflorum*, total Nitrogen, transferred Nitrogen, *Trifolium resupinatum*.

Neculai Dragomir, Maria Sauer, Corina Cristea, Carmen Dragomir, Dorin Rechițean, Ioan Sauer, Sebastian Toth, Darius Văcariu Forage Quality Determined by Botanic Species' Contribution on Permanent Pastures	205
--	-----

Abstract

The chemical composition of the forage obtained from permanent pastures is determined, in its turn, by the floristic structure consisted of species belonging to various botanic families. Each botanic species presents a specific chemical content and a certain contribution to the balancing of forage's nutritional value. The chemical analyses performed, at species level, revealed the importance of the "diverse" species, which, with their content in mineral elements, may influence animals' capacity of production and reproduction. Some of the species, considered to be weeds within the permanent pastures' floristic composition, presented high crude protein content values: *Achillea millefolium* with 24.22%, *Taraxacum officinale* 24.06%, *Urtica dioica* with 32.46%, *Plantago major* with 17.04%, etc.

Keywords: botanic composition, chemical content, permanent pasture.

Neculai Dragomir, Liliana Găman, Carmen Dragomir, T. Cristea, Corina Cristea, Sebastian Toth, Samira Răvdan Study of the Relationships Between Technological and Productivity Elements that Determine Seed Yield in Birdsfoot Trefoil (<i>Lotus corniculatus L.</i>)	208
--	-----

Abstract

The chemical composition of the forage obtained from permanent pastures is determined, in its turn, by the floristic structure consisted of species belonging to various botanic families. Each botanic species presents a specific chemical content and a certain contribution to the balancing of forage's nutritional value. The chemical analyses performed, at species level, revealed the importance of the "diverse" species, which, with their content in mineral elements, may influence animals' capacity of production and reproduction. Some of the species, considered to be weeds within the permanent pastures' floristic composition, presented high crude protein content values: *Achillea millefolium* with 24.22%, *Taraxacum officinale* 24.06%, *Urtica dioica* with 32.46%, *Plantago major* with 17.04%, etc.

Keywords: botanic composition, chemical content, permanent pasture.

Marcela Dragoș, Paul Pîrșan The Impact of Sowing Technology on Ponderal Features of Winter Wheat Seeds in Timișoara	211
---	-----

Abstract

During an experience performed to elaborate an efficient technology of seed production in birdsfoot trefoil, we observed a series of correlations between yield and the elements of productivity, which exert a strong influence on seed quantity. In this viewpoint, the matrix of correlations between the elements of fructification, in the case of the influence exerted by birdsfoot trefoil cultivation method, made evident the following correlation coefficients: $r = 0.81^{**}$, between the number of pods/plant; $r = 0.82^{**}$, between the number of generative sprigs and the number of pods/inflorescence; $r = 0.98^{**}$, between the number of generative sprigs and the number of pods/plant.

Key words: birdsfoot trefoil, seed, correlation coefficients, element of productivity

Smaranda Mășu, Neculai Dragomir The Effect of Applied Organic Fertilizers on the Bioavailability of Heavy Metals in <i>Lolium Perenne</i> , Cultivated on Fly Ash Deposits	218
--	-----

Abstract

The study aims to monitor the capacity of certain organic fertilizers (volcanic tuff and municipal sludge), applied as such and mixed with volcanic rocks with a high content in clinoptilolite, to determine the covering with vegetation of fly ash deposits resulted from the combustion of lignite in thermal plants. Both biosolids (20 t/ha) and volcanic rock with high clinoptilolite content (5 t/ha) determined the installation of a vegetative layer and diminished the soil metal bioavailability to the *Lolium perenne* plant biomass. When using the organic-zeolite mixture, a synergistic effect is recorded of the two components of the treatment agent and an increase of the biomass with 448%. Moreover, the resulted biomass shows the highest reductions of metal bioaccumulations, of 38-46% for Zn and Fe, of 62% for Cu and between 82-89% for Cr, Ni and Pb.

Keywords: bioaccumulation, fly ash, *Lolium perenne*, organic-zeolite fertilizer

Laura Mihăescu, Neculai Dragomir, Carmen Dragomir, Corina Cristea, Sebastian Toth, Mihai Lunca, Samira Răvdan Determination of the Optimal Planting Period in Persian Clover (<i>Trifolium Resupinatum L.</i>), in Plain Conditions	223
---	-----

Abstract

Persian clover (*Trifolium resupinatum L.*) represents an annual forage legume cultivated for forage quality and for its importance as ameliorating plant within the forage crop rotation. The researches performed on the determination of the optimal planting period at the beginning of autumn proved the existence of a direct relationship between the sum of temperatures at planting, at the beginning of winter, and the dry matter yield, respectively between the number of sprigs at the beginning of winter and the content in soluble sugars in roots. According to planting date, the dry matter yield oscillated between 1.5 t/ha in the variant planted on 20th September and 9.4 t/ha in the variant planted on 10th August.

Keywords: dry matter, planting epochs, soluble sugars, *Trifolium resupinatum*.

Sebastian Moldovan, Gheorghe David

Impact of Fertilisation on Yield and Quality Parameters in Chickpea (*Cicer Arietunum L.*)

226

Abstract

The research presented in this paper aimed at the study of three native chickpea cultivars, as follows: the chickpea cultivars Burnas, Rodin, and Cicero 1. We set our experiments on a cambic, moist phreatic (poorly gleyed), poorly decarbonated chernozem on loessoid-dusty, clayish-loamy deposits of the experimental field of the Didactic Experimental Station of the Banat University of Agricultural Science and Veterinary Medicine in Timișoara (Timiș County, Romania). Among the experimental chickpea cultivars, the chickpea cultivar Burnas is to be noted for its mean yield in all three fertilisation rates: 2,994 kg/ha. The chickpea cultivar Rodin comes second, the difference between the two being very significant. Establishing fertilisation rates for the chickpea cultivars mentioned above is extremely important since biological materials were developed in different soil and climate conditions from the research area and from the area in which they are to be cultivated. The lowest yield was in the chickpea cultivar Cicero 1, the mean for the three fertilisation rates being 1,945 kg/ha. As for the fertilisation rates, the fertilisation variants N₅₀P₆₀K₆₀ and N₁₀₀P₆₀K₆₀ resulted in a very significant increase.

Keywords: chickpea cultivars, fertilisation rates.

Anca Pricop, Smaranda Masu, Benoni Lixandru, Florica Morariu, Neculai Dragomir,

Isabelle Laffont-Schwob, Dumitru Popescu

Strategies for Covering Fly Ash Dumps with Plant Species Suitable for Phytostabilization

229

Abstract

In the context of the revegetation of fly ash dumps, the strategy chosen is very important in order to obtain a vegetal layer that quickly and efficiently covers the fly ash dump, as well as, to allow the wildlife habitat development. The strategy must include: adequate treatments by incorporating fertilizer and amendments, as composts and modified indigenous volcanic tuff; selecting plant species and agricultural work in accordance with geographical and weather conditions. Our *in situ* experiment on a lignite fly ash dump was performed in the fall during the seeding period of *Festuca arundinacea* and *Onobrychis viciifolia* species to provide the water requirement of plants, and consequently a quick and efficient development of plants, enabling them to resist later in the hot and drought days of summer. Among the seeding species, *Festuca arundinacea* adjusted more easily in the experimental variants. In this case, the treatment with biosolids and modified indigenous volcanic tuff can reduce the metal bioaccumulation, especially Pb (with 84-94%), Fe (with 53-63%) and Cu, Cr and Ni (between 12-53%). The other plant species did not tolerate the unfertilized fly ash. The fertilizer and modified indigenous volcanic tuff provided establishing conditions for the plant supplying the nutrients. Metal transfer to aerial tissues was reduced compared to control by 29.5-59.3% in the case of Cu, Cr, Ni and ranged 50-66% for Pb. Limiting the transfer of heavy metals in plant tissues is in accordance with a healthy habitat for the wildlife.

Keywords: heavy metals, vegetal layer, metal-tolerant plant species, bioaccumulation

Dorin Rechișean, Neculai Dragomir, Corina Cristea, Carmen Dragomir, Maria Sauer,

Ioan Sauer, Sebastian Toth, Darius Văcariu

Study of the Floristic Biodiversity Available on Permanent Pastures Located at Different Altitude Levels

235

Abstract

The researches carried out between the altitude levels of 236 and 1300 m, in 13 localities from Banat Mountains, proved the influence exerted by stationary natural conditions on the botanic diversity of the vegetal cover. From one vegetal association to another, the total number of botanic species ranged between 9 and 21; the biggest number of species was recorded between 236 – 630 m altitude, and the smallest one between 462 – 650 m. The mean coverage degree of these species was 42.69% in the species belonging to the *Poaceae* Family (with a variation of 30-70%) and 12.85% in the species belonging to the *Fabaceae* Family (variation of 25-65%).

Keywords: altitude, botanic composition, permanent pasture.

Mariana Rusu, Doina Popa The Influence of Sheep Fertilizing and Oversowing on the Lawns of the Cindrel Mountain	239
---	-----

Abstract

Massive Cindrel natural grasslands have an estimated yield between 1.9 to 3 t / ha. Applying environmentally friendly technologies are expected to improve the yield crops by reducing to extinction the floristic composition of some species like *Nardus stricta*, while *Festuca rubra* and *Agrostis tenuis* percentages increase and production yield rise 2 to 2.5 times. The paper aims to increase the intake rate of the pastures during grazing the areas with sheep, following by over seeding the surfaces with simple or complex mixtures of grasses and legumes. Suggested system is unpollutant and induces protection of the prato-ecosystems from the mountain regions.

Keywords: floristic composition, grazing, sheep.

Maria Sauer, Ioan Sauer, Neculai Dragomir, Carmen Dragomir, Corina Cristea, Dorin Rechițean, Teodor Cristea, Darius Văcariu Red Clover's Contribution to the Increase of Forage Quality on Temporary Pastures, Cultivated in Hill Regions	243
---	-----

Abstract

The temporary pastures cultivated in hill regions generate, beside a big dry matter yield, a special forage quality as well. In this direction, the researches performed show that in the temporary pastures consisted of a complex structure of perennial gramineae and red clover in different proportions, forage quality is determined by the following indices: the ratio Ca/P ranges between 2.06 and 4.20, the ratio K/Ca + Mg has values below 2.2, the Mg content is between 0.35 and 0.55%, the digestibility between 70.10-75.42% and the amount of crude protein between 1203 and 1340 kg/ha.

Keywords: temporary pasture, quality indices.

