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CREATION AND PRESUMPTIONS FOR EMPLOYEMENT AND DIVERSIFIKATION IN RURAL REGION ZADAR COUNTY HINTERLANDS REVITALISATION

MR. SC. ANA GRGAS DIPL. ING.

CROATIAN INSTITUTE FOR AGRICULTURE
ADVISORS SERVICE
COUNTY ZADAR DEPARTEMENT
FARM COOPERATIVE «RAŠELJKA»
BENKOVAC, ANTE STARČEVIĆA 2A 23420 BENKOVAC
TEL./FAX - 023/ 681 110; 023/ 681 – 507
e-mail ana.grgas@hzpss.hr

Zadar hinterland i.e. towns Benkovac, Obrovac and Gračac with (47) settlements embraces 1100 km square and more then 1000 family farms whose primary activities is agriculture. Nearby siteseeing: mountain Velebit, rivers Zrmanja and Krupa and national parks of nature as interesting touristic destination gives an extra value. The whole region is characterized with a great potential for eco production and attractiveness of etno facilities.

The reasons of bad situation of socio-economic life in that region are the following: undeveloped civil society movement, lack of enterprising spirit and praxis, relative low education level, unemployment and problems with youth motivation. Consequence of such conditions are obvious from the end of the last war till nowadays in very visible intensity: growth of poverty, neglected and ignored old population living in very unhuman conditions, disadvantageous social dynamics, bad travel conections with town and sometimes life without water and electricity (mostly returnees problems). Because of bad infrastructure and usual difficulties for small producers to go to a market, low rate of investement, technology out of date etc. Logical result of this is a steady decrease of income and a danger for even worse results in such rural economy. By the most of the farmers original product therefore are more sentimental remembrance and presentation of the past then real potential strenght, private and domestic folklore on a fair and romantic exhibition are basis for an optimistic future. With careful investement, motivation of youth and education, it is possible replace disadvantages with immense economical potential. This is very important incorporate in national agricultural strategy with accent on return of youth and touristic market as important part of the program.

European tourists satiated with noisy coast more and more are interested for hinterland looking for exclusive products and unusual experiance (adventure). All of this they can found just here.

Diversification of farmers activities:

- development of authentic, original, traditional products: sheeps and goats cheese, walnut brandy and marasca;
- cultivation of medicinal, aromatic and seasonal plants (lavender, garden sage);
- production of natural etherical oils;
- revitalisation of pyrethrum cultivation (autochthonous plant, dalmatian endem);
- apiculture;
- felt production;
- stone making out

Marketing

- identity of product;
- graduation ceremony;
- new markets for commercial farmers;
- network and shoping centers where every producer should have own space for own products with possibility for organisation and demonstration of new ideas and creativity;
- Chief goals for revitalisation of Zadar County hinterland are: incitements of new iniciatives, selfemployment program, improvement of standard and new quality for rural inhabitants, creativeness and conditions for motivation of youth.

ROLE OF RURAL TOURISM FOR DEVELOPMENT OF RURAL AREAS

Andrej Udovč, Anton Perpar

Biotechnical Faculty, University of Ljubljana, Jamnikarjeva 101, 1000 Ljubljana, Slovenia

ABSTRACT

The paper will analyse the role of rural tourism for the development of rural areas on the comparison of two regions with different types of rural tourism. One area is of with highly diversified rural tourism with wide range of tourist products (rafting, hiking, cycling, farm tourism, skiing, ...). The tourism offer in the second area is much more uniform (mainly farm tourism and some spa). The study analysed how the two different types of tourist product diversifications influence the development possibilities of studied rural areas. We analysed how different systems are able to maintain its functions in the context of identified perturbations (socio-economic and geophysical). We analysed the influence of different factors on systems stability, its resilience, robustness and integrity. The gained results show that only the higher level of diversification is not a guarantee for systems higher stability, resilience, robustness and integrity, but there also other factor which influence the outcome as: size of the area, diversity of actors involved, type of governance, ...

KEYWORDS: Rural tourism, diversification, socio-economic system, system stability, system resilience, system robustness, system integrity

CONSTRAINTS ON RURAL ENTREPRENEURSHIP IN EASTERN HUNGARY

ANDREW F. Fieldsend* and JANOS Nagy

University of Debrecen Centre of Agricultural Sciences, Department of Land Use and Regional Development, 4032 Debrecen, Boszormenyi ut 138.

*Corresponding author: Tel: 003652508444; Fax: 003652508460; E-mail: fieldsend@agr.unideb.hu

ABSTRACT

Sustainable rural development can be defined as: "maintaining or increasing the wealth-generating capacity of rural communities whilst maintaining the long-term capability of the community and its built and natural environments to support this capacity". In this definition, the words "wealth generating capacity" are crucial. In particular, the capacity of people in rural areas to offer goods and services that provide adequate, sustainable incomes must be encouraged. Hence, rural entrepreneurship, both agricultural and non-agricultural, is an important component of sustainable rural development. However, many constraints to rural entrepreneurship exist.

The purpose of this study was to identify the major constraints in the Hungary-Romania cross-border region. A questionnaire survey was conducted to identify the most important constraints to rural entrepreneurship in the Hungary-Romania cross-border region. The questionnaire was sent to approximately 550 persons with an interest in rural development in the cross-border region. These include representatives of regional development agencies, county councils, national government organisations and agencies, trade groups e.g. agricultural chambers, chambers of commerce, and NGOs, together with microregion managers and academics. 75 correctly completed questionnaires were returned.

Seven general areas were identified where action is needed, namely better customer focus and less bureaucracy, better access for entrepreneurs to information and "signposting", improved cooperation (partnerships), better targeting, devolution to the local level and the importance of local-level plans, the need for education at a young age, the continuing importance of agriculture and the need to measure success.

Rural entrepreneurs form a group that is traditionally difficult to access, due to factors such as their dispersed distribution, limited willingness to engage with "government" or to form associations, the small size of many rural businesses and poor communications in rural areas. Some existing initiatives for addressing these constraints and some ideas for future activities are discussed. Partnerships between educational institutions, government agencies and membership organisations may represent a useful tool for engaging with at least some groups of rural entrepreneurs.

PHYSICAL METHODS OF PLANT GROWING STIMULATION

Anna Aladjadjian

Agricultural University, 4000 Plovdiv, Bulgaria, anna@au-plovdiv.bg

ABSTRACT

Different chemical additives are used for rising productivity of plants and animals. Their application often causes the contamination of raw materials for food production with toxins that are dangerous for consumers' health. On-farm safety for fresh produce needs developing and implementing new methods for quality assurance.

The influence of physical factors as microwave and laser radiation, magnetic field and ultrasound treatment is an alternative of soil additives and fertilizers. The substitution of chemical amelioration by physical one can reduce the toxins in raw materials and thus – raise the food safety. The effect of some physical factors (laser irradiation; ultrasound influence; irradiation with microwave electromagnetic rays; magnetic field influence) on seed vitality indices (germinating energy, germination, germ length, and fresh weight) has been discussed.

Key words: food safety, magnetic field, laser, microwave irradiation, ultrasound

CHARACTERISTICS OF RURAL AREAS IN SLOVENIA: ADVANTAGES, WEAKNESSES AND POSSIBILITIES FOR IMPROVEMENT OF PRESENT SITUATION FROM VIEWPOINT OF SUSTAINABLE RURAL DEVELOPMENT

ANTON PERPAR

University of Ljubljana, Biotechnical Faculty, Agronomy Department
Chair of Agricultural Economics, Rural Sociology and Rural Development
Jamnikarjeva 101, SI – 1000 LJUBLJANA, SLOVENIA

Tel.: + 386 1 423 11 61, Fax: + 386 1 423 10 88, e-mail: anton.perpar@bf.uni-lj.si

ABSTRACT

In the article an analysis of situation in Slovene Rural Areas are presented. The comparative analysis, based on typology of rural areas in Slovenia made by Institute of Agricultural Economic on Biotechnical Faculty, shows that Slovene countryside is not homogeneous. Present situation and the possibilities of development and the attraction of individual rural areas depend on the demographic situation, on the level of economic and social development, on natural conditions etc. Present situation will be analysed from the viewpoint of sustainable rural development: advantages, weaknesses and possibilities for improvement will be presented.

Keywords: rural areas, sustainable rural development, agriculture, rural population, typology, Slovenia

SUGGESTIONS FOR THE INTEGRATED PEST MANAGEMENT OF THE POPULATIONS OF BYCTISCUS BETULAE L. (RHYNCHITIDAE) IN ODOBEȘTI AGROECOSYSTEM, VRANCEA COUNTY (ROMANIA)

Antonie Iuliana¹, Teodorescu Irina², Tanase Maria³

1. Dr., The Faculty of Agricultural Sciences, Food Industry and the Protection of the Environment Sibiu, str. Oituz, nr. 31, E-mail iuliana_antonie@yahoo.com

2. Prof. Dr. University of Bucharest, Faculty of Biologi, Department of Systems Ecology and Sustainability, Spl. Independentei 91-95, E-mail iteodorescu@bio.unibuc.ro

3. Dr., The Faculty of Agricultural Sciences, Food Industry and the Protection of the Environment Sibiu, str. Oituz, nr. 31, E-mail matitanase@yahoo.com

In Romania there are signaled in the vine culture over 70 species of animals, out of which 20 are harmful. Although by the means of using chemical products the target is to diminish constantly the pest and it is declared the intention of protection of the natural enemies, none of these targets is fulfilled, but paradoxically, on the contrary. On the moment there is a decrease of the forces of the

pests, but in the following years, this effect is not maintained, existing the danger of “explosions of multiplication”. At the same time is stimulated the massive evolution of new pest that haven't made important problems in the past like the studied species *Byctiscus betulae* L. This secondary pest succeeded, under the conditions of the Odobești agroecosystem, to become primary.