Nicușor Sima, Rodica Sima, Florin Păcurar, Radu Constantinescu The Study of Several Perennial Fodder Legume and Grass Complex Mixtures for the Establishment of Temporary Pastures in Transylvanian Plain	246
---	-----

Abstract

Intensification of extremely weather phenomena during vegetation period of plants determined serious problems for Romanian farmers by partial or total disparagement of cultures in the last years. These problems are also common for fodder producing farmers from Transylvania. Among the alternatives, which farmers can follow, the revision of structure and gravity of crops can be considered. Sown pastures with complex mixtures (more than three perennial fodder grass and legume species) well adapted to the new ecological conditions, through their multifunctional character, can represent real alternatives to annual fodder crops. In this paper the results of a study regarding 8 complex mixtures of perennial fodder species and a pure alfalfa crop, cultivated on three levels of fertilization, are presented. The M7 mixture (*Trifolium pratense* L., *Lotus corniculatus* L., *Trifolium alexandrinum* L., *Dactylis glomerata* L., *Festuca pratensis* Huds., *Lolium x hybridum* Hausskn.) on the third cutting recorded the smallest yield difference between the unfertilized variant and the variant fertilized with the highest dose.

Keywords: mixtures, temporary pastures, yield

Nicușor Sima, Rodica Sima, Gheorghe Mihai, Marius Sabo, Dorin Pleșa, Ioan Peț, Adrian Bărbos Research Concerning the Using of Sorghum x Sudan Grass Hybrid (<i>Sorghum bicolor</i> (L.) Moench × <i>Sorghum sudanense</i> (Piper) Stapf.) in the Fodder Plant Assortment for Fresh Matter Production in Transylvania	251
---	-----

Abstract

The establishment of a varied assortment of fodder plants which allows the obtaining of sustainable harvests in the context of the last year's weather and climatic evolutions has to be an important objective both for specialists and for farmers. The irregular distribution of rainfalls and the high temperatures during vegetative period determine a deficit

of fodder production. In these conditions sorghum x Sudan grass hybrid was studied as complementary fresh matter (FM) source to the other fodder crops considered as traditional in Transylvania. The FM yield obtained with unfertilized sorghum x Sudan grass hybrid in the two cuttings was lower than yields obtained with grass and legume mixtures (oat and pea mixture, triticale and pea mixture) but the yield differences were not significant.

Keywords: fresh matter, fodder plants, yield.

Sebastian Toth, Neculai Dragomir, Carmen Dragomir, Corina Cristea, Teodor Cristea, Ioan Cheşa, Darius Văcariu, Samira Răvdan

Italian Ryegrass (*Lolium Multiflorum L.*) Cultivation in Cover Crops System, in Vegetation with some Autumn Forage Legume Species

255

Abstract

In the cultivation system of the Italian ryegrass (wheat → annual autumn forage legume → Italian ryegrass), compared with the classic cultivation variant in the rotation wheat → Italian ryegrass, where the land remains discovered from wheat harvesting to ryegrass planting, almost 2.5 months, the forage yield increases with 29.6 – 73.0 % according to legume species and yield utilization, by introducing peas or autumn vetch between the wheat and the Italian ryegrass. By introducing legume species within the rotation system, the ryegrass yield increases with 4.94 – 5.11 t/ha DM, in the case of autumn forage peas, and with 3.76 – 5.77 t/ha DM, in the case of autumn vetch, according to the method of utilization of the legume biomass.

Keywords: Cover crops, forage legume, *Lolium multiflorum*.

TECHNOLOGIES APPLIED IN ANIMAL HUSBANDRY

APICULTURE

Alin Jivan, Silvia Pătruică, Antonina Jivan

The Degree of Intoxication at Bees with Some Substances from the Pesticides Group

258

Abstract

The purpose of the paper is to prove the impact of the treatment with pesticides, at the entomophilous crops, on their main pollinator, the bees, and also to highlight the protection measures of the man and bee families against intoxications with pesticides. Refers to some commonly used insecticides in agriculture for the control of harmful insects. In order to detect the intoxication degree of bees, samples of honey contaminated with pesticides prepared and administered as food to bees from experiments, were examined using the HPLC (High performance liquid chromatography) chromatograph. The control sample and also the samples contaminated with Decis 2.5 EC, Faster 10 EC, Karate Zeon and Lider 70 WG were analyzed. Some solutions have been prepared with all the commercial products enumerated. The process has been started with the concentration recommended by the producing firm for each product at it was considered that it represents the 1% concentration used in combating pests from agricultural fields, from this percent there was an increase respecting the dilution up to the concentration of 1,25%.

Keywords: bee families, determination, substances.

Antonina Jivan (Rişcu), Marian Bura, Silvia Pătruică, Alin Jivan

Establishing Some Qualitative Connections at the Pollen Collected by Bees and Produced by Spontaneous Flora in Different Moments of the Day

263

Abstract

Based on the bibliographic study it has been observed the fact that poleniferous plants have diverse blooming, depending on the time of the day. Temperature and humidity are climatic factors with a special influence in opening the corolla of a flower and production of pollen for bees. Also, every species has different needs for temperature degrees in order to bloom. The bees start collecting the pollen from the early hours in the morning if the temperature is over 14⁰C, and the collection lasts until the evening. During this activity, the bees visit a large number of flowers, as the blooming of some poleniferous plant species depends very much on the moment of the day. This process is

easy to track by watching the entrance of the beehive for the bees that enter loaded with pollen clusters on their legs. If observations start from 8 o'clock it can be seen that around midday the colour of the pollen clusters on bees' legs change, so that at 12 o'clock none of the bees that were bringing yellow pollen from the dandelion in that moment brings any more pollen from them because the dandelion has closed its corolla and for the bees it no longer represents a polleniferous source at midday. After 12, fructiferous trees are an important source of pollen. The pollen has different qualitative and nutrient properties depending on the plant species nurturing the bees.

Keywords: bee, flower, polleniferous plant, pollen.

Silvia Pătruică, Ionuț Bănățean- Dunea, Alin Jivan, Antonina Jivan, Alin Stroe
Research on the Influence of Apiary Biostimulators on Bee Families Development in Spring

267

Abstract

In this paper is presented a study on the influence of apiary biostimulators on the development the bee families in spring. The research was made at beeyards from Armenis, Caras-Severin county from 20 March to 10 April 2010. The biological material being represented by 20 bee families of *Apis mellifica carpatica*, Banat ecotype, splitted in 2 experimental grups of 10 families each with equal strength. The bee families were fed sugar syrup where introduced savory and underbrush extracts. During the research period was analized the number of brood cells at 7, 14, 21 days. The experimental group that was fed bee biostimulator recorded statistical differences in terms of the number of brood cells at 14 and 21 days compared with control grup.

Keywords: apiary biostimulators, bee families, spring

Silvia Pătruică, Alexandru T. Bogdan, Marian Bura, Ionuț Bănățean- Dunea, Marius Gâltofeț
Research on the Effect of Acidifying Substances on Bee Families Development and Health in Spring

271

Abstract

The paper presents a study on the effect of acidifying substances on the development the bee families during spring. The research was made at beeyards from Jebel, Timis county from 15 April to 4 May 2011. The biological material being represented by 30 bee families of *Apis mellifica carpatica*, Banat ecotype, divided in 3 experimental grups of 10 families each with equal strength. The bee families of experimental grups were fed sugar syrup where incorporated lactic or acetic acid. During the research period was analized the number of brood cells at 7, 14, 21 days. Experimental groups that were fed acidifying substances recorded statistical differences in terms of the number of brood cells at 14 and 21 days comparend with control grup.

Keywords: acidifying substances, bee families, spring.

CATTLE PRODUCTIONS

Stelian Acatincăi, Iulian Tripon, Ludovic Toma Csiszter, Dinu Gavojdian, Silvia Erina, George Gabriel Răducan, Traian Cismaș
Study on Resting Behavior in Three Months of Age Calves from Romanian Black and White Breed During Summer Season

276

Abstract

The aim of this paper was to measure the main aspects that characterize the resting behavior of three months old calves during the summer season. During the experiments the following resting behavior aspects were determined: number of resting periods, the length of resting periods. Results showed that in the summer season the total length of laying down periods was 254.7minutes in the morning, 237.4 minutes in the afternoon and 334.2 minutes during the night. In the summer season calves stood down in 4.5 periods during the morning, 4.7 periods during the afternoon and 3.8 periods during the night. There were significant differences between morning and night ($p<0.05$) and between afternoon and night ($p<0.05$) for total time spent lying down by calves. In the summer season the total time spent resting (sleep and rest laying down) was 113.4 minutes in the morning, 158.5 minutes in the afternoon and 158.3 minutes during the night. There were significant differences between morning and afternoon ($p<0.05$) and between morning and night ($p<0.01$) for total time spent resting by calves.

Keywords: calves, resting behavior, Romanian Black and White breed.

Stelian Acatincăi, Iulian Tripon, Ludovic Toma Czisster, Dinu Gavojdian, Silvia Erina, Simona Baul, George Gabriel Răducan

Study on Resting Behavior in Six Months of Age Calves from Romanian Black and White Breed during Summer Season

279

Abstract

The aim of this paper was to measure the main aspects that characterize the resting behavior of six months old calves during the summer season. During the experiments the following resting behavior aspects were determined: number of resting periods, the length of resting periods. Results showed that in the summer season the total length of laying down periods was 77.2 minutes in the morning, 129.4 minutes in the afternoon and 347.5 minutes during the night. In the summer season calves stood down in 1.8 periods during the morning, 3.8 periods during the afternoon and 3.5 periods during the night. There were significant differences between morning and afternoon ($p < 0.01$), between morning and night ($p < 0.001$) and between afternoon and night ($p < 0.001$) for total time spent lying down by calves. In the summer season the total time spent resting (sleep and rest laying down) was 8.8 minutes in the morning, 39.1 minutes in the afternoon and 120.7 minutes during the night. There were very significant differences between morning and afternoon ($p < 0.001$), between morning and night ($p < 0.001$) and between afternoon and night ($p < 0.001$) for total time spent resting by calves during the summer season.

Keywords: calves, resting behavior, Romanian Black and White breed.

Simona Baul, Ludovic Toma Czisster, S. Acatincăi, Traian Cismaș, Dinu Gavojdian, Iulian Tripon, Silvia Erina, George Gabriel Răducan

Researches Regarding the Influence of Calving Interval on the Number of Somatic Cells during Lactation in Romanian Black and White cows

282

Abstract

The aim of this paper was to study the influence of calving interval on the number of somatic cells from milk in Romanian Black and White cows. The study was conducted on a total of 125 lactations from 92 cows. Data were recorded and statistically analyzed by ANOVA/MANOVA method determining the means and dispersion indices. The results indicated that calving interval influenced significantly ($p < 0.05$) changes in the somatic index between calving interval below 350 days and calving interval between 351 and 450 days (0.33). Milk produced from cows with calving interval below 350 days had the smallest somatic index (5,33) which corresponds to a number of somatic cells around 214000 cells/ml. Cows with calving interval between 351 and 450 days had the highest value of the somatic index 5.67, which corresponds to a concentration of 468000 somatic cells/ml.

Keywords: calving interval, dairy cows, Romanian Black and White breed, somatic cells.

Ludovic Toma Czisster, Evangelia N. Sossidou, Endre Szűcs, Stelian Acatincăi, Silvia Erina, Simona Baul, Iulian Tripon, Dinu Gavojdian

Do Romanian farmers and consumers have different views on farm animal welfare issues?

285

Abstract

The study was carried out on farmers and consumers from the Western Romania, using the questionnaires developed within the framework of WELANIMAL project in year 2009. The aim of this paper was to identify if there are any differences between the two social categories regarding the issues of farm animal welfare. A number of seven common questions were identified in the questionnaires of farmers and consumers, and a comparative study between these categories was conducted. Farmers considered that dairy cows (70.1%), laying hens (46.8%) and pigs (24.7%) need their current welfare level to be improved, while consumers considered that the welfare status of all the farm animal species mentioned in the questionnaire needed to be improved. Both farmers and consumers considered that sometimes or very rarely could find information about the rearing system on the labels of animal products. Farmers believed that EU legislation exists mostly for farm animal transportation (34.8%) and slaughtering (30.5%), while consumers considered that EU legislation exists for slaughtering (34.8%) and rearing conditions (32.8%). Both farmers and consumers considered that in Romania the animal welfare/protection receives not enough importance (61.3% and 77.4%, respectively), while in the EU this is better than in other parts of the world (46.7% and 50%, respectively). It was concluded that farmers and consumers have either similar or divergent views on specific issues

of farm animal welfare.

Keywords: farm animal welfare, farmers, consumers, Romania

Ludovic Toma Csiszter, Atila Bognar, Stelian Acatincăi, Silvia Erina, Iulian Tripon, Dinu Gavojdian, Simona Baul

Study regarding the influence of activity period of cows on milk production indices in the Romanian Black and White breed

292

Abstract

The aim of the study was to assess if there are significant differences of milk production between the Romanian Black and White cow populations activating in different periods of time in Timiș and Caraș-Severin. Studies were carried out on 3764 lactations, of which 1290 lactations from active cows after year 2007 and 2474 lactations from cows that ended their productive life before year 2007. In Timiș County, the milk production per normal lactation of active cows was 4676.4 kg milk, with 183.83 kg butterfat and 150.46 kg protein, being significantly higher than the milk production of previous population by 6-7% ($p < 0.05$). Per total lactation the milk production of active population was 5130.6 kg milk, with 201.87 kg butterfat and 165.70 kg protein, being significantly higher than milk production of the previous population by 4-5% ($p < 0.05$). In Caraș-Severin County, the milk production per normal lactation of active population was 4312.1 kg milk with 170.40 kg butterfat and 145.50 kg protein, while the production per total lactation was 4731.9 kg milk with 188.23 kg butterfat and 159.74 kg protein. These values were not significantly different ($p > 0.05$) compared with the productions of previous population. It was concluded that the rearing conditions in the two counties had an effect on phenotypic expression of milk production.

Keywords: active population, cows, milk production, previous population, Romanian Black and White

Silvia Erina, Ludovic Toma Csiszter, Stelian Acatincăi, Dinu Gavojdian, Iulian Tripon, Simona Baul, George Răducan

The Influence of Daily Periods on the Drinking Behavior in Romanian Black and White Primiparous Cows

296

Abstract

The study was carried out on 9 Romanian Black and White cows in their first one hundred days of lactation. The aim of this study was to determine some aspect of drinking behavior of the cows in 24 hours that were divided into 3 day periods (intervals): 07:00-14:00 (I1), 14:00-21:00 (I2), 21:00-07:00 (I3). During the experiments, the following drinking behavior aspects were determined: the number of drinkings and the length of drinking periods per 24 hours, in the fibrous-succulents administration order of forages (O1) and succulents-fibrous order (O2). Data was computed by ANOVA/MANOVA. Results showed that the daily periods had an influence on the number of drinkings and drinking length, the lowest number of drinkings occurred during the night interval I3 (4.20) and the highest number together with the longest drinking period occurred in the second interval I2 (12.47 and 1062.50 seconds). In both administration order of forages (O1 and O2) there were a very significant differences ($p < 0.001$) between I1 and I2 in favour of I2, between I1 and I3 in favour of I1 and between I2 and I3 in favour of I2, for number of drinkings periods and for length of drinking periods.

Keywords: drinking behavior, primiparous cows, Romanian Black and White Cows

Silvia Erina, Ludovic Toma Csiszter, Stelian Acatincăi, Dinu Gavojdian, Iulian Tripon, Simona Baul, George Răducan, Atila Bognar

Study on the Consumption Speed of Forages and Consumption Indices of Forages in Romanian Black and White Cows

299

Abstract

The aim of the paper was to determine the consumption speed of forages (g/min.) and consumption indices (quantity and consumption duration) of forages, administered in two portions, to Romanian Black and White cows. The administration order of forages (fibrous-succulents (O1) and succulents-fibrous (O2) order), the number of portion (P1 and P2) and number of feeding (F1 and F2) were the experimental variants. Data was computed by ANOVA/MANOVA. Results showed that the administration order of forages had an influence on the speed consumption, when was given before silage (O1), hay had a higher consumption speed (41.35 g/min) decreasing to 31.41 g/min when hay was fed after the silage (O2). For silage the consumption speed was 190.33 g/min in O1 and increased to 228.87 g/min when was given before hay (O2). Between portion 1 (P1) and portion 2 (P2), the

significant difference ($p < 0.001$) was for silage consumption speed in favour portion P2. Regarding the number of feedings per portion, always the consumption speed of the feedstuffs, as well as the amount consumed, was higher in the first feeding F1 than in the second feeding F2.

Keywords: consumption speed of forages, Romanian Black and White Cows

Radu Ionel Neamț, Ludovic-Toma Ciszter, Florin Cristian Neciu, Florin Corneliu Marinescu, Daniela Elena Ilie, Costin Ioan Liviu
Study Regarding Milk Production and Days in Milk in the Fleckvieh-Type Romanian Spotted Breed from S.C.D.C.B. Arad

302

Abstract

The present work was carried out to determine the influence of lactation rank on the milk yield, fat and protein evolution. Observations were carried out on 117 lactations, as follows: 15 first lactations, 22 second lactations, 26 third lactations, 28 fourth and 26 fifth lactations. It was found out that the average milk yield was 7511.66 kg with the maximum in the fifth lactation (7898.19 kg) and the minimum of 7117.06 kg in first lactation. The differences were highly significant until the third lactation. After the fourth lactation the differences between lactations become statistically no significant, as productive maturity is reached. Milk fat percentage reaches the maximum value in the fifth lactation (4%) with a minimum value recorded in the fourth lactation (3.83%). The average milk fat percentage was 3.94%. Significant and very significant differences occurred for the milk fat percentage between the first three lactations and the fourth and fifth lactations. Milk protein percentage has averaged 3.2%. This parameter is less influenced by lactation rank.

Keywords: Brown Swiss, fat percentage, lactation rank, milk yield, protein percentage, sire dam.

Florin Cristian Neciu, Ludovic-Toma Ciszter, Radu Ionel Neamț, Daniela Elena Ilie, Florin Corneliu Marinescu
Study on Milk Production Dynamics and Major Chemical Milk Components in Brown Sire Dams of Brown Swiss-Type from the Research and Development Station for Bovine Raising - Arad

305

Abstract

The present work was carried out to determine the influence of lactation rank on the milk yield, fat and protein evolution. Observations were carried out on 117 lactations, as follows: 15 first lactations, 22 second lactations, 26 third lactations, 28 fourth and 26 fifth lactations. It was found out that the average milk yield was 7511.66 kg with the maximum in the fifth lactation (7898.19 kg) and the minimum of 7117.06 kg in first lactation. The differences were highly significant until the third lactation. After the fourth lactation the differences between lactations become statistically no significant, as productive maturity is reached. Milk fat percentage reaches the maximum value in the fifth lactation (4%) with a minimum value recorded in the fourth lactation (3.83%). The average milk fat percentage was 3.94%. Significant and very significant differences occurred for the milk fat percentage between the first three lactations and the fourth and fifth lactations. Milk protein percentage has averaged 3.2%. This parameter is less influenced by lactation rank.

Keywords: Brown Swiss, fat percentage, lactation rank, milk yield, protein percentage, sire dam.

Šárka Podlahová, Luboš Smutný, Miloslav Šoch
Potential Utilization of Automatic Cows Weighing for Evaluation of Health and Nutritional Condition of Herd

308

Abstract

Weight of cows affects a large number of factors. Regular weighing and data processing can detect differences that may indicate disorders requiring nursing interventions, e.g. nutritional deficiencies, incorrect fetal development and health problems. The current weighing systems operate as stationary - the animal is fixed, identified and weighed. However, the procedure is time consuming and operation, and that is way this system is used minimally. That implies the need of complete automation of all activities associated with the weighing, which enables introduction of pass - through weight. The aim of this thesis was to develop a methodology for evaluating health and nutritional status of the herd based on data from an automated system for weighing a live weight of dairy cows. There was used in the weighing unit for milking robots Astronaut A3 (Lely company) to obtain weight data of individual cows. There were selected dairy cows with the longest period of lactation or already drying off, and especially dairy cows

with various health problems for study. Limiting values of weight changes were established after assembling a general equation of mass curve. In the sphere of the diseases there was manifested only ketosis in the weight curve with a loss of 10.2 kg / day (38% weight loss). Additionally, the completion of growth during the first 2 periods of lactations and weight gain due to advanced pregnancy were confirmed. The maximum daily weight difference recorded in healthy animals was 7 %, equivalent to 40 - 45 kg. The results of the study will be applied for compiling algorithm that will be implemented in the complete management system of cattle breeding, monitoring the dairy cows every day and highlight possible deviations exceeding of physiological changes in weight.

Keywords: cattle breeding, management, nutrition, weighing.

Marcela Raabová, Miloslav Šoch, Martin Šlachta, Jan Brouček, Václav Pálka

Impact of selective prevention treatments on blood parameters in calves

314

Abstract

The impact of alimentary supplement, homeopathicum and probioticum on selected blood parameters was examined in dairy calves. The effect of algae alimentary supplement on nitrogen metabolism was indicated by its decrease of urea in blood ($P < 0.05$). The beneficial effect of homeopathicum on health of calves was indicated by the levels of hemoglobin, leukocytes, glucose and protein in blood ($P < 0.05$). No effect of probioticum on mentioned blood health parameters was identified ($P > 0.05$).