Our work is a part of a more ample study about the species *Byctiscus betulae* L. in Odobești (Vrance) agroecosystem during 2000/2003 and emphasizes the success of the prevention measures of the appearance of this pest, the prevention of the outrunning of the economic limit of harmness by the improvement of the methods and means of integral control of the studied species.

NATURAL ENEMIES POPULATIONS MANAGEMENT A WAY FOR CROPS PROTECTION AGAINST PESTS ATTACK

Iuliana Antonie¹, Irina Teodorescu²

1. Dr., The Faculty of Agricultural Sciences, Food Industry and the Protection of the Environment Sibiu, str. Oituz, nr. 31, E-mail iuliana_antonie@yahoo.com

2. Prof. Dr. University of Bucharest, Faculty of Biology, Department of Systems Ecology and Sustainability, Spl. Independentei 91-95, E-mail <iteodorescu@bio.unibuc.ro>

Modern agriculture implies the simplification of the ecological systems structure over vast areas, decreasing biocoenosis diversity by impose a small number of cultivated plants, and especially by chemical control, with elimination of other plant species, of all consumers categories and decomposers. Self-regulation agrosystem function is disturbed, because human activities interferes and modifies interactions between different trophic categories, diminishing natural control efficiency. After many decade of intensive agriculture, with monoculture, pesticides treatments, chemical fertilizer utilization, many negative effects are registered, one of these being the loss of the biodiversity level, especially natural enemies diversity, not only in the agrosystems but even in surrounding ecosystems.

In general, the biodiversity is the most measures of the environmental quality and ecological systems sustainability, and natural enemies diversity is also the most measure of production quantity and quality assessment, because natural enemies diversity increase is a good way for pests attack decrease.

Our study was performed during 1985-2005, in May, June and July, using as sampling methods pitfall traps, metric frame, entomological net, examine aerial organ of plants, collected eggs, larvae, adults. We studied the aboveground arthropods diversity, focusing on insects from wheat, oats, corn, *Sorghum*, beans, alfalfa, potato, beet, sunflower, cabbage, cauliflower, sugar beet, clover crops. Sampling areas were located especially in Romanian South regions but also in other parts of the country, in different part of the same crop, but near other different plant culture, in crops placed in vicinity of field limited with wild vegetation, roads border, forests.

We have investigated only Arthropoda consumers we identified *Arachnida* (represented by the orders *Acarina* and *Aranea*), one species of *Crustacea Armadilidiidae* family, order *Isopoda*, *Diplopoda* species belonging to *Julidae* (*Julus terrestris*, *Blaniulus gutulatus*) and *Polydesmidae* (*Polydesmus complanatus* L.) families, *Chilopoda* species belonging to *Lithobiidae* (*Lithobius forficatus* L.) and *Geophilidae* (*Geophilus* sp.) families, and *Insecta* species represented by over 100 families belonging to 11 orders. Most of the arthropod taxa collected were identified at the species level, except *Acari*, *Aranea*, some *Diptera*, *Coleoptera*, *Collembola*.

In our researches we registered a greatest natural enemies diversity and abundance (especially predaceous *Carabidae*, *Staphylinidae*, *Coccinellidae*, *Staphylinidae*, *Anthycidae*, *Syrphidae*, *Aranea* species and *Hymenoptera* parasitoids species) and consequently more effective natural biological control, in the proximity of forests, herbaceous ecotone zone (the linear landscape structures between crops and different habitats).

Our conclusion is that for natural enemies populations management is very important to promote these ecotone zones which conserve high floristic and faunistic heterogeneity, contribute to enrich the biodiversity in surrounding crop areas, represent good sites for parasitoid adults and predators, for feeding with supplementary or alternative food (pollen or nectar, hosts or prey), for reproduction and bad time protection, for hibernation or estivation periods, as dispersal corridors. Crops biodiversity and stability increases through permanently immigration/emigration processes from ecotone zone and surrounding agricultural or forest habitats.

The natural enemies biodiversity in the crops depend not only of the pest hosts diversity and density, but of the entire agrobiocoenosis diversity level, of the surrounding crops or of other type of ecosystems (forest, pasture), of precursor crops diversity.

COMPARISONS OF CENTRAL AND EASTERN EUROPE COUNTRIES WITH TURKEY ACCORDING TO BASIC AGRICULTURAL INDICATORS

ARZU Secer¹, FARUK Emeksiz²

⁽¹⁾Research Asistant Cukurova University, Faculty of Agriculture, Department of Agricultural Economics, asecer@cu.edu.tr

⁽²⁾Prof. Dr. Cukurova University, Faculty of Agriculture, Department of Agricultural Economics, femeksiz@cu.edu.tr

ABSTRACT

Agriculture is an important sector for many countries especially in the developing and underdeveloped countries. The importance of agriculture can summarized as, providing nutritional requirements of people, raw materials for food sector and/or other sectors, employment opportunity and contribution to foreign trade. In developing countries, most of the population income provided from agricultural sector and generally income per capita is lower, because of these reasons the sector become more important day by day. It is an necessary that we should improve agricultural and rural development to increase lower incomes and to improve income distribution. We should know that structure of the agriculture of the countries are very well to apply suitable policies and interpret results of them. In this study, our aim is to compare some new members of European Union (Bulgaria, Hungary, Poland, Slovakia, Romania) and Croatia to Turkey, which are candidate countries, according to agricultural structure. We can give basic indicators to understand the statement such as; proportion of agriculture in total gross national product, proportion of urban-rural population in total population, agricultural active population, amount of agricultural and arable area, amount of irrigatable area, agricultural export and import. Also, production and yield for these countries and compare proportion of total production were examined.

Keywords: Agricultural structure, basic agricultural indicators, developing countries, rural population

VERTICAL COORDINATION: CONTRACT PRODUCTION METHOD TO SOLVE MARKETING PROBLEMS IN THE RURAL AREAS

ARZU Secer¹ MUGE Kantar Davran² FARUK Emeksiz³

⁽¹⁾Research Asistant Cukurova University, Faculty of Agriculture, Department of Agricultural Economics, asecer@cu.edu.tr

⁽²⁾Assist. Prof. Dr. Cukurova University, Faculty of Agriculture, Department of Agricultural Economics, mkantar@cu.edu.tr

⁽³⁾Prof. Dr. Cukurova University, Faculty of Agriculture, Department of Agricultural Economics, femeksiz@cu.edu.tr

ABSTRACT

Agriculture is very important sector because of providing requirement of feeding for people, assuring raw material for agriculture and non-agriculture sectors, creating employment opportunity for most of people and contribution to foreign trade. However, especially in developing and under development countries, its own characteristics effects production and marketing. With these problems, producers is forced to obtain necessary inputs and to sell their products easily. Some basic properties of agriculture sector such as; production that depends on natural conditions, risks, obscurity, size of farms, levels of income and education. In recent days, concept of vertical coordination have been examined to reduce production and marketing problems and increase communication between producers and consumers. We can give a simple definition for this concept. Vertical coordination refers to the synchronization of successive stages of production and marketing, with respect to quantity, quality, and timing of product flows. Methods of vertical coordination include open production (also referred to as open, or spot market), contract production, and vertical integration. In this study, first of all some basic properties about vertical coordination and its methods will be given and secondly definition of contract production, positive and negative affects of its and improvement about the method in Turkey will be explained. Finally, reasons which are obstacles to farmers for vertical coordination will discuss from the social-economic and societal point of view.

KEYWORDS: Vertical coordination, contract production, agricultural marketing, rural area

NEW RURAL DEVELOPMENT POLICY IN PERSPECTIVE OF THE EASTERN EUROPE AND SOME CANDIDATE COUNTRIES OF EU: SPECIAL CASE OF TURKEY.

BETUL Bahadır¹

⁽¹⁾Research Asistant Cukurova University, Faculty of Agriculture, Department of Agricultural Economics, bbahadir@cu.edu.tr

ABSTRACT

Rural development has been considered as extremely important topic in the last decades. International organizations, institutions and governments allocate more time, knowledge and fund for rural development. Agricultural Agreement of WTO (World Trade Organization), have restricted direct supports to agricultural production and trade, but there is no restriction to support included green box measures on rural development. In spite of all these restrictions, countries continue to support indirectly their agriculture sector by the name of rural development. The European Union has 25 members by the accession of 10 new members that joint to the EU in May 2004. Due to both internal and external reasons, some changes were made in CAP and consequently rural development policies of EU. The European Commission has presented a new proposal for Rural Development policy and budget for the period 2007-2013. It suggest that in 2013 almost 25 percent of the agricultural budget will go into Pillar 2. The important of Rural Development in the European agricultural policy increase day by day, especially with the CAP-reform. Although increasing the budget of supporting rural development in EU, there has been non-transparency and a lack of information regarding implementation and how the budget has been used in the different member countries. In the enlarged European Union, over half of the population lives in rural areas which cover more than 90 % of the territory. The aim of this paper was to look over new rural development policies of EU in view of the European Union's eastward enlargement perspective and situation of new member and candidate countries. A general evaluation of the changes in the rural development policies of EU had been done, then it was evaluated the supporting tools to be applied to the new member and candidate countries especially Turkey.

Keywords: Rural Development Policy, European Union, Agricultural Policy, New Member and Candidate Countries of European Union.