Keywords: diarrhea, probiotics, homeopatics, algae

Miloslav Šoch, Jan Brouček, Michal Uhrinča, Jan Trávníček, Marcela Raabová, Jana Šťastná, Petr Tejml, Vladimír Tančín, Anton Hanus, Pavel Novák, Petr Zajíček

Effects of Different Factors on Dairy Calves Behaviour

316

Abstract

The purpose of this study was to study the effects of age, sex, and father on behaviour of calves. The study included 40 dairy calves kept in group housing. Maintenance behaviours were conducted at the age of 90, 130 and 170 days. The social behaviour was determined during 1 h feeding on access to limited amounts of feed during three consecutive days in 155th day of the age. Maintenance activities were significantly increasing with the age. Calves spent lying on the left side and ruminating while lying on the left side longer time. The most periods of total lying, lying on the left side, and lying on the right side were found at the age of 130 days. Period number was increasing within ages in ruminating while on the left and right sides, ruminating while lying, and total ruminating. Father lineage was significantly manifested in times of total standing, total eating, number eating and lying periods. No significant differences were found between males and females behaviour, and among fathers in social index.

Keywords: age, behaviour, calf, father, sex, welfare.

Iulian Tripon, Stelian Acatincăi, Marian Bura, Ludovic Toma Csiszter, Dinu Gavojdian, Silvia Erina, Simona Baul, George Gabriel Răducan

Researches on Feeding Behavior in Six Months of Age Calves from Romanian Black and White Breed Fed Using Different Feed Space Allowance

320

Abstract

The aim of this paper was to measure the main aspects that characterize the feeding behavior in six months old calves fed using three different feed spaces allowance. During the experiments the following feeding behavior aspects were determined: number of feeding periods, the length of feeding periods and the total length of feeding periods. Results showed that calves spent feeding, on average, 292 minutes in the morning, 198 minutes in the afternoon and only 71 minutes during the night when the length of feeding space was 0.6 m per calf. Calves spent feeding 175 minutes during the morning, 193 minutes during the afternoon and 53 minutes during the night when the length of the feeding space was 0.32 m per calf. Calves spent feeding 255 minutes during the morning, 227 minutes during the afternoon and 30 minutes during the night when the length of the feeding space was 0.28 m per calf. The total time spent feeding by calves was 560 minutes when the length of feeding space was 0.6 m per calf, 421 minutes when the length of feeding space was 0.32 per calf and 512 minutes when the length of the feeding space was 0.28 per calf. There were significant differences ($p < 0.05$) for total time spent feeding by calves between the first experimental variant (0.6 m feeding space per calf) and the second variant (0.32 m feeding space per calf) and between the second experimental variant and the third variant (0.28 m feeding space per calf).

Keywords: calves, feeding behavior, Romanian Black and White breed.

Iulian Tripon, Stelian Acatincăi, Marian Bura, Ludovic Toma Ciszter, Dinu Gavojdian, Silvia Erina, Iosif Atila Bognar, George Gabriel Răducan

Researches on Rumination Behavior in Six Months of Age Calves from Romanian Black and White Breed Fed Using Different Feed Space Allowance

325

Abstract

The aim of this paper was to measure the main aspects that characterize the rumination behavior in six months old calves fed using three different feed spaces allowance. During the experiments the following rumination behavior aspects were determined: number of rumination periods, the length of rumination periods and the total length of rumination periods. Results showed that calves spent ruminating, on average, only 96.4 minutes in the morning, 176 minutes in the afternoon and 262.6 minutes during the night when the length of feeding space was 0.6 m per calf. Calves spent ruminating 124.2 minutes during the morning, 173.6 minutes during the afternoon and 243.4 minutes during the night when the length of the feeding space was 0.32 m per calf. Calves spent ruminating 106.2 minutes during the morning, 134.2 minutes during the afternoon and 286.4 minutes during the night when the length of the feeding space was 0.28 m per calf. The total time spent ruminating by calves was 535 minutes when the length of feeding space was 0.6 m per calf, 541 minutes when the length of feeding space was 0.32 per calf and 527 minutes when the length of the feeding space was 0.28 per calf. There were no significant differences ($p>0.05$) for total time spent ruminating by calves between the three experimental variants.

Keywords: calves, rumination behavior, Romanian Black and White breed.

HORSE PRODUCTION

Flavia Luminița Bochiș

Studies in the Relationship between some Morphological Characters and Jumping Parameters in Sport Horses (Part II - Oxer Fence)

330

Abstract

The multilinear regression model introduced the variables control and estimated the contribution of every independent variable in the explication of the dependent variable variance, in a standard situation, when all independent had constant values. The taken into study independent variables were 19 morphological characters. The dependent value was represented by the entire length of the jump over an oxer fence and the bar-limbs distance in the same obstacle. The obtained value, for the multiple determination coefficients, nearby 1.00, in most of the cases in the high performance levels (B and C) showed the efficiency of the model and a good selection for the included factors. The obtained result focusing on the ensemble reports, in fact a result which can lead us to think that this kind of modeling can be applied freely to the horse height.

Keywords: morphological characters, oxer obstacle, sport horses.

Ioan Tapalaga, Dorel Dronca

Study of Morphological Indices of English Thoroughbred (E.T.H.) Adult Equine Material Bred to Izvin Stud, Timis County

338

Abstract

This research was conducted in order to establish very clearly the morphological indices of the E.T.H. race bred to Izvin Stud, and also to highlight its strengths, weaknesses and sports skills. Based on these assessments and morphological indices calculation we can give guidance on the improvement direction of this population of horses, usage of breeders and correct some deficiencies. The study was carried out on a number of 83 individuals of ETH race (7 satllions and and 76 mares) belonging to Izvin Stud, Timis county and considered parameters were: height at withers, height at croup, height at the base of tail, diagonal length of the trunk, chest depth, chest width, torax width, croup width at hips, forearm length, flute length, thoracic perimeter, whistle perimeter, body weight. Obtained morphological index values show the superiority of breeding adults with 1.74% for the character height at withers and with 3.41% for the character body mass compared with data obtained from other locations in the country.

Instead, the character chest depth recorded lower values with 0.75% and the character chest perimeter with 2.11% in the same conditions.

Keywords: adult equines, English Thoroughbred race, morphological indices

PIG PRODUCTION

Viorel Andronie, Violeta Simion, Ioana Andronie

The Growth Environment and Behavioural Response of Fattening Pigs

341

Abstract

The aim of this study was to trace the effects of growth environment on the behaviour of fattening pigs in the farm and outside it. Behavioural manifestations of pigs reared in pens with enriched environment (A lot, n: 22) were different from those of pigs reared in pens with arid environment (B lot, n: 17) in shelter and when the movement to be loaded. Pigs of B lot spent more time on the move (31%) compared to group A pigs (13%), and manifested more aggressive behaviour when they were loaded. Salivary cortisol levels also showed high values for pigs in B lot after being removed from their growth environment, as compared to its concentration for A lot pigs. The enriched environment for pigs may determine different responses of behaviour. Pigs raised in arid environment, were easier to load than pigs reared in enriched environment, but they responded to mixing and loading stress, through increases in cortisol concentrations and impaired behavioural manifestations.

Keywords: behaviour, environment shelter, pig

Monica Pârnu, Alexandru T. Bogdan, Radu Burlacu, Ioana Cristina Andronie, Carmen Berghes

Mathematical Estimate of Growth Process In Mangalitsa Piglets

345

Abstract

The purpose of researches was to develop a mathematical model to simulate the growth process in piglets. The experiment was conducted on 53 Mangalitsa piglets, with initial weight (Wi) of 0.95 kg. The final weight was 30.7 kg. The piglets have been fed *ad libitum* with standard diets. Body weight, compound feed intake and feed conversion ratio were monitored throughout the experimental period. Housing environmental parameters were according to the growth technology. The feed samples were analyzed according the Weende scheme. The crude protein was determined by Tecator – Kjeltec Auto Analyze, the ether extract by Soxtec System HT and the brute cellulose by gravimetric method. The Gompertz-type functions were used for the mathematical modelling of the growth process. Gompertz function is a type of mathematical model for a time series, with sigmoid appearance. The weight evolution was evaluated from the initial weight (Wi). Based on data on the evolution of body weight was made a mathematical model that allows estimation of growth in standard conditions of maintenance.

Keywords: growth, Mangalitsa, piglet

Ilie Rotaru, Serghei Secieru

Reproductive Capacity and Hematological Indices of Blood Concerning the Genotype Pigs

347

Abstract

In this paper different genotypes were studied at the reproductive capacity and hematological indices of pigs. It was found that sow productivity and energy hybrid growth were influenced by terminal boar breed. Swine lots resulted from crossing Yorkshire and Hampshire breeds, Landrace x Pietrain and Pietrain showed an intense growth in the lactation period. Hematological and biochemical indices were included in existing norms and important differences depending on genotype were not registered.

Keywords: breeding, blood, calcium, erythrocyte, genotype, glucose, growth

POULTRY PRODUCTION

Eugenie Grigoroiu, Genoveva Buzamăt Grigore Grigoroiu, Eugeniu Grigoroiu

Study Regarding the Correlation between Body Mass and spur Length in Hunting Pheasant (males),
in October

351

Abstract

This work presents a study on the correlation between body mass and spur length in October 2009. October is the month when the pheasant hunting begins. The structure per ages of pheasant cocks is not well known, but we may

consider that over 80% are pheasants eclosed during the current year, from the first, second or the third mating, so that the body mass and spur length were different according to age.

Keywords: Keywords: body mass, correlation, pheasant cocks, spur length

Eugenie Grigoroiu, Genoveva Buzamăt Grigore Grigoroiu, Eugeniu Grigoroiu
Study Regarding the Correlation between Body Mass and spur Length in Hunting Pheasant (males),
in November

353

Abstract

This work presents a study on the correlation between body mass and spur length in November 2009. November is the month when the pheasant hunting begins. The structure per ages of pheasant cocks is not well known, but we may consider that over 80% are pheasants eclosed during the current year, from the first, second or the third mating, so that the body mass and spur length were different according to age.

Keywords: body mass, correlation, pheasant cocks, spur length

Dana Jirotková, Miloslav Šoch, Nad'a Kernerová, Václav Pálka, Jana Šťastná
Electrolyzed Water and its Influence on Quality of Poultry Meat

355

Abstract

The aim of the research was to find out whether electrolyzed water used for densification of breeding halls and watering of chickens' influences selected indicators of the meat quality. The production system of electrolyzed water has been patented in the Czech Republic. The experiments were done in two breeding halls of chickens of the same breed; potable water without any additives was used for watering in one house, the other house was supplied with the Envirolyte water, i.e. technology whose principle is patent protected. After the chickens were slaughtered, samples of the chickens of the individual halls were taken and analysed. As regards the indicators observed, the most significant difference was determined for water loss through dripping, which might suggest an eventual development of PSE meat. However, the colour of the meat and its pH values did not confirm this

Keywords: poultry meat, electrolyzed water, water dripping.

Ján Orság, Miloslav Šoch, Jan Brouček, Jan Trávníček, Vladimír Tančín, Petr Tejml,
Marcela Raabová, Jana Šťastná, Pavel Flak, Pavel Novák, Petr Zajíček
Improving Welfare of Layers by Ash Bath Possibility

358

Abstract

The purpose of this work was to study effect of access restriction to dusting substrate on hens behaviour. Forty laying hens from furnished cages (FC) and nonfurnished cages (NC) at the age of 28 weeks were used. The observations were performed in an experimental aviary equipped with dust bath of ash. The water obstructed the access to the ash bath. The first level of difficulty was without water; the others included water for an increased difficulty. Times of eating were higher in FC group. Locomotion and standing were longer in NC group during all difficulties. The length of vacuum dustbathing was shorter in FC group than NC group (1.2 min vs. 4.2 min) per one hour of observation. The average length of normal dustbathing represented 6.6 min (FC) or 5.4 min per hour (NC). Results suggested that dustbathing is under the control of external factors, especially of former housing. Deprivation of the normal dustbathing was not a sufficient cause for suffering in hens.

Keywords: behaviour, dustbathing, hen, welfare.

Elena Scripnic, Suzana Modvala
Hatchability Performances of Hens Eggs Under the Influence of Magnetic Field

362

Abstract

Different methods of egg's incubation improving are used in hatching technology nowadays. To find out what is the most efficient method of eggs improving, it is necessary to held experiments in this branch. The eggs (n = 150) were exposed to magnetic field generated by apparatus UEM-3. For the experiments there were used four systems of electromagnetic field: permanent, split, impulsive 8 Hz, impulsive 16Hz, for a period of 5 and 10 minutes for each system. The highest percentage of first quality chickens was received in experimental group 8 (93.40%), where eggs

were exposed to the action of magnetic field in system impulsive 16Hz, for a period of 10 minutes. The highest number of chickens had been received in experimental group 3 and it was 129.0 chickens, the eggs were exposed to the action of magnetic field in system split for a period of 5 minutes, while in control group the number of chickens was – 127.0. The lowest value of embryonic death had been found in experimental group 8 (3.2%), where eggs were exposed to magnetic field in system impulsive 16Hz, for a period of 10 minutes, in the control group this index had a value of 7.78%, as well in the experimental group 5 it reached 8.3%, where eggs were exposed to the magnetic field in system impulsive 8Hz for a period of 5 min. The highest values of hatching indices calculated in relation with fertilized eggs were found in experimental groups 8 – 96.8%, and 2 – 95.6%. The negative effect of magnetic field was found in group 5 where the eggs were exposed in system impulsive 8Hz for a period of 5 minutes. The indices in this group had lower values.

Keywords: chickens, embryonic mortality, hatchability, hens eggs, magnetic field.

SHEEP AND GOAT PRODUCTION

Ioana Andronie, Adina Ciurea, Viorel Andronie, Dumitru Curcă

Effects of Transport on Live Weight and Behavior of Lambs

367

Abstract

The study has monitored the effects of transport stress on some biochemical indicators of stress and behavior lambs at time of slaughter. The research was carried out in the cold season, on a number of 120 lambs, transported for 6h-16h, to be slaughtered. During our research, we followed the changes in bodyweight, behaviours expressed by sheep, and plasma cortisol levels. Bodyweight loss recorded in the slaughterhouse to 24 hours of departure transportation was of 4-5%. The behavioural manifestations of lambs were different from the destination, depending on journey duration. Lambs behaviour was different depending on the journey, the resting and watering were mostly present manifestations. Increased in cortisol levels measured at 3 h after leaving the vehicle was maintained at 9 h after the journey. Increased duration of rest before slaughter can reduce the stress of transport in case of lambs ensures obtaining good quality meat.

Keywords: behaviour, lambs, live weight, transport.

Stelian Vasile Dărăban, Bogdan Georgescu, Ioan Pădeanu, Sorin Voia, Constantin Pascal, Călin Ioan
Morpho-Productive Characterization of Some Tzurcana Breed Populations, White Variety, Bred in Some Zones of Transylvania

370

Abstract

The Tzurcana breed, a rustic breed with mixed morpho-productive character, named for good “the queen of mountains”, constitutes the main ovine breed exploited in Romania, being almost 90% from the total ovine livestock bred and exploited in our country. It presents great biodiversity both as color varieties and also as ecotype, the most spread one being white variety and for that reason in this article we propose to present a study on white variety bred in farms from Bistrița-Năsăud, Cluj, Satu Mare and Sălaj Counties. In the morpho-productive characterization we followed aspects concerning the body development and some body sizes, the wool production, the lambs’ number and milk production. In abstract, we refer to the body weight and we can say that comparing with the breed standard, in which in females it is between 35.00 and 45.00 kg, in our analyzed livestock this parameter varied between 57.12 and 66.00 kg, and in males was surpassed the standard with over 25 kg. This fact shows a tenacious work for breed massiveness increasing and other analyzed features improvement comparatively to the breed standard.

Key words: body weight, milk production, sheep, Tzurcana breed

Dinu Gavojdian, Nicolae Pacala, Maria Sauer, Ioan Padeanu, Iulian Tripon, Ioan Walter Sauer
Growth Performance Evaluation in F Hampshire Down x Turcana Lambs Reared in Low Input Systems

375

Abstract

Aim of the study was to evaluate growth performance of F₁ Hampshire Down x Turcana (HDT) lambs compared to purebred Turcana (TU) lambs, reared in Low Input systems. Experiments were carried out in a commercial farm from Timis county, on a number of 37 crossbreed F₁ HDT lambs, the control group was of 33 purebred Turcana

lambs, raised in the same conditions. Birth weight of both HDT and TU lambs, weight at 28 days and weight at 8 months, in both male and female lambs was registered. Lambs were raised with their dams on pastures, with no concentrates, until the age of 3 months. After weaning, lambs were separated according to their sex, into two flocks. Commercialization had place at the age of 8 months for male lambs and, ewe lambs were kept for breeding purposes. Body weight of HDT group was on average of 39.31 kg in HDT and of 37.00 kg in TU group ($p < 0.01$).

Keywords: Growth performance, Hampshire Down, Low Input system, Turcana breed.

Dinu Gavojdian, Maria Sauer, Nicolae Pacala, Ioan Padeanu, Sorin Voia

Improving Growth Rates in Turcana Indigenous Sheep Breed Using German Blackheaded Mutton Rams

379

Abstract

Improving growth rates in indigenous Turcana breed should be one of the most important objectives for sheep specialists, do to the fact that over 70% of the sheep population from Romania is represented by the breed. Researches were carried out in a commercial farm from Timis county, on a number of 48 crossbred F₁ German Blackheaded Mutton x Turcana (GBMT) lambs, the control group was represented by purebred Turcana (TU) lambs, both males and females (33 heads). The lambs were weighed at birth, at 28 days and at 8 months of age. During first 28 days, F₁ GBMT registered an average daily gain of 229.46 g, compared to Turcana lambs witch registered an average of 194.12 g, differences being very significant statistically ($p < 0.001$). Total growth gain at the age of 240 days was registered 40.51 kg in crossbreed lambs, and of 33.35 kg in purebred Turcana lambs, differences were very significant statistically between the two groups ($p < 0.001$). German Blackheaded Mutton rams could be used as crossing sires for indigenous Turcana breed in order to substantially improve growth rates in F₁ lambs.

Keywords: German Blackheaded Mutton, Improving growth rates, Turcana ewes.

Ramona Iancu, Mihaela Tița, Carmen Cirican, Luana Pietraru

The Optimization of Milk Protein Using Different Breeding Systems

383

Abstract

The purpose of this study is to increase the intensive production systems in dairy goat flocks necessity specifications on feeding strategies and housing structures to optimize milk production and animal welfare and to control the impact of animal husbandry on the environment. Milk serves as the most excellent sources of protein with rich quality protein content. It doesn't contain a large quantity of proteins, but those are containing all the essential amino acids that the body requires. The nutritional and processing properties and there by the market value of milk, largely depends on its protein content.

Keywords: goat, milk, nutritional factors, protein.

Ioan Pădeanu, Sorin Voia, Dinu Găvojdian, Iulian Frățilă, Călin Mircu, Ioan Bratu, Constantin Pascal,

Ioan Sauer

Effect of Using Melatonin Implants on Reproductive Performances in Turcana Ewes

387

Abstract

It is estimated by some authors that the administration of subcutaneous melatonin implants during a period of 30 days, in lactating or dry ewes, would improve the reproductive performance in some sheep breeds. This study was conducted in Giarmata Mare, Timis County, on 78 lactating ewes and 75 dry ewes, which were individually inserted with implants containing 18 mg melatonin on 31 August 2009. Control group consisted of 100 lactating and dry ewes in equal proportions. The results shown that the main reproduction indices as prolificacy, birth rate and the lamb number productivity index are significantly ($p < 0.05$) higher in ewes from the experimental group, compared with ewes from the control group, and that treated ewes shortened the period of mating and lambing to half-time comparing to the control group. There is a suggestion that the use of melatonin implants Melovin® type near the normal breeding season increases the reproductive performance of ewes from Turcana breed.

Keywords: sheep, melatonin, reproductive performances.

Maria Sauer, Walter Ioan Sauer, Raducu Radu, Dinu Gavojdian, Ioan Padeanu, Sorin Voia, Doru Ratiu Study on the Effects of Crossbreeding the Turcana Ewes with Lacaune Rams and Performance of F ₁ Lacaune x Turcana throughout First Lactation	390
---	-----

Abstract

This paper aimed to compare the milk yield of pure breed Turcana ewes and crossbreed F₁ Lacaune x Turcana ewes during their first lactation. Growth performance of F₁ Lacaune x Turcana crossbreed lambs and of purebred Turcana lambs was registered, in both male and female lambs. Results shown the fact that, in 3 months of age male lambs, were registered an average body weight of 22.47 kg in pure Turcana breed, and of 23.46 kg in F₁ crossbreed lambs. In female lambs, during their first 90 days, the average body weight was of 20.66 kg in purebred Turcana and of 21.41 kg in F₁ Lacaune x Turcana crossbreeds. During first lactation, milk yield of F₁ Lacaune x Turcana ewes was on average of 152.74 liters, compared with first lactating Turcana ewes, which produced an average of 116.80 liters. Differences registered between the two populations was of 35.94 liters (p<0.001). Both growth rate and milk yield are improved in indigenous Turcana sheep breed through utilization of Lacaune rams.