EFFECT OF SOME ENVIRONMENTAL FACTORS ON THE RELATIONSHIP BETWEEN CYTOLOGICAL QUALITY AND COMPOSITION OF MILK

BOGUCKI Mariusz, SAWA Anna, NEJA Wojciech

Department of Cattle Breeding, University of Technology and Agriculture in Bydgoszcz

ABSTRACT

Milk quality depends mostly on environmental and production factors, which include the management system, feeding, lactation number, stage of lactation, udder health, season of the year, and herd size. Breeding work also has some effect, with the rate of improvement depending, among others, on the correlation between particular milk traits. Because somatic cell count (SCC) is one of the criteria for grading purchased milk and is an important indicator of udder health, the present study was carried out to determine the relationships between the cytological quality and composition of milk as influenced by selected factors.

Analysis covered traits of milk from approximately 950 000 test milkings on cows from the active population in the Pomerania and Kujawy regions. The cows calved between 1998 and 2002. During statistical analysis, SCC data were transformed to natural logarithm of SCC (LSCC). The CORR procedure of the SAS packet was used for statistical calculations. The correlations between LSCC and milk traits were calculated within the following factors: season of the year (winter, spring, summer and autumn), stage of lactation (≤ 100 , 101-200, 201-300 and > 300 days), lactation number (1, 2, 3, 4 and > 4 lactation), daily milk yield (≤ 10 , 10.1-15, 15.1-20, 20.1-25 and > 25 kg milk), and herd size (≤ 10 , 11-20, 21-100, 101-200 and > 200 cows).

Correlations between milk traits were analysed for cows with a daily yield of 17.3 kg. SCC had a highly significant effect on milk traits, with negative effects on daily milk yield ($r = -0.02^{**}$ to -0.27^{**}) and lactose content ($r = -0.27^{**}$ to -0.42^{**}) and positive effects on fat content ($r = 0.001$ to 0.09^{**}) and protein content ($r = 0.16^{**}$ to 0.27^{**}). With advancing stages of lactation and age of cows, there was a steady increase in the absolute values of the correlation coefficients between LSCC and milk yield and between LSCC and lactose content, with a concurrent tendency towards a decreasing correlation between LSCC and fat and protein content. Analysis of the correlations between LSCC and milk traits in particular seasons of the year revealed higher values in autumn and winter than in summer and spring, as well as the greatest differences for the correlation between LSCC and protein content ($r = 0.22^{**}$ to 0.27^{**}). The coefficients of correlation between LSCC and milk yield, protein content and lactose content were considerably higher for cows with a daily yield of up to 10 kg milk than for higher yielding cows. The relationships between LSCC and milk traits were differentiated to a low extent by daily milk yield higher than 10 kg. The relatively high coefficients of correlation between LSCC

and milk yield in herds with more than 200 cows should encourage breeders to pay greater attention to the health status of cow udders. Differences in the coefficients of correlation between LSCC and milk traits within age of cows, stage of lactation, herd size and season of the year indicate that these factors must be accounted for in efforts to improve milk quality.

INTEGRATION OF MEDICINAL AND AROMATIC PLANT SPECIES WITH REPELENT AND INSECTICIDE ACTION INTO THE POTATO CROP ROTATIONS, FOR THE BIOLOGICAL CONTROL OF THE MAIN PESTS

Camelia Sand*, Mihai Radu Pop*, Constantin-Horia Barbu*, Dana Bobiț**

* - "Lucian Blaga" University of Sibiu, str. Oituz nr. 31, cod 550337, email: camellia_sand@yahoo.com

** - ICDCSZ – Braşov, str Fundăturii nr. 2, cod 500470, email: bobitd@hotmail.com

ABSTRACT

Biological agriculture and control of pests is gaining large scale recognition, more and more surfaces being treated in this way. Starting from this, we have considered opportune, in 2001, the initiation a research project focused on the enlargement of the use of medicinal plants.

Following certain bibliographical researches we have chosen 10 species of perennial medicinal plants and 17 annual ones, which were used in an experiment aimed on their repellent and insecticide effect when integrated into the potato crop rotation. The effect of the medicinal and aromatic plants was determined based on many laboratory analyses that have confirmed the presence of some substance that are antagonists to some insect hormones and of certain feeding inhibitors and phytotoxic substances, too.

The experiments were carried out using the following perennial species: *Artemisia abrotanum*, *Armoracia rusticana*, *Angelica archangelica*, *Artemisia capilaris*, *Crisanthemum balsamita*, *Ruta graveolens*, *Valeriana officinalis*, *Hysopus officinalis*, *Rheum officinalis*, *Anthemis tinctorial*. The annual species were: *Calendula officinalis*, *Anethum graveolens*, *Phacelia thamacetoides*, *Ocinum basilicum*, *Trigonela foenum graecum*, *Artemisia annua*, *Perilla ocymoides*, *Linum ussitatissimum*, *Cynara scolymus*, *Carthamus tinctorius*, *Cassia angustifolia*, *Dracocephalum moldavica*, *Nigela damascene*, *Satureja hortensis*, *Coriandrum sativum*, *Sinapis alba*, *Fagopyrum aesculentum*

In 2003 and 2004 phenological observations and biometrical measurements were made, determining the development rate of plants and their height. The influence of the vicinity of each perennial plant on potato and vice-versa is observed, as well as the influence of the annual medicinal plant as precursors for potato.

EVALUATION OF SOME PRESERVATION TECHNOLOGIES OF THE EATABLE ROSE PETALS (*ROSA CENTIFOLIA L.*)

Carmen Leane NICOLESCU, Magda Gabriela BRATU, Daniela AVRAM

Valahia University of Târgoviște, Romania

Faculty of Environmental engineering and Biotechnology, Department of Food technology,

Phone: +0040 722 404 761, Fax: +0040 245 217 692 e-mail: clnicolescu@yahoo.com

ABSTRACT

Eatable rose petals are often used in the traditional Rumanian gastronomy as syrup, jelly and refreshing cooler. For alimentary purposes are used the petals from the cabbage rose (*Rosa centifolia L.* or *Rosa damascena, Miller*). The cabbage rose is very beloved because of its strong smell. It is often cultivated in gardens and parks in cities, but also in private rural farms. At the moment its valorification is made most in these rural farms for private consumption. The large fruit processing factories are not interested in its valorification. Sometimes such products can be found on the free food-market and most in the bill of fare of the rural agro-tourism farms. These farms have a large development in the last years in all regions of Romania.

One of the most important characteristics of the rose petals is its low conservability that make necessary their immediately processing. This can be also one of the causes that large fruits enterprises have a low interest on them. From this point of view it is important to investigate some preservation technologies that permit using this raw food product all over the year. The analyse and evaluation of some of the most usually applied technologies in fruit preservation was the aim of this study. The preservation efficiency of drying, refrigeration, freezing, UV irradiation and combined preservation methods like (drying and refrigeration) was investigated.

Because the alimentary value of fruits is given by their sensitive quality, chemical composition and proportion of its different compounds, and the alimentary security by its microbial load, the preservation efficiency of the analysed technologies was evaluated on the bases of sensitive, chemical and microbiological parameters.

There were analysed the most representative sensitive, physico-chemical and microbiological properties of the cabbage rose petals (*Rosa centifolia L.*), using the usual analyses methods. Sensitive parameters (taste, smell, color, aroma), chemical parameters (reducing sugar content, acidity, vitamin C content) and microbiological parameters (total plate count, total number of yeasts and moulds, yeast/mould ratio) were comparatively analysed.

The analyses were made on the fresh material and one year after preservation.

The results were statistically processed and models of their variation and dependence were made.

There was evaluated the best preservation technology in order to keep the taste and chemical value of the product. Using modeling it was possible to select the best variants that preserve the sensitive and chemical quality in the condition of a maximal stability.

The technological recommendations were made most for small enterprises like rural agro-tourism farms, the place were the valorification of this raw food product seems to be of most importance. For such enterprises it is important to develop permanently some "house specialties" which give the mark of the farm and which can assure their sustainability. A good preservation of the quality and stability of these specific products is necessary.

Developing efficient preservation technologies for eatable rose petals can be of interest also for the large fruit enterprises, because they can find a larger amount of this raw material if it is preserved.

STUDY ABOUT THE STABILITY OF LACTO-FERMENTED CARROT JUICE

Carmen Leane NICOLESCU, Lavinia BURULEANU

Valahia University of Târgoviște, Romania

Faculty of Environmental engineering and Biotechnology, Department of Food technology,

Phone: +0040 722 404 761, Fax: +0040 245 217 692 e-mail: cnicoscu@yahoo.com

ABSTRACT

Lacto-fermentation is one of the most used preservation technology applied to vegetables. In Romania it has a traditional value. If lacto-fermented vegetables are a very common food product, lacto-fermented vegetable juices are not so widely spread.

Consumers require more and more natural healthy food and lacto-fermented vegetables and vegetable products like juices fulfill such costumers' requirements by their nutritional and probiotic value.

Their production is at the moment realized more in small family food enterprises or agro-tourism farms. The large food production entrepreneurs are more and more interested in a sustainable technology to obtain these new food products which can be an alternative to the refreshing fruit juices or to be used as spice for other food products. In both cases the basic requirement are the flavor, stability and consumers security.

Because their probiotic quality is given by the alive lactic bacteria content, heat treatments are not the solution to obtain a high stability. Also if the juice will be used as refreshing drink a high acidity is not the best solution. The challenge of obtaining a high stability must be achieved by the chemical and microbiologic composition of the product.

In this study the stability of lacto-fermented carrot juice, obtained in different conditions was analysed. There was analysed the influence of the addition of different quantities of NaCl, different incubation temperature, different kinds of used lactic bacteria, different final acidity and different preservation temperature. The stability was analysed during a preservation time of 3 month.

Because of the good stability obtained in all analysed cases there was not necessary to combine the preservation with a previous low pasteurisation, only if the juice was required with a low acidity.

The stability was analysed using some sensitive, physico-chemical and microbiological parameters). Sensitive parameters (taste, smell, color, aroma), chemical parameters (acidity, vitamin C content) and microbiological parameters (total plate count, total lactic bacteria content, presence of sporulated spoiling bacteria) were comparatively analysed.

All analytical obtained data were statistically processed and variation and dependence models were performed. As result the validity term of the product was established and package and preservation indication were made.

IMPROVING THE QUALITY OF LIFE AND ENVIRONMENT IN RURAL AREAS BY PERFORMING AGRO-TOURISM FARMING

Carmen Leane NICOLESCU

Valahia University of Târgoviște, Romania

Faculty of Environmental engineering and Biotechnology, Department of Food technology,

Phone: +0040 722 404 761, Fax: +0040 245 217 692 e-mail: clnicolescu@yahoo.com

ABSTRACT

In Romania the most part of the population lives in the rural area. But here their life has even a low social level, so that it is a great priority to sustain the development of this social area.

The development of the rural tourism is one of the planned directions. According to the specificity of the Romanian rural communities, agro-tourism seems to be the best model to be adopted.

Agro-tourism gathers the specific agricultural activities from the farm with tourism services like leisure and meal, but also with entertainment activities. All members of the farmer's family make the tourism activity, but the agricultural activities remain the basis of their economic capital. The tourism activities have a part-time basis.

The paper tries to discuss the modalities to perform and integrate different farming and tourism activities in agro-tourism farms in the mountain, hill and plain countryside. Of high interest was analysed the valorification of the agricultural product produced in the own farm and the promotion of the traditional regional gastronomy. Specific entertainment and leisure activities were also largely presented and analysed.

Because agro-tourism develops more and more in Romania, it will have a large impact in the economic, social and cultural future development of the country. Its major impact is on the quality of life, even of the practicing people – the tourist, and also of their hosts – the residents in the countryside. The natural and manmade environment is also modeled at the interference of the activities and special relations established between these two categories.

At the other hand agro-tourism will be an important educational instrument because it made possible a large cultural interchange, because the agro-tourism services have an interactive and personalized character. In this way the people will find the common values of their cultures and promote them in the future global society.

SUSTAINABILITY OF BIODIESEL PRODUCTION

Constantin-Horia BARBU, Camelia SAND, Mircea MICU, Mihai POP

"Lucian Blaga" University, 550024 Sibiu, Romania

Tel: 0040-269-234111, email: horiab@rdslink.ro

ABSTRACT

The paper analyses the requirements for small-scale Biodiesel production, starting with the cultivation of oily plants (sunflower, soy beans, rape), determining their agrotechnical requirements, the possibilities of obtaining the raw oil, transesterification, and marketing of Biodiesel and its by-products, regarding both technology, and pricing.

A special attention is given to the cultivation of oily plants on soils polluted with heavy metals, where edible plants are not recommended to be cultivated.

Considering both the European tendencies and market niches, Biodiesel can be a feasible and sustainable option in rural development.

THE ROMANIAN AGRI-FOOD PRODUCTS COMPETITIVENESS IN THE CONTEXT OF THE EUROPEAN INTEGRATION

Cornelia Alboiu, Ph.D and Cecilia Alexandri, Ph.D

Institute of Agricultural Economics, Romanian Academy

Phone/fax: 004021-318-2411, E-mail: coraalboiu@yahoo.com

The paper presents the results of the European Simulation Model (ESIM), tested and calibrated on the Romanian agricultural products. The results are presented on a comparative basis with the results of other three studies, i.e. "Competitiveness and agricultural incomes in the agri-food sectors of CEECs" (Pouliquen, 2001), "Analysis of the impact of the EU enlargement upon agricultural markets and farmers' incomes in CEECs" (D.G. Agri, 2002), and "The Romanian agri-food sector in an European perspective" (World Bank, IAE study, 2005).

In this context, in order to better manage the agricultural markets, it is important to foresee the effects of CAP adaptation in Romania. The CAP implementation signals to the decision factors the necessity of the evaluation of the strategic options regarding the direct payments scheme which is to be adopted, the ways of granting these payments, the eligibility criteria, the effects on production, consumption and trade, the effects at the consumers' level, the necessary budget allocations, etc.

The impact of CAP adoption in Romania was investigated using the ESIM, a partial equilibrium model which allowed us to present some scenarios in relation to the evolution of production, consumption and trade of certain agri-food products. We took into consideration the hypothesis according to which the world prices are given as exogenous variables, that cannot be influenced by the production and trade of our country, as the share of Romania's agri-food trade in the world trade is low.

The proposed analysis model represents a tool by which the effects of CAP can be measured as regards the level of production, consumption and trade in certain agri-food products. For this study we took into consideration the following products: wheat, barley, corn, sunflower, soybean, meat (poultry, beef and pork), milk.

The model contains a list of policy instruments, namely:

- a) specific commodity policies
- b) policies affecting all the products
- c) exogenous variables of macroeconomic type, namely: exchange rate, population growth rate, GDP growth rate, GDP deflators, etc.

For testing the model's hypothesis we considered a file which contains data series regarding the production, consumption, including the product balances, the export, the import and the prices of the considered products, the macroeconomic variables and the parameters regarding policies for each of the modelled product. The model database contains a series of years considered as representative for the analyzed period, respectively period 1989-2003. The results are given on a baseline scenario (non-accession scenario), and accession scenario (including SAPS and market measures) with a forecasting of the production, consumption and trade of the considered products until 2016. The equations used were adjusted taking also into consideration the results of the Romanian agricultural Dossier considering the base area negotiated for which it is to benefit from the direct payment scheme.

The main conclusions are:

- the results of the model reveal a stabilization of the area under oilseeds due to the fact that only 892 thousand ha under sunflower will be eligible for direct payments, while for soybean the eligible area will total only 70,650 ha.
- the increase of grain and oilseeds production is expected;
- there are better prospects for beef, although there are great doubts in relation to the behaviour of the subsistence farms; beef production will be up by about 12% in 2016, compared to 2004; the decline of poultry meat production is expected on the medium term;
- pork production is expected to recover on the medium term and the net export will start again only after 2012.
- meat consumption is forecast to increase by 16% in 2007 compared to 2004
- the trend of total milk production and of dairy herds is slightly increasing. In percentage, at the end of the forecast period, total production will be up by about 12%, while the number of dairy cows by about 1.4% compared to 2003.

We anticipate that the results of this research study will contribute to a better organization of the agri-food markets in Romania; at the same time they will highlight the competitiveness of some of the investigated products (grains, oilseeds, beef).

Key words: ESIM model, CAP, supply, consumption, trade, competitiveness: Q13

BIOTECHNOLOGICAL METHODS FOR LIMITATION OF PHITOPHAGS INSECTS POPULATIONS UNDER THE DAMAGE LEVEL FOR ENVIRONEMENT PROTECTION

Cristina STANCĂ-MOISE

„Lucian Blaga” University Sibiu, ROMANIA

ABSTRACT

The biological methods used for the limitation of phytophaegous populations surfaced as a necessity, following the un-rational usage of pesticides that became a real danger both for humans and environment.

The paper presents the most important biological methods used for the limitation of phytophaegous populations under the harm economic threshold.

THE INFLUENCE OF THE ENVIRONMENT ON THE QUANTITY AND QUALITY OF THE MILK

Dana PUSTA, Ioan PAȘCA, Antonia ODAGIU, Roman MORAR, Carmen PUIA

Department of Animal Production and Food Safety,

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

phone +40 264 596 384; fax +40 264 593 792; e-mail: danapusta@yahoo.co.uk

SUMMARY

The purpose of the study was to observe the changes of the milk quantity and quality in cows exposed to solar radiation during the hot summer days.

The study was carried out in the period May-October 2000-2005 on groups of cows, belonging to Romanian Simental breed and bread in different conditions: on the pasture or in the stable.

There were also recorded the main meteorological parameters such as the temperature and the relative humidity, in order to calculate the Temperature Humidity Index (THI) and the intensity of solar radiation. We have to mention that in the whole studied period the value of THI in July and August was higher than 72, which is considered the limit of stress in cows. When the values of THI are higher than 72, different authors demonstrated that the cows are submitted to heat stress.

The determined parameters were: the total milk production to characterize the milk quantity and the conductivity, the protein, the lactose, the fat and the milk cells, to characterize the milk quality.

The influence of the caloric solar radiation on the milk production in cows was determined both in acute and chronic stress.

On this purpose it was measured the milk obtained from a group of cows belonging to Romanian Simental, during the III-rd and IV-th lactation, in the period May-September. It was encountered a decreasing of the total milk production with 26.46% in August, comparing to May ($p < 0.01$) which was considered the reference month, when the cows were started the grazing. The mean value of the milk production was of 9.06 l/capita ($\pm 0,358$) in cows exposed to the sun, compared to a mean value of 9.64 l/capita ($\pm 0,055$) in cows in stable, this representing a reduction of the milk production with 6.4% in a period of five days. The reduced milk production is correlated with THI values, between them being established a reverse proportional variation.