Keywords: Lacaune rams, sheep milk, Turcana breed

Walter Ioan Sauer, Maria Sauer, Gabriel Vicovan, Dinu Gavojdian, Ioan Padeanu, Zoia Zamfir Comparison of Slaughter Yield and Carcass Quality Indices in R German Blackheaded Mutton x Turcana and Purebred Turcana	394
--	-----

Abstract

Aim of the research was to evaluate the effects that backcrossing of the German Blackheaded Mutton (GBM) breed with indigenous Turcana (TUR) breed have on the growth rates, slaughter yields and carcass quality, compared with animals from purebred Turcana. Researches were carried out in the Sheep and Goats Research and Development Station from Caransebes, during a period of 3 years. The flock of pure breed Turcana ewes, managed by the Research Station was crossed with rams imported from Germany. F₁ German Blackheaded Mutton ewes were backcrossed with rams from the German specialized breed, the R₁ crossbreed that had 75% genes from the German Blackheaded Mutton was examined starting lambing until slaughter. Results shown that average daily gain of R₁ GBM x TUR was 221.50 grams, compared to 177.60 grams in Turcana lambs. Slaughter yield was 48.85% in R₁ GBM and 42.17% in Turcana, differences registered of 6.68% were very significant statistically (p<0.001). Meat percentage from total dead-weight was on average of 78.33% in R₁ GBM, compared with 74.38% in pure breed Turcana (p<0.001). Results suggest that R₁ German Blackheaded Mutton could be used as a terminal sire in order to improve slaughter yield and carcass quality.

Keywords: Carcass quality, German Blackheaded Mutton, Slaughter yield, Turcana

PROCESSING OF ANIMAL PRODUCTION

Mária Angelovičová, Daniela Liptaiová, Kamil Močár, Dávid Štofán Sheep's Milk, Production and Welfare in Rearing of Sheep	397
---	-----

Abstract

The milk of Reformed Wallachian sheep obtained by manual and machine milking of ewes contained in the 70th day of lactation 16.87 g per 100 g⁻¹ of dry matter, 6.36 g per 100 g⁻¹ of fat and 5.25 g per 100 g⁻¹ of proteins. On the 130th day of lactation was statistically significant (P<0.05) the increase of the contents of dry matter to 17.85 g per 100 g⁻¹, the fat to 6.83 g per 100 g⁻¹ and the proteins to 11 g per 100 g⁻¹. On the 190th day of lactation was statistically significant (P<0.05) the increase of dry matter content to 19.69 g per 100 g⁻¹, the fat to 7.90 g per 100 g⁻¹ and the proteins to 6.76 g per 100 g⁻¹. Milk production in the year 2008 was 64.83 l and in the year 2009 62.7 l. On the farm was kept in the year 2008 the average of 712 ewes with the number of 724 lambs, 23 rams and 202 sheep over the age of 1 year. In the year 2009 there were about 721 ewes with 730 lambs, 25 rams and 210 sheep over the age of 1 year. The sheep were kept during the winter in a stall (deep litter). The sheep had unrestricted access to the grain feed and water.

Keywords: dry matter, fat, lactation, proteins, sheep's milk.

Tatiana Dabija, Angela Macari

Evaluation of Qualitative Indices of Meat Production in Rabbits

403

Abstract

Meat, in most cases, is a basic production in rabbits. The influence on meat quality and quantity have such factors as breed, age, slaughter gain, sex, etc. By age, adult rabbits have a higher body weight compared with the young, but their meat is more expensive. The most convenient is intensive growth of youth as the age of 3 months to be 2.3 to 2.5 kg body weight, food and labor costs during this period was minimal. It is considered optimal as young rabbits are slaughtered when they reach 50-60% by weight of adult animals. The biological material which was used was represented in two groups of Chinchilla rabbit and Flanders breed, each one consisting of seven rabbits of various sex. Groups of rabbits had the same conditions of maintenance and nutrition. Carcass weight was determined at slaughter, carcass meat, bones, by-products, blood, head, skin of young rabbit. The largest share of the carcass of live weight was obtained at age 4 months - 59%, and meat in the carcass weight at 2 months of life - 71.2% at Chinchilla breed. On average 31.9% had bones, by-products - 6.23%, blood - 3.78% head - 8.21% and skin of young rabbit - 11.9%. Average of carcass weight from live weight was 52.76%, in Flanders breed the highest recorded at age 4 months and 66.78% of the carcass meat, the highest being at 2 months old. The average weight of bones was 33.21%, by-products - 6.25%, blood - 3.53%, the head - 7.86%, and the skin of young rabbit - 11.89%. Slaughter gain ranged from 47% to 59% at Chinchilla breed, and from 47% to 60% in Flanders breed. The highest index was recorded in both breeds at the age of four months.

Keywords: meat carcass weight, rabbits, slaughter yield, weight carcass weight

Gratia Ioana Dezmirean, Liviu Al. Mărghitaș, Daniel S. Dezmirean

Honey Like Component of Functional Food

406

Abstract

Honey has been used since ancient times as part of traditional medicine. Several aspects of this use indicate that it also has functions such as antibacterial, antioxidant, antitumor, anti-inflammatory, antibrowning, and antiviral based on the components. Biological activities of honey, and other bee products (propolis, bee bread and royal jelly are mainly attributed to the phenolic compounds such as flavonoids. Flavonoids have been reported to exhibit a wide range of biological activities, including antibacterial, antiviral, anti-inflammatory, antiallergic, and vasodilators actions. In addition, flavonoids inhibit lipid peroxidation, platelet aggregation, capillary permeability and fragility, and the activity of enzyme systems including cyclo-oxygenase and lipoxigenase. The present study demonstrates that honey phenolic compounds are partially responsible for honey antioxidant activity, displaying the relevance of honey as both healthy foodstuff and source of antioxidant. Functional foods are an emerging field in food science due to their increasing popularity with health-conscious consumers.

Keywords: functional food, honey, health, propolis

Marioara Nicoleta Filimon, Aurica Breica Borozan, Despina Maria Bordean, Roxana Popescu, Smaranda Rodica Gotia, Doina Verdes, Florica Morariu, Sebastian Treitli

Quality Assessment of Raw and Pasteurized Milk Using Microbiological Parameters

412

Abstract

The milk intended for human consumption must meet the terms of safety and human security. The purpose of this paper was to evaluate the raw milk quality from the food markets of Timisoara, in relation with pasteurized milk. The microbiological studies included the following assays: total number of germs (TNG) and coliform bacteria. From milk samples were made dilutions which later were distributed on the surface of the solid medium poured in Petri dishes. The incubation was carried out at 37° C for 48 h, after which it was determined the number of colony forming units. The obtained values for each sample were compared with the values in existing legislation noticing that the total number of germs is within normal values but towards the upper limit of normality, except the milk samples from Sacos village where UFC/ml exceed the maximum value admitted (300.000 UFC/ml milk). In coliform bacteria case is observed that in all analyzed milk samples the values obtained exceed the maximum values admitted (0.1 UFC/ml) indicating the existence of inappropriate sanitary and hygienic conditions of milking, transporting and

marketing.

Keywords: milk, sanitary microbiological indicator

Ramona Iancu, Elena David, Ștefan Oancea, Roxana Tufeanu
The Influence of Extensive System on Goat Milk

417

Abstract

The extensive system influences the hygienic quality of milk and it is mainly represented by the absence of mastitis. The basic parameter to detect this illness is the somatic cell count SCC, which are defensive cells located in the goat's udder. In order to assess the goat milk, this study was made upon the somatic cells from the selected goats and their relation with the milk production and the extensive system farms from which the samples were taken. The results were in conformity with the European standards. Regarding the factors of influence, the amount of milk production in combination with the system type of farm must be taken into consideration.

Keywords: extensive systeme, goat milk, Somatic Cell Count (SCC)

Miroslav Kročko, Michal Gábor, Monika Lavová, Martina Miluchová, Margita Čanigová, Jana Bezeková, Viera Ducková, Anna Trakovická
Optimization of PCR-RFLP Method to Confirm the Identification of *Enterococcus faecalis* and *Enterococcus faecium* Isolated from Food Samples

421

Abstract

Commercial kits for species identification of *Enterococcus faecalis* and *Enterococcus faecium* are in some cases (environmental isolates) incorrect to distinguish this species of enterococci. Also the positive results of multiplex PCR are subjected by amount and purity of genomic DNA. This study aimed to optimize the identification of *Enterococcus faecalis* and *Enterococcus faecium* isolated from food samples and from the culture collection by PCR-RFLP. The strains identified by conventional biochemical EN-COCCUS test (reactions to arginine, sorbose, arabinose, manitol, sorbitol, melibiose, raffinose, melezitose) were submitted to multiplex PCR. The PCR amplification of 16S rRNA with universal primers generated a 433 bp product. Restriction fragment length polymorphism (RFLP) was analysed by restriction endonuclease *Hin*I. The sizes of restriction fragments for *Enterococcus faecalis* were 285bp, 85bp and 63 bp and for *Enterococcus faecium* were 370 bp and 63bp.

Keywords: PCR-RFLP, 16S rRNA, multiplex PCR, *Enterococcus faecalis*, *Enterococcus faecium*.

Miroslav Kročko, Margita Čanigová, Viera Ducková, Anna Krebs-Artimová, Jana Račková
Presence of Antibiotic Resistant Enterococci in Rinses of Milking Equipment after Sanitation Process

428

Abstract

Enterococci are common milk contaminants, and microbial contamination of milk by this group of microorganisms can occur from a variety of sources. Significance of enterococci can be assessed by many separated points of view, otherwise a lot of research has focused on the potential role of food enterococci as reservoirs and/or vehicles of antibiotic resistance. The aim of this investigation was to evaluate the occurrence of enterococci in rinses of milking equipment (n = 38) on two farms using automatic sanitation system. Our results showed, that alkaline disinfectant (on chlorine basis) was effective towards enterococci because apart from 2 samples, their presence in rinses has not been determined. Average number of enterococci survived the application of acid disinfectant reached the value $5.00 \cdot 10^1$ CFU.ml⁻¹. Together, 60 strains were randomly isolated and identified from the grown colonies of genus *Enterococcus*, and *E. faecalis* was the predominant species (69.6 %). In rinses, also *E. faecium*, *E. mundtii* and undefined enterococci were found. Among antibiotic resistant isolates, 83.9 % of isolates were sensitive to erythromycin (15mcg/disk) and resistant to vancomycin (30 mcg/disk) were 20 % of isolates.

Keywords: antibiotic resistance, enterococci, milking equipment, rinses

Adela Marcu, Ioan Vacaru-Oprîș, Adrian Marcu, Maria Nicula, Gabi Dumitrescu, Dorel Dronca, Călin Julean, Bartolomeu Kelciov
The Influence of Feed Protein-Energy Level on the Growth and Slaughter Performance for „Arbor Acres” Hybrid

433

Abstract

In this paper was studied the influence of feed energy-protein level on the growth performance (average daily gain,

feed conversion), slaughtering efficiency and participation of the trenched parts in the whole carcasses structure at „ARBOR ACRES” hybrid slaughtered at 42 days old. The two groups (control group-Lc, experimental group Lexp.) were given feed mixed with different level of energy and protein (Lc-standard hybrid, Lexp.-higher by 10% compared to standard hybrid). In the growth period for each group were made weighings at: 1, 7, 14, 21, 35 and 42 days. After slaughter, from each group were sampled 30 carcasses (15 females and 15 males) for determined the slaughter efficacy on fresh and refrigerated carcasses. At the end of the growing period, at Lexp. group average body weight was 2481.93g, with 3.88% more than average values recorded at control group. For average daily gain, Lexp. group had higher values compared with the control group, the situation is reversed when has been referring to the feed conversion rate. The fresh carcasses at slaughtering efficiency had values for males from 80.27% (Lexp.) to 79.36% (Lc) and for females from 78.57% (Lexp.) to 78.18% (Lc). After 24 hours of refrigeration, these values were reduced by 1.78 up to 1.88%. For participation of the trenched parts in the whole carcass structure (breast, wings, thighs and shanks), at Lexp. group were registered the highest values, and for the control group the lowest values for these parts and the highest values for the other parts (head, neck, back and legs), with differences between females and males. For Lexp. group, which received feed with high protein-energy level, average values for feed conversion rate (FCR) were lower and for other studied indicators were higher as compared with control group.

Key words: average daily gain, feed conversion ratio, hybrid, slaughtering efficacy

Adela Marcu, Ioan Vacaru-Opriş, Adrian Marcu, Maria Nicula, Gabi Dumitrescu, Ileana Nichita, Dorel Dronca, Bartolomeu Kelciov

The Influence of the Feed Protein and Energy Level on the Meat Chemical Composition at „Lohmann Meat” Hybrid

439

Abstract

In this paper was studied the influence of feed energy-protein level on meat chemical composition depending on sex and anatomical region for chicken broiler belonging „LOHMANN MEAT” hybrid, slaughtered at 42 days old. The two groups (control group-Lc and experimental groups-Lexp.) were given feed mixed with different level of energy and protein (Lc-standard hybrid, Lexp.-higher by 10% compared to standard hybrid). After slaughter, from each group were sampled 10 carcasses (five females and five males), and from different portions of the carcass (breast, thighs and shanks), was determined the meat chemical composition (water, dry matter, protein, lipids and minerals) using STAS methods. For males the pectoral muscle had a greater amount of dry matter, compared with females, the situation is reversed when has been referring to the muscles of the thighs and shanks. The proteins content in meat has presented variation depending on: sex (in males was registred big values comparative with females), anatomical region (in pectorals was registred maximum values and in thighs minimum values) and nutrition (feed with energy and protein high level was determined incresed content the protein in meat). The lipids content in meat showed the biggest variation between muscles analyzed, with minimum values in the pectoral muscles (from 0.67 at males-Lexp. to 0,95% in females-Lc) and maximum values in the upper thigh muscles (from 6.97% in males-Lexp. to 8,23% in females-Lc). The high quality value on meat has been at the Lexp. group, which in all cases had the highest protein content and lowest lipids content in muscles.

Key words: chemical composition, dry matter, lipids, minerals, proteins

Elena Raluca Pavel, Constantin Gavan

Seasonal Changes in Bulk Tank Milk Composition of Dairy Cows

444

Abstract

A study was conducted to determine the effect of season on milk fat, protein, solids nonfat, freezing point and bulk tank somatic cell count of diary farm in Dolj district. Collection of data was from April to September 2010. Statistical technicques were used to determine when a real change occurred. Results showed that were clear variations in milk composition and somatic cell count in the trial period.

Key words: milk composition, somatic cell count

Roger Stan, Ramona Iancu, Alina Toader, Luiza Monafu, Mădălina Bobeică The Production of Goat Milk under Organic Requests	450
---	-----

Abstract

Organic farming has turned into a very important subject who consists in a food production label and it has become very popular. That is because, especially in the EU the majority of the dairy goat farms want or have already applied the organic farming in order to benefit not only from the good price of milk but also from the given positive image. The main issue of this study is the high production of goat milk using organic farming under specific regulations. Therefore, the organic farming is based on a safe environment, 100% organic feedstuffs, healthy animals (by prevention of diseases), natural mating, reduced stress in animal rearing, modern stables and milking equipment. A few feeding rations were established to improve the quantity and quality of goat milk.

Keywords: Organic farm, classic farm, conversion, milk goat

Cornelia Vintila, Adela Marcu Milk Urea Disappears During Milk Processing into Cheese	455
---	-----

Abstract

The purpose of this experiment was to evaluate first to what extent a well-known dose of urea added deliberately to milk can be found in the same concentration in cheese or milk whey and second how it determines the development of milk processing. Urea was added to milk in increasing amounts from 0,5 mg to 28 mg / 100 ml milk. Obtained data revealed the fact that added urea in milk can be found after coagulation as well in cheese and also in milk whey. During maturation period, urea concentration from cheese is stepwise reduced and is proportional with initial concentration. Cheese with lower content than 3 mg urea, loses this substance in the first 14 days of maturation and keeping. From our experiment we can see that presence of milk urea reduces to half the time of coagulation compared to the milk without urea.

Key words: Coagulation, cheese, milk urea

Cornelia Vintila, Adela Marcu, Teodor Vintila Milk Urea Dynamics during its Transformation into Yogurt	458
--	-----

Abstract

The purpose of our work was to evaluate in what measure milk urea concentration stays in processed yogurt and in what measure urea dose influences its quality. We added known amounts of urea into milk destined to yogurt processing in order to obtain probes with concentrations from 0,5 to 28 mg/ 100 ml milk. Obtained results lead us to the conclusion that milk urea decreases dramatically until the finishing of the process of milk coagulation and its transformation into yogurt. All probes which contained higher amounts of urea than 6 mg/ 100 ml milk, urea totally disappeared from yogurt before 48 hours of keeping. Milk coagulation time and its transformation to yogurt is reduced proportional with urea concentration in milk.

Keywords: milk coagulation, urea in yogurt, milk urea

MANAGEMENT AND MARKETING

Marek Angelovič The Effect of the Common Agricultural Policy Reform by 2013 on Direct Payments in Relation to Animal Welfare in the European Union: Review	461
--	-----

Abstract

The primary role of agriculture is to provide food and the European Union should be able to contribute to rising world food demand. The Common Agriculture Policy covers the wide variety of measures used to support and protect the European Union farmers. The most important measure within the Common Agriculture Policy is direct payments paid directly to farmers to protect their income. The Common Agriculture Policy is due to be reformed by 2013. The main object of the Common Agriculture Policy, which is a provision of safe, healthy choice of food at transparent and affordable prices, will remain unchanged, but further changes of the Common Agriculture Policy are necessary to respond to the new challenges such as animal welfare, global food security, natural resources such as water, air, biodiversity and soil, climate changes, increasing globalization and rising price volatility.

Keywords: animal welfare, Common Agriculture Policy reforms, direct payments, food security

Ramona Ciolac, Ioan Csoz, Iuliana Ioana Merce, Ioana Balan, Ana Maria Dincu

Study on the Concept of Rural Tourism and Leverage of Some Specific Activities from Rural Areas through Rural Tourism

471

Abstract

The popularity of the forms of rural tourism has grown in recent years. From the individual initiatives it become a real alternative for leisure. In the majority of rural settlements, defining emblematic is multiple: landscape quality and warmth of the people, works of art and folk technique, traditional occupations, costumes, customs, traditions, cuisine, local resources, etc. To these are added awareness, by farmers, of the need to diversify the activities by engaging in forestry, tourism or calling certain activities on specific period, within the local economy.

Keywords: rural tourism, activities, development, crafts

Ramona Ciolac, Ioan Csoz, Ioana Balan, Ana Maria Dincu

Research Regarding the Impact of Rural Tourism Forms on the Rural Area

475

Abstract

The twentieth century is the century of speed, large transformation of civilization, of great discoveries, but also the period that puts more emphasis on return to roots, the unpolluted environment, relaxation, traditional products. Many EU governments recognize that agrotourism and rural tourism are one way that can save agriculture, also that "in the next 20 years tourism will be part of the economy and rural tourism and agrotourism will become the tourism of future." The reason? Authenticity of rural areas is a quality becoming more demanding in terms of present life. In his development, rural tourism, had periods of growth but also of decline. Certainly that was never endangered. Unknown forms of rural tourism know so far, the large momentum dating at the desire for freedom and lack of rigid programs. Conducted as complementary activities, rural tourism forms not break peasant life balance, not cause loss of existing activities before, but allow the high-grade products obtained and hence their development, together with the development of others.

Keywords: rural tourism forms, impact, rural tourism development

Cornelia Petroman, Ioan Petroman, Gabriela Ivaşcu, Diana Marin, Ştefan Coman, Moişina Şucan

Dynamics of the Ecological Agroalimentary Produce Market

479

Abstract

The market of ecological agroalimentary produce in Romania tends to have a positive evolution, identical with the world market, according to the specialists in the field. The market of ecological produce in Romania is being developed: from the point of view of its life cycle, it is steadily going to the growth period. Since the appearance period passed away, now there is the unsatisfied need of green produce: the first producers able to meet this need have appeared and they have started to meet the needs related to these produce.

Keywords: market, ecological produce, dynamics

Cornelia Petroman, Ioan Petroman, Gabriela Ivaşcu, Diana Marin, Mircea Pârvu, Calin Popovici

Features of the Agroalimentary Market of the Timiş County (Romania)

482

Abstract

The analysis of the household categories in the Region West allows us to point out aspects that characterize and individualise each household also emphasizes a few trends common to all households operating in the same environment. Household incomes are impacted, in their turn, by the share of inactive people: thus, the larger the share, the less the mean income per capita; the discrepancies between household incomes are wider in the households with larger numbers of people. The share of the liquidities of the total households characterise the standard of living of the farmers since there is a close interdependence between the size of liquidities and the structure of consumption.