In cows exposed to sun it was recorded a reduction of the milk electric conductivity with 12.42% compared to the values obtained in the morning. This is due to the intensified perspiration in order to realise the thermolysis in warm environment and it is reverse proportionally correlated with THI values.

In cattle exposed to heat stress are recorded changes in milk composition, meaning the reducing in fat content (12,97%, $p < 0,05$) and in protein content (12,25%, $p < 0,05$). The mean values in August shown a reduction of fat content with 8.1% ($p < 0,05$) compared to the mean value for the lactation period. It was also recorded a reduction of the protein content with 5.5% ($p < 0,05$) compared to the mean value for the whole lactation period. The fat and the protein contents variation are close correlated with THI, between them being a reverse proportional relation.

The number of the somatic cells in milk is growing in cows exposed to caloric solar radiation, recording an increasing of 42.96% in August compared to May. The increased number of somatic cells is directly correlated with THI, the increasing of THI determining the increasing of the number of cells. For this reason when we analyse the number of cells to diagnose mammities we also have to take into account the presence or the absence of the heat stress.

In the end, based on the results obtained and presented in this paper we want to make the following recommendation to reduce or to eliminate the heat stress induced by the solar radiation in all the categories of cattle:

- they will be kept in stable during the day,

- they will have high level ventilation, green fodder, fresh water as much as they want, their access in paddocks have to be avoided in the period with maximum insolation.

The cows kept on pasture will have a grazing program avoiding the hours with high insolation, the cows will have fresh water as much as they want and shadow provided by bowers or by trees.

AGRICULTURE – THE LAST IAS

Daniela SIMTION*, Roxana LUCA**

* “Lucian Blaga” University of Sibiu, str. Oituz nr. 31, cod 550337, email: simtiondaniela@yahoo.com

** Economy Science Academy Bucharest

ABSTRACT

After a long period during which agriculture did not have a standard of its own and applied for that matter the IAS 2 rules regarding inventories; IAS 16 regarding property, plant and equipment and IAS 18 regarding revenues, one last standard is being born – IAS 41.

The late appearance of this standard is compensated by the great attention granted from the IASC, as agriculture is very important for those countries in course of development.

IAS 41 is operative for those financial statements starting with the 1 of January 2003.

The current standard is applied to account those elements regarding agricultural activities.

IAS 41 is does not deal: with genuine exploiting activities, with harvested agricultural products, which are non biological products, or with the agricultural production, which is incorporated in the processing process.

The activity will follow the financial reporting guidelines imposed by IAS 41 if:

- the plants or animals, that represent the object of the activities, are living and suitable for transformation.
- the change must be controlled, a fact which implies a range of activities like ground fertilizing and crop cultivation, feeding and medical assistance while breeding animals.
- there have to exist fundamentals for evaluating changes like: the degree at which plants ripen, the animals weight, the trees circumference.

The most important feature of this standard is the request for evaluating the biological assets at each balance sheet date at its fair value. Taking into consideration the limited framework of the current standard, beside of the explicit exceptions, all IAS must also be applied in agriculture.

THE DEVELOPMENT OF THE AGRICULTURE IN THE PREACCESSION PERIOD AND PREPARATIONS FOR THE ACCESSION IN ROMANIA

Daniela SIMTION*, Maria TĂNASE*, Roxana LUCA**, Cristina MOISE*,

* “Lucian Blaga” University of Sibiu, str. Oituz nr. 31, cod 550337, email: simtiondaniela@yahoo.com

** Economy Science Academy Bucharest

ABSTRACT

In the preaccession period the accent in agriculture and in the rural area was put on the identified priorities, such as: improving the processing and marketing structures of the agricultural and fish products, controlling the foods quality, but also the veterinary control, improving the infrastructure for the agricultural and rural development; the rural economy and human resources development. It was essential that integrated projects for rural development, that could be applied on commune level (NUTS 5), were financed, ensuring this way the prerequisites for a new entrepreneurial behaviour and for undertaking certain activities according to environmental requirements.

Taking into consideration the duties Romania has as a result of the engagements she assumed within the Accession Treaty to the EU, it is necessary to take each and every measurement regarding the institutional framework for using the funds for financing the Common Agricultural Policy.

As a result of the consultations that took place with the European Commission Experts an optimum solution was settled as found two payment agencies, which should administrate the supporting measurements financed from European funds, as well as the once financed from Romania's state budget.

IMPROVING MARKETABILITY OF INTEGRATED AND ORGANIC TOMATOES

Anita Silvana ILAK PERŠURIĆ, Milan OPLANIĆ, Dean BAN

The Institute for Agriculture and Tourism, C. Hugues 8, 52440 Poreč, Croatia, anita@iptpo.hr

Conventional agricultural production is denoted by high levels of chemisation, strait specialised production, high yields and low costs per production unit (Abdul-Baki, 1998; Shennan, 1992). However this production causes risky interventions, which could affect negatively on environment and human health (Bašić 1996). Research of Bulluck et al (2002), Elliot and Mumford (2002) and Ban (2001) indicate possibilities for growing vegetables in alternative systems, less risky for environment with satisfying economic success. The Croatian organic agriculture sector is still in an early stage of development but has recorded a very fast expansion over the last two years. Interest in organic agriculture is rapidly increasing among all actors: producers, NGOs, education and research organisations, businessmen and policy makers. According to the latest estimates by the Ministry of Agriculture, Croatia has some 7 000 hectares under organic management, managed by some 250, mostly family farms (Čulo 2005). Cereals seem to account for more than 50% of the total organic production in Croatia, while organic vegetable producers are rare. Achievements in farming practice, as well as a vast body of scientific evidence suggest that organic and other types of low-input farming can achieve a high degree of economic viability and environmental friendliness. Therefore it is expected that development scenarios comprising a substantial portion of organic and low-input farming exhibit equal or higher benefits for the national economy and national environmental account than the scenarios that have less area under such management regimes. It is presumed that these benefits are even greater if negative externalities associated with farm-upstream linked sectors were taken into account.

The aim of this research was to determine economic success of ecological, sustainable and conventional production of tomato in the Mediterranean area of Republic Croatia. Bilingual research was conducted during 2002/2003. During vegetation we examined parameters of growth, marketable yields and costs for materials, work and machinery which are used in economic analysis. Economical analysis of tomatoes production indicate worst results in ecological production system. Losses in tomatoes ecological production were consequences of two main factors: lower marketed yield and equal product price for all three production types. Lower yields in ecological production were expected, therefore bad financial results were caused by mainly low market prices, which do not validate quality and food safety. Therefore financial success is preconditioned by higher market validation of ecological products, which can be obtained through market analysis and product development.

Consumer awareness on organic agriculture is still very weak and this point requires further attention. The link between organic agriculture and the environment/nature protection is missing too. Health, fashion and ideological reasons, rather than nature and the environment are the driving forces for organic consumers. The current organic logo has never been promoted and is thus not well recognised by consumers. The purchase of organic food was especially influenced by the level of information and knowledge of consumers with reference to these products. Those with greater knowledge and information buy organic products more frequently. Doubts about the truthfulness and significance of some data were raised by main places where organic food is purchased, since an excessive greatest limitations are high prices and a low level of information to consumers. Current standard of life of most Croatian consumers does not permit them to purchase organic food products. At the same time, producers and distributors believe that consumers are badly and insufficiently informed about the characteristics of organic food. Finally it is unlikely that in the near future prices will fall significantly, therefore consumer education and improved marketing are considered as the main action for supporting the development of organic food markets in Croatia.

Key words: economic analysis, ecological, conventional, sustainable production, tomato.

RURAL DEVELOPMENT POSSIBILITIES IN THE CROATIAN-HUNGARIAN CROSS-BORDER REGIONS – RESULTS OF A SURVEY IN 2006

Ernő Kovács – Zsuzsanna Bacsi – Zsuzsanna Lőke

Pannon University Georgikon Faculty of Agriculture Keszthely

Tel.: +36/83/545-120, Fax: +36/83/545-181, email: h12725kov@ella.hu

ABSTRACT

A common problem of the border regions of Croatia and Hungary is the high rate of rural unemployment, and the relatively low capacity of income generation. This may lead to the decrease in rural population, especially the migration of the educated young people. One of the objectives of rural development is to stop this negative process, and to identify needs and possibilities to enhance the local economy utilising the opportunities of the borderline location. A survey was carried out in the spring of 2006 in the western border regions of Croatia and Hungary within the framework of an Interreg project by the Development and Multifunctional Association of the Keszthely-Hévíz Microregion (Hungary), The University of Pannonia, Georgikon Faculty of Agriculture Keszthely (Hungary) and

the College of Agriculture at Križevci (Croatia).

As a background to the survey the historical background of regional and rural development in Croatia and Hungary was reviewed, describing the similarities and differences of the present legal framework on national level, the administrative structure of the rural areas of the two countries (regions, counties, microregions). A questionnaire was designed for the actors involved in rural development to assess the main opportunities, advantages and difficulties related to the rural development situation in the two countries. Altogether 100 questionnaires were completed in Hungary and 100 in Croatia, in the cross-border counties, namely in counties Zala, Somogy and Baranya in Hungary, and in Koprivnica-Križevci, Međimurska, and Virovitica-Podravka in Croatia. Half of them were sent to business enterprises and the other half to local municipalities. Besides the questionnaire 15 interviews were made in Hungary and 15 in Croatia with typical entrepreneurs, town and village mayors, and representatives of the local administration. In the questionnaires and interviews we tried to assess the economic situation of the questioned actors, their main problems, chances for development, needs, and opinions of the achievements of the rural development policy in their countries. Emphasis was given to the aspects of cross-border relationships and the impacts of the EU accession (which is a fact for Hungary and future prospect for Croatia).