Keywords: market, agro-alimentary produce, Timiş County, features

Ioan Petroman, Cornelia Petroman, Ioan Rus, Andreea Stan, Elena Constantin, Dorel Căprar Inbound Tourism in some European Countries	487
---	-----

Abstract

Contemporary society is more and more service-oriented, with more and more opinions claiming that it is a service society, with a steadily increasing tertiary sector. Tourism has become one of the most important economic activities due to the income from European tourists. It is also one of the main sources of jobs in many countries. Though Romania has an extraordinary tourism potential, tourism services it supplies and high prices compared to the quality of the services have not turned Romania into one of the most desirable places to go to in Europe; therefore, income from tourism are much lower than income from tourism in Hungary, The Czech Republic, Poland, or Bulgaria.

Keywords: arrivals, Europe, incomes, tourists

Ioan Petroman, Cornelia Petroman, Constantin Buzatu, Diana Marin, Adrian Dumitrescu, Constantin Statie, Ioan Rus A Religious and Ethnic Tourism Profile of Europe	490
---	-----

Abstract

The distinction between ethnic tourism and cultural tourism, though blurry at first sight, can be clarified with the help of two key-elements: ethnic tourism tends to focus on a certain group of people for whom exoticism is, obviously, the main tourism attraction; ethnic tourism turns the natives rather into performers on a special “stage” for tourists than background performers facilitating “exotic experiences”. Instead of looking for historical monuments, for nature wonders, or for a local “cultural environment”, the ethnic tourist needs to see people whose way of life differs considerably from their own way of living. Thus, ethnic tourism depends, mainly, on the relationship between tourists and the natives, an encounter that is mediated by a third party that represents the tourism industry.

Keywords: ethnic tourism, religious tourism, Europe, tourism profile

Ion Pirvutoiu, Agatha Popescu Analysis of Milk Supply and Trade Balance in the EU-7	494
---	-----

Abstract

The purpose of the paper is the analysis of the EU-27 milk supply balance and milk trade balance in order to present the largest milk producers, exporters and importers and the coverage degree of milk supply by production, imports, exports and stock changes, using the data provided by FAO Stat, 2009-2010 for the reference period 2003-2005. The EU-27 milk supply balance accounted for 116,229 thou tons of which 54.5 % is assured by Germany, France, Italy, United Kingdom, Poland, Netherlands and Romania. A number of 22 EU countries registered a self sufficiency degree higher than 100 %, at the EU-27 level its performance being 132 %. About 67 % milk it achieved in Germany, France, United Kingdom, Poland, Italy and Netherlands, which are the EU largest milk producers. The EU-27 trade balance is a positive one, exports exceeding imports by 10,448 thou tons milk. The main EU milk exporters are France, Germany, Ireland, Netherlands, Denmark and Poland. The main EU milk importers are Germany, Italy, Netherlands, United Kingdom, Belgium, Spain and France. The EU production is enough for covering milk demand and export the surplus to other countries.

Key words: analysis, EU-27, milk supply, trade balance.

Ion Pîrvuțoiu, Agatha Popescu Analysis of Romania’s Honey Market	500
--	-----

Abstract

The paper aimed to present the evolution of Romania’s honey market in the period 1990-1997, by means of the specific indicators: number of beekeepers, number of bee families, honey yield and production, ecological honey production, honey trade and price. The analysis has pointed out that beekeeping has been continuously developing mainly after the year 2000. In 2007, 34,971 beekeepers were keeping 1,085,905 bee families, producing 18.56 kg honey per family in average, meaning 20,159 honey tons. The major producing regions are the Central, South West, West, North East, South East and North West areas. Romania produces 50 % mixed honey, 30 % Robinia honey and 25 % lime honey and honey price is related to honey quality. Ecological honey is produced in 584 apiaries and accounted for 2,300 tones in 2008. Honey consumption per capita is 0.19 kg, still at a low level compared to other EU countries. In 2007, Romania exported 6,236 tons of honey and imported 1,8 tones. Romania is a net honey

exporter having a positive trade balance. Romania produces 6.26 % of the EU honey production and 1.87 % of world production. It also contributes by 5.67 % to the EU honey exports and by 1.53 % to the world exports.

Keywords: analysis, honey, market, Romania.

Agatha Popescu

Research Concerning the Correlation between Demand and Offer in the Romanian Milk Market

504

Abstract

The paper analysed the evolution of Romania's milk production and consumption in the period 2000-2008 in order to identify the correlation between milk offer and demand. Fixed basis index, average, standard deviation, variation and correlation coefficients have been used for processing data. The specific indicators taken into account are: number of milk producing animals, milk yield and production, production per inhabitant, consumption per capita and milk offer-demand ratio. Milk production increased by 9.4 % from 51,630 thou hl in the year 2000 to 59,006 thou hl in 2008, because of the higher milk yield by 24 % but the lower number of milk producing animals by 8 %. As a result, milk production per capita decreased by 4.15 %. Milk consumption increased by 31.9 % from 193 liters/capita in 2000 to 254.7 liters in 2008, being covered both by domestic production and import as well. Milk yield and milk production are positively and strongly correlated ($r=0.927$) and milk production and consumption per capita as well ($r=8.897$). But between milk production per capita and consumption/capita is a weak relation. Milk consumption has been entirely covered by production between 2000-2002 and since 2003 it has been also covered by imports.

Key words: correlation, demand, market, milk, offer, Romania

Agatha Popescu

Considerations on Cattle Stock and Cow Fresh Milk Production in the EU Countries

508

Abstract

The paper aimed to analyze the evolution of cattle stock and cow milk production in order to point out the main trends and differences between the EU-27 member states in the period 2004-2008. The data collected from FAO Stat, 2010 have been processed calculating the fixed basis index, average annual rhythm index and also the share of each EU state in cow milk production at the EU and world level. The main trends in the EU concerning cow milk sector are the continuous decrease in cattle stock, the increase of cow milk yield under the conditions of keeping a constant milk production and also milk production per capita. In 2008, the EU-27 was raising 90,478 thou cattle, and produced 149,388 thou tons cow fresh milk. The EU -27 is placed on the 5th position for number of cattle and on the 1st position for cow milk production, producing 25.8 % of world production. The largest milk producers in the EU-27 are Germany, France, United Kingdom, Poland, Netherlands, Italy, Spain, Ireland, Romania and Denmark, whose contribution to the EU productions is 82.82 %.

Keywords: analysis, cattle, cow milk, EU-27

Mirela Samfira, Ioan Petroman

Therapeutic Value of the Human Being-Animal Relationship

512

Abstract

In this paper the authors try to open a window towards the emotional, psychological and social benefits of a new form of therapy – the zoo-therapy (the therapy intermediated by animals). The strong relationship between men and animals as well as its material advantages are very well known but their impact on the conditions, on the stress decrease, on the prevention of some types of cancer, on the rise of self-esteem or school performance is still little known. The emotional and medical benefits can be successfully obtained in old people, children, chronic patients, or children with autism – even in people who are not the animals' owners. Thanks to this information, farmers can choose new alternatives for their work with the animals, in the treatment of different kinds of diseases and helped by specialists.

Keywords: interaction, responsibility, zoo-therapy, well-being.

Mirela Samfira, Ioan Petroman New Opportunities of Valorising Animal Produce: Turning Animal Farms into Educational Agrotouristic Farms	516
---	-----

Abstract

Being a relatively new domain, educational agri-tourism activity involves a number of factors influencing its development: knowledge of the economic, social and cultural domain limits but in the same time accurate information about farm availability to receive children and/or people with special needs. For this paper was created a questionnaire (with 19 items) for farmers in order to find if there is availability to develop and to change their farm in a certain way - to educate new generation through the relation with animals life and care, eating natural food and being creative in the nature. This questionnaire was applied to 60 farmers from the Timiș County and the answers have shown that many of them (95%) are willing to receive person with special needs and there are farmers which think they don't have anything to offer to develop and strengthen some certain traits in children personality and about the advantages for parents, teachers and local community.

Keywords: agritainment, community development, education, farmer.

Marina Luminita Sarbovan Poll Tax in Agriculture	520
--	-----

Abstract

Under the crisis constrains, the Romanian government tries to balance the budget, to stop the inflation and decrease unemployment, but its financial possibilities to do so prove to be much smaller than necessary. As far as agriculture is concerned, because of the strong connection of this branch to the European rural mechanism, the state intervention plays the key role in the protection and promoting the national production, in competition with other global producers. The taxation system still owes unexpected effects, influences the prices for the animal and vegetal production, the sales and the profits of this branch, in the context of included fluctuating profit particularities. Is poll tax a possibility or a necessity for agriculture?

Keywords: balance the budget, mechanism, taxation.

Marina Luminita Sarbovan The Home Market Effect in Agriculture	524
--	-----

Abstract

The most debated economic paradox refers to the positive and negative effects of most of the economic activities; these antagonist sides become in business production factors because they are holding costs. The aggregated effects of human activity surpass the firm or corporate borders, becoming prices paid by consumers, or in the situation of larger social costs, burdens for the tax payers. Some polluting effects of production, consumption and services, such as global heating, the carbon-dioxide emissions, wars, epidemics, malnutrition, obesity, became lately global critical problems for all nations and international organisms. The question remains weather governors will better administrate current crisis focusing on domestic, continental or global markets mechanisms, taking in consideration their particularities.

Keywords: better administration, costs, positive and negative effects

Iulian Vlad, Cristina (Negre) Pîrvuleț, Marius Maftei, Gheorghe Săvoiu, Mirela Stanciu, Maria Gheorghe Some Trends and Risks of Pastoral Occupation and Agricultural Consequences for the Romanian Mountain Village – The Results and Conclusions from a Sociological Research in Rucăr Village (Argeș)	528
---	-----

Abstract

During the sociological research and in the elaboration of this paper, the authors were challenged by a number of threats to the existence and development of the Romanian mountain village, especially to the pastoral occupations. The major trend and risk are the abandonment of sheep breeding, with negative effects on the local food products and the drastic decrease of the sheep breeding population, which will never be able to provide alternatives to the development of the agriculture by promoting certain agro-tourism activities in Rucăr village. The analysis of the traditional occupational impact requested the application of a sociological research, effected on the field, in order to gain statistic decision support, adjusted to the specific of animals breeding activities and especially to sheep. The most important risk is that traditional sheep breeders tend to become mere historic references and are not replaced by

other professions or occupations in rural areas, which seem to disintegrate due to lack of support, to much too high burdens... The final remark underlines that profitability of the sheep breeding occupation was never limited to its specific food products, and covered, instead, sometimes unimaginable , in terms of social and even cultural forms.

Keywords: pastoral occupation, sociological research, sheep breeding, agro-tourism.