Main findings:

Although the questioned and interviewed respondents live in the vicinity of the Croatian-Hungarian border the majority do not have any relationships to the opposite side of the border. This is explained by language difficulties and the relatively low level of cooperation between the authorities. General problems on both sides of the border are the lack of job opportunities, the ageing population, the insufficient local infrastructure and the low level of competitiveness of the local businesses.

The respondents said that the most important task would be for the economic policy to develop the conditions of business activities (roads and transport facilities, development of SMEs and micro-enterprises) while the improvement of social conditions (development local public services, helping the integration of the minorities and the poor and especially the Roma population) seems to be only of secondary importance. Considering the opinions about the outcomes of rural development policy and the establishment of the rural development institutions the picture is rather controversial. Many problems were mentioned about the bureaucratic arrangements, the heavy administrative burdens, as well as the lack of experience regarding applications for funding and the lack of own resources. The respondents indicated that human resource development would be needed to enhance their project planning capacities, too. The respondents specifically mentioned the language problems, although more than two-third indicated their wish to extend the cross-border partnership linkages. For this the cooperation of the relevant authorities on the two sides of the border and the development of joint rural development projects would have a great impact.

EFFECTS OF APPLIED SUBSIDIZING MEASURES ON COMPETITION IN APPLE PRODUCTION OF BOSNIA AND HERZEGOVINA

M. Sc. Ferhat Čejvanović, Government of Brčko District of Bosnia and Herzegovina, Bulevar mira 1, 76100 Brčko, Bosnia and Herzegovina, e-mail: poljopom@teol.net

Dr. Zorica Vasiljević, Faculty of Agriculture, University of Belgrade, Nemanjina 6, 11080 Belgrade – Zemun, Serbia and Montenegro, e-mail: vazor@agrifaculty.bg.ac.yu

Dr. Dr. Vlade Zarić, Faculty of Agriculture, University of Belgrade, Nemanjina 6, 11080 Belgrade – Zemun, Serbia and Montenegro, e-mail: vzaric@agrifaculty.bg.ac.yu

Dr. Zorka Sredojević, Faculty of Agriculture, University of Belgrade, Nemanjina 6, 11080 Belgrade – Zemun, Serbia and Montenegro, e-mail: zokas@agrifaculty.bg.ac.yu

ABSTRACT

Subsidies in apple production represent one kind of agrarian policy measures that serve for improvement of fruit production in Bosnia and Herzegovina, in order to be reduced existing deficit as well as to be increased degree of self-sufficiency. Basic target of this paper is to examine are there some positive effects of the existing subsidizing measures onto fruit production, particularly at an example of apple production. In addition, analysis carried out in this research is aiming at pointing out both assessment of achieved positive results and negative implications of applied agrarian policy measures in Bosnia and Herzegovina (i.e. subsidizing in the case of new apple plantations). By application of appropriate economic analysis methods onto selected indicators of the state intervention in agriculture, in this paper it is carried out an assessment of advantages and limitations in cited subsidizing agrarian policy measures. The results of analysis could contribute to the comprehension of objective picture on agricultural sector position in Bosnia and Herzegovina within an international environment, as well as to a more adequate choice of those agrarian policy measures which will have the greatest effects onto fruit production increase and on degree of domestic demand satisfaction as well, and finally on substitution of import as well as decrease in the country balance of payments deficit.

Key words: Competition, fruit production, economic effects, subsidies, agrarian policy measures, Bosnia and Herzegovina

MONITORING AGRICULTURE OF TURKEY BEFORE ACCESSION PROCESS FOR EU MEMBERSHIP

Harun Uçak

Çukurova University, Faculty of Economics and Administrative Sciences, Department of Economics

Balcalı 01330 Adana/ Turkey, Tel: +90 532 677 85 34, +90 322 3387254/159, Fax: + 90 322 338 7284, Email: hucak@cu.edu.tr

ABSTRACT

In September 1st 1963, Turkey signed the Association Agreement with the European Economic Community (EEC), which led Turkey to Customs Union and eventually full membership. After four decades, Turkey launched its EU accession negotiations on 3 October 2005.

The EU is a major player in global agricultural trade and plays a leading role in establishing global trade agreements in the World Trade Organization (WTO). Agricultural products trade also has a significant place in Turkish international trade, with about 15 Billion USD-(8,2 Billion USD export and 6,4 billion import in 2005). If the negotiations between EU and Turkey will be concluded successfully, EU's role will be more effective in world agricultural trade. These process will be by Turkey's domestic market including 70 million population and neighbor markets where demand agricultural products. In addition, Turkey has recently high economic growth. By the expectations the same economics growths, the market will be more desirable.

Turkish agriculture will be facing difficulties in the transition period for full membership. In Turkey, 33 percent of the workforce is employed in agriculture and contributed about 12 percent of GDP. When these percents are compared with other countries in EU, it seems clearly that Turkey should do effective reforms to take workforce from agricultural sector to other sectors. However, the trend shows that the workforce percent in agriculture decreasing.

The reforms in both the CAP and Turkish agricultural policies will create opportunities and challenges during the transition period. In the longer run, Turkey will probably have a comparative advantage in field crops, fruits and vegetables while facing problems in the animal sector.

The paper presents Turkey's agricultural sector site in all economy in the process of negotiations for being a full member of EU. The negotiations about Turkish agricultural policy will be in a long way and pass difficult. It is expected that there will be structural change in Turkish agriculture for adaptation to CAP. There will be gains and losses for both Turkey and EU countries. But, in totally, it is expected the whole will gain by this partnership.

PHENOMENA PRODUCED BY THE INTERACTION BETWEEN SOLAR RADIATIONS AND THE VEGETAL COVER OF HOP PLANTS

H. Criveanu, Georgeta Țarălungă, Ioana Tănăsescu

Department of Physics and Agrometeorology, Faculty of Horticulture, University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, Romania, 1-3 Manastur str.3400 Cluj-Napoca

ABSTRACT

This paper presents the distribution of solar energy on vertical in the plants of hop, photosynthesis efficiency and the physical phenomena specific to the light in the leaves. The height of the plant was separated in three levels and then we have followed the distribution of the solar energy at every level. We've calculated the corresponding photosynthesis for every breed and level and we've proposed a model concerning the road of gleams in the interaction with a leaf.

EMPLOYABILITY IN RURAL AREAS OF SOUTH BOHEMIA REGION

Faltová Leitmanová IVANA

Department of Economy, University of South Bohemia České Budějovice, e-mail address: leitman@zf.jcu.cz

ABSTRACT

An exploitation of limited resources with satiation unlimited needs requires economical and rational behaviour of economic subjects. From the regional standpoint it means, among others, that the rural territory mustn't be merely economically uninteresting surroundings of municipal seats. Countryside disposes of resources, whose wasting is for each economy, at least in context of sustainable development, non - permissible. The following essay deals with some aspects of exploitation of one from the source - labour production factor - in rural regions of the South Bohemia region.

INCOME OF CONVENTIONAL AND ORGANIC BEEKEEPING IN WEST HERZEGOVINA

Janja Kezić, Martina Ivanković, Lidija Svečnjak, Dragan Bubalo, Zoran Grgić,

Faculty of Agriculture University of Zagreb, Svetošimunska 25

ABSTRACT

Beekeeping in west Herzegovina is developed and bee products have high quality. On the initiative of beekeepers was organized study to define present situation in beekeeping, in the frame of Beekeepers Association from Ljubuški, Čapljina and Neum. In total 17 beekeepers filled special questionnaires including socio-economical parameters, states of beekeepers cooperative and SWOT analyses of present beekeeping situation and interest for cooperative.

Mathematical and statistical models showed from questionnaires that most of beekeepers that have 25 – 30 kg of honey per hive have high income (600 – 800 kn) with profit 1000 – 1200 kn.

Beekeeper showed low motivation for organic production because requires more expenses without extra incomes according to the possible higher price. They would consider organic production or joining the Beekeepers cooperative only in terms of no expected fall of redemption price of honey. Joining the Beekeepers cooperative is possible for common honey processing facilities but only when the selling conditions are disturbed.

SWOT analysis showed as strengths high price of honey and good production of honey per hive. Weaknesses are small number of hives per beekeeper and stationary beekeeping. As opportunities beekeepers pointed out increase of honey yield per hive and increase number of hives. Possible disturbance in sales market and insufficient agricultural politics, especially if competition of open market appears, has showed as threats.

TERRITORIAL APPROACH AS INITIAL POINT FOR RURAL DEVELOPMENT PLANNING

dr.sc. Jasenka Kranjčević, dipl.ing.arh.

ABSTRACT

Rural areas and rural municipalities have been exposed to different and numerous pressures for years, mainly due to changed economic conditions and social modernisation processes. Rural municipalities and rural areas are expected to be competitive on the market, to respect principles of sustainable development and at the same time their space should successfully fulfil more and more different functions (multifunctionality). Therefore it seems justified to pose the question to what extent will the space change by fulfilling these requirements?

In fact, the resource *space* is constantly changing, and so is its meaning. If we consider only the influence that technological progress in agriculture has on the space (this progress has caused social and economic changes), significant changes are visible. Because of technological progress rural space has become more accessible and is being increasingly used as space for entertainment and/or relaxation. Vital location factors of settlements (accessibility of land, water, defence security, etc.) are losing in importance for users and residents of rural areas, and the latter are more concentrated on aspects such as market, rents, costs of built land, rest, education, natural and cultural heritage conservation, environmental protection, etc. More and more elements of urban life are integrated into villages and rural areas, whereas differences between the ways of life in villages and towns are decreasing. Therefore we may say that villages are getting increasingly urbanised and are losing their traditional characteristics.

Knowledge about the value of space, in due degree, is relatively recent and emerges after the knowledge about the growing threats

to it. *Space* as a resource is gaining growing significance and value (economic, ecologic and aesthetic) at the local, regional, national and European level. Because of numerous historic, economic, social and cultural differences, no common criteria have been established neither in Europe nor in Croatia monitor changes in rural areas from the ecologic and aesthetic points of view. In statistical terms, data on the state in space are presented through demographic data, unemployment rate, quantity of agricultural production etc.

It is a fact that the functions of the village and of rural areas are changing. Their agricultural function as a basic economic branch loses in significance, although it dominates in terms of surface and occurrence in space, whereas their residential and tourism functions have been gaining significance.

Although tourism, on the one hand, presents bigger flexibility in relation to agriculture, on the other hand it has bigger requirements on space (surface area of land plots, size of buildings) and its transformation. An interesting piece of information is that, growing living standard in villages causes growth in the surface and volume of residential and economic buildings, and building areas in villages are increasing, although statistically a decrease in the population number is observed. With regard to tourism development we can say that the aspect related to spatial planning and architecture (aesthetic value) plays an important role for the determination of the value of space. In rural areas land that is designated as building land has higher market value.

Despite the fact that rural areas represent a renewable finite natural resource, the possibility of this resource to meet the growing demands of agriculture, housing and tourism is nevertheless uncertain?

The economic, ecologic and aesthetic value of space can decrease through by inadequate and illegal construction, construction of communications, energy facilities, exploitation of natural resources, on water demesne, inappropriate agricultural activities (cutting of trees and forests, single-crop farming, inadequate land consolidation, etc.), etc.

Due to the growing domination of the residential and tourism function on the one hand, and the growing ecological requirements on the environment on the other, construction of infrastructure (water supply, sewage, gas, roads, waste water treatment, waste disposal sites, etc.) becomes for rural municipalities a major financial pressure. Many smaller rural municipalities are not able to overcome the increasing requirements with their own forces and they need help. Solutions can be sought in various forms of intermunicipal cooperation (construction of major infrastructure facilities).

The aim of rural development is to create equal conditions with regard to quality of life (working and rest) in the entire area. Rural areas are expected to create a sense of comfort for people, cultural life and attractive environment for living, work and rest. Also vicinity of the workplace is required, and the local community (government and self-government) is expected to provide a number of quality services (good equipment with social and technical infrastructure and services).

If rural development planning is based only on an economic or social approach, without including the territorial approach, it can cause negative changes in space. It is therefore important to monitor the state and changes as well as trends in space. The territorial approach applied in rural development planning can play an important role for creating quality changes and can be a connection between different sectors (tourism, agriculture, environmental protection, etc.). The territorial approach does not imply only the development and adoption of spatial plans, but also a high civilisational level, which among others includes consideration of different spatial values (economic, ecologic and aesthetic). The territorial approach needs to be connected with real social, economic, cultural and political changes.

THE EVALUATION OF SELECTED AGRO-TOURIST FARMS IN POLAND IN KUJAWY-POMORZE REGION

JERZY NOWACHOWICZ, GRAŻYNA MICHALSKA, PRZEMYSŁAW DARIUSZ WASILEWSKI, TOMASZ BUCEK, MONIKA SZALA

University of Technology and Agriculture in Bydgoszcz, Faculty of Animal Production, Department of Animal Products Evaluation
ul. Ks. Kordeckiego 20, 85-225 Bydgoszcz, Poland, tel. +48 52 374 93 07, e-mail: surzwierz@atr.bydgoszcz.pl

ABSTRACT

The aim of presented paper was evaluation of selected agro-tourist farms in Poland in Kujawy-Pomorze region regarding to accommodation standard, food and offered services.

In many European countries, including Poland, incomings from farming are not enough to ensure appropriate living standard of the whole family. Along with deterioration of farmers' economical situation agro-tourism may be additional source of incomings for rural families.

Poland is predisposed to develop the agro-tourism, especially in low-level industrialization and urbanization areas, small employment share in non-agricultural professions, low-agricultural (small and medium size farms of limited intensivity of agricultural production), with high unemployment, not high people's incomings, having simultaneously free residential resources, favourable environmentally-landscape and cultural virtues. Kujawy-Pomorze Province is situated in the Middle-Northern part of Poland in

the area of Pojezierze Południowobałtyckie. It is one of 16 provinces (Bydgoszcz is a capital city), where the unemployment level reaches 21.6% and is higher from average value in the country of 17.2% (data from the end of April 2006). Kujawy-Pomorze region with the richness of landscape beauty and offered tourist base may create favourable conditions to agro-tourism development.

The research covered 10 agro-tourist farms situated in Kujawy-Pomorze region, 5 were located in Żnin administrative unit and 5 in Golub-Dobrzyń administrative unit. The evaluation of accommodation standard, food and offered services in tested agro-tourist farms was done on the basis of the questionnaire-polls addressed to owners of these farms and guests who were there staying. The poll was done in July and August 2005. It had a few dozen questions, one answer should be chosen from some answers. Accommodation and food could be graded as very good, good, satisfactory and unsatisfactory. Asked people could express their opinion of what should be changed or added to raise accommodation and food standard and increase attractiveness of offered agro-tourist services.

Tested farms started function as agro-tourist farms not so long time ago. The oldest farm began its operation in year 1994 and the remaining later. The most farms (30%) function from year 2000. The area of tested agro-tourist farms is diversified and shapes from 0.8 up to 69.7 ha. They are led by medium-educated (50%) and high-educated (20%) persons.

Farms offer from 2 up to 5 rooms to rent, amount of vacancies is diversified from 6 up to 25. In tested farms during year from 20 up to 300 persons were staying. Rental of the rooms was half-seasonal and in 50% defined as permanent. The most frequently time of staying asked tourist in a farm was 1 week. Food was offered to asked tourist in 90% of tested farms and 88% asked tourist used it. The price for a day with a full board for a 1 person was from 20 up to 75 PLN, thus was attractive as compared to another ways of rest. Among tourist 70% had full-board (3 meals) in 40% prepared from products coming from the farm. Own vegetables (in 70%) and poultry were used. Among respondents 84% thought that meals are varied and 68% that they are rich in all nutritional components. Most asked tourist making up 60% stated that accommodation and food standard is good. Among tested respondents 12 and 20% graded accommodation and food as very good. In connection with this there is a lot to do in that case because some tourists expect more luxury accommodation conditions and 36% of asked persons wish more meat in offered meals. In a half of tested agro-tourist farms guests asked for a typical country-like food and 30% did not report any suggestions concerning meals.

Among tested respondents 60% appreciated nice atmosphere and professional service and 80% asked persons would recommend agro-tourist farm where they were staying to their acquaintances. Staying in agro-tourist farm was the new way of rest because 64% persons chose it for first time.

Among people who were resting in agro-tourist farms the majority stated persons coming from small towns. They chosen these farms to find quiet and peace. The majority of the owners of tested agro-tourist farms in the future would like to increase the attractiveness of their offer. They plan the development of farms by animal purchase, especially increase the amount of horses, increase the amount of rooms, purchase of bicycles and kayaks, sauna build, prepare farms for disabled persons.

Summarising obtained results it should be stated that in tested agro-tourist farms majority of asked persons composed 60% graded accommodation and food standard as good. This case should be improved because the development of agro-tourism is done in the most attractive regions, where favourable environmentally virtues with high accommodation and food standard are connected.

THE INFLUENCE OF MANAGEMENT ON MOUNTAIN MEADOWS SECONDARY GRASSLAND PRESERVATION.

SUCHÝ Karel¹, KLIMEŠ František¹, KOBES Milan¹, VOŽENÍLKOVÁ Bohumila¹ and KVĚT Jan^{2,3}.

¹University of South Bohemia, Faculty of Agriculture, Studentská 13, 370 05 České Budějovice, Czech Republic

²University of South Bohemia, Faculty of Biological Sciences, Branišovská 31, 370 05 České Budějovice, Czech Republic

³Institute of Systems Biology and Ecology, Czech Ac.Sci., Dukelská 145, CZ-379 01 Třeboň, Czech Republic

Email:suchy@zf.jcu.cz

ABSTRACT

In the 20th century the Šumava mountains (Bohemian Forest), extending c. 240 km along the Czech-German-Austrian border, was part of the "Iron Curtain", and large areas of it were stripped of human settlement. In 1991 The Šumava National Park was founded and it also belongs to the biosphere reserve. Small interest in agriculture under less favourable natural conditions is one of the phenomena related to political changes in Central Europe at the end of the last century. As a result, extensive areas of meadows and pastures have been abandoned and lay fallow. The existence and quality of secondary grassland fully depend on human management. New alternative practices of non-profit grassland management are necessary to preserve the natural values, biodiversity and characteristic appearance of secondary grassland in a seminatural mountain landscape. In the conformity with these aims the following results are presented.

The investigation was carried out in controlled experiments. The biomass production and management influence on phytocoenological composition and dynamics were evaluated. The experimental site Zhůří in the Šumava Mts. (association *Trifolio-Festucetum*

rubrae Oberdorfer 1957). was situated at an altitude of 1150–1180 m with relatively harsh climate. In the experiments, three treatments (mowing, mulching, fallow) were imposed with three replicates per treatment. In 2000–2003 the aboveground primary biomass production was determined by small quadrats (0.25 m²) samples method with four replications in each plot.

Cover degree of the grass species (in 1997–2003) was estimated in mid-July of each year (prior to mowing or mulching of the treatments).

The average aboveground dry matter production was in accordance with assumption highest in mulching treatment 297.5 g .m⁻² (2.975 t.ha⁻¹).

In the mulched treatment, a trend in a reduction in *Festuca rubra* to 20-30 % D (% D = projective dominance) was recorded especially owing to the fungal attack. An increased attack by *Fusarium* fungi found in the mulched treatment and an even more severe attack on unharvested *F. rubra* created worse conditions for subsequent fodder crop production in the future.

In the unharvested treatment (fallow), *F. rubra* also showed the greatest decrease of coverage from the original value of 30-40 % D to only 3-6 % D. Aboveground dry matter production obtained was 263 g.m⁻² (2.630 t.ha⁻¹).

Positive influence was proved under the conditions of one-cut regime where biomass production was lower i.e. 255.1 g.m⁻² (2.551 t.ha⁻¹) but coverage of *F. rubra* increases from 30 % D to 50 % D.

The results showed that versatile exploitation and preservation of permanent grassland with dominant *Festuca rubra* was provided with regular mowing. Especially in mountain conditions in mezooligotrophic stands, one-cut regime is sufficient. In mezotrophic stands, two-cut regime is needed.

RURAL CREDIT IN THE TRANSITION ECONOMIES OF CENTRAL AND EASTERN EUROPE: A REVIEW OF NEEDS, PROVISIONS, AND PROSPECTS

Dr Keith Howe and Martin Turner

Centre for Rural Research, University of Exeter, UK

ABSTRACT

The paper is based on an empirical review of rural credit and micro-finance that formed part of an EU Sixth Framework project. Initiated and supported by the European Commission (DG Research and DG Agriculture), the objective of the CEEC AGRI POLICY project is to create a network of experts involved in agricultural policy analysis and to inform the European Commission. In our recent study, the development of credit sources and assessments of their adequacy were made for the new member states, the candidate countries and other countries of the Western Balkans.

Agricultural and, more widely, rural credit provision is identified as an area of crucial importance in addressing national adjustment problems in both developing and post-socialist transition economies. Though credit is obtained for different specific purposes and for different periods of time, its essential function is to provide economic agents such as farmers, other rural entrepreneurs, and traders with the means to conduct their business in advance of financial returns that cover their costs and generate profits. Generally, the importance of credit rises in line with a country's overall level of economic development. In mainly agrarian countries, rural credit is relatively less important in the early stages of reform and economic transformation. Then, the principal economic flows during the course of production, exchange and distribution tend to involve quite modest engagement with local input and product markets. But, as such countries develop, economic activity becomes more complex and its agents more interdependent both within the rural sector itself and between it and other sectors of the economy. At that stage rural credit assumes much greater importance. For example, typically more purchased inputs are now used, and rural economic activity becomes more dependent on transactions with diversified national and even international input and product markets. Moreover, market-oriented reforms can erode rural entrepreneurs' own capital base, thus making access to borrowing much more essential.

Marketisation of economic activity and the accompanying need for credit provision is similarly characteristic of post-socialist transition economies, though with special features. Modernisation in terms of the allocation, supplementation and organisation of rural resources, including institutional structures (e.g. property rights) that accompany it, are key considerations. Macro-economic stability, security of property rights, education in the ways market economies function, and elimination of corruption are amongst the main pre-requisites for the successful operation of credit markets. Under appropriate conditions, they have a major role to play in stimulating economic growth, flexibility and efficiency. In that sense, the initial economic conditions are crucially important, along with the political environment that sustains them.

Most developing and post-socialist transition economies implement specialist agricultural credit programmes typified by:

- Preferential credit rates, or interest rate subsidies
- State guarantees on commercial credit facilities
- Specialist rural credit institutions
- Debt rescheduling, including restructuring or write-off

Set in this overall context, the paper appraises the experience of agricultural producers and rural entrepreneurs in mainly central and eastern Europe since around 1990. It does so against a backdrop of both economic principles and practical experience of credit provision and use in agriculture and the wider rural sector. The challenge of preparing the rural economies of such countries for greater competition, both within an enlarged European Union and against the background of developments in world trade, was widely expected to have substantial impacts on their agricultural sectors and wider rural economies. The study charts the nature of the policy and institutional developments that have already taken place in the countries concerned. Importantly, it also shows that in many respects further substantial changes are required if the rural areas are not to be critically disadvantaged in the ongoing process of economic transition. Following review of the characteristics necessary for successful rural credit and micro-finance initiatives, the paper concludes with a discussion and prognosis for policy priorities in relation to rural credit for the next few years.

THE VALORISATION OF THE AGRICULTURAL ENVIRONMENTAL PROTECTION IN HUNGARY

Kinga ODOR, *PhD Student*

University of Debrecen, Centre for Agricultural Sciences

Faculty of Agricultural Economics and Rural Development, Department of General and Agricultural Economics

Telephone/Fax: +36-06-52-508-482, e-mail: odor@agr.unideb.hu

The aim of my study is to present the changes taking place in the agricultural farming in the area of environmental protection in Hungary in the last century and what were the factors to induce these changes.

The change of political regimes brought about remarkable proprietary and production structural changes in the agriculture of Hungary. As for environmental protection these had both favourable and unfavourable effects.

In the current regulations environmental protection has been given more attention, which is reflected in the 1995. LIII. Law on the general rules of the protection of environment and the 1996. LIII Law on the protection of nature. These allow a proper level of subsidy on activities protecting the environment, nature and regions.

On the way to sustainable development, more precisely sustainable agricultural development the fact that agricultural environmental protection has got to the limelight is a remarkable step. Plans and projects have been worked out to form and materialize the agricultural environmental protection objects. The National Agricultural Environmental Protection Program (NAEPP) introduced in 2002 was successful and popular. Both the institutional and the farming parties had some experience on the subsidiary and tender system of the agricultural environmental farming. The major objectives of NAEPP were integrated in the agricultural environmental farming provisions of the National Rural Development Plan (NRDP) introduced in 2004 and since financial resources are ampler in this plan, the prosperity of the Plan is expected. At present the National Agricultural Rural Development Strategy for the period of 2007-2013 is being elaborated that is expected to give an even more emphasised role to agricultural environmental protection. The success of home agricultural environmental farming programs greatly depends on the effectiveness of the institutional system. In this area there are still deficiencies, thus its future development is an indispensable obligation.

On the one hand, in my study I present the outcome of the National Agricultural Environmental Protection Program in the period of 2002-2004, on the other hand, I introduce the options on the field of agricultural environmental protection provided by the National Rural Development Plan.

EVALUATION OF THE MULTIFUNCTIONALITY OF AGRICULTURAL AREAS AS PART OF AN INTEGRATED LAND USE PLANNING APPROACH

Klaus WAGNER

Federal Institute of Agricultural Economics, Marxergasse 2, 1030 Vienna

+43 1 8773651 7428, klaus.wagner@awi.bmlfuw.gv.at, www.awi.bmlfuw.gv.at

The report is about results of the INTERREG IIIB project "Integrated Land Use Planning" which has the focus on cooperation between agriculture, forestry, spatial planning and water management to achieve an integrated and well adapted land use which avoids natural hazards.

The project region of the river Ybbs basin in Austria – arm of the Danube - includes very different natural conditions. The agriculture is confronted with them not only in terms of production of food and raw material but also in the effects on the resource protection, the hazard conditions, the diversity, the recreation concerns and the spatial structuring effects. In four communities, representing the different natural conditions of the basin, an evaluation of these different functions of agricultural areas has been worked out in a regional scale. Indicators have been for instance the soil conditions, the equipment with landscape elements, shares of different

crops, different kinds of borderlines. The results of this multifunctional approach show the very different situation the authorities have to cope with in the different subregions of the basin. We learned that the production is often not the most important function of agriculture. E.g. in some subregions the function of production is given only a low value while all the other functions are estimated very valuable. In this case the agriculture or at least open space is of high importance for the society. If the agricultural land use disappears, other solutions have to be found to keep the functions, especially the one of recreation near settlements or to keep the open space for unhindered water run-off. The different patterns of these function-values in an agricultural view are a starting point to discuss strengths, deficits, threats or priorities of a sustainable and integrated development together with other sectors like forestry, water management and spatial planning. In this way the quality and sustainability of life in rural areas could be improved. A comparison of the recent land use with the land use in the 19th century shows that the functions changed a lot in different directions. In some regions the development goes towards a better environmental situation, in others the natural potential decreases. The evaluation of it gives more awareness about the different functions of agriculture and justifies a specific agricultural land use.

THE IMPACT OF AGROTOURISM ON AGRICULTURAL PRODUCTION

KRISTINA BRŠČIĆ

Institute of Agriculture and Tourism, Department of Economics and Agriculture Development, Croatia, Poreč, K.Huguesa 8
Tel. 052-408-303, Fax. 052-431-659, kristina@iptpo.hr

Agrotourism as a selective form of tourism which take place within the family farm represents a specific form of business with the multiple impacts on the socio-economic relation and the space in rural areas. Through the analysis of secondary source or desk research and information obtained by primary research the paper is seeks to get the answer on the question does agrotourism have impact on the increase of agricultural production in the region where is taking place. A primary research was carried out in Istrian county, our most developed tourist region, as well as region where agrotourism first starts to develop and where is the largest number of agrotourism households in Croatia. Research was carrying out by method of interview during August of the year 2002. on the sample of 43 agrotourism households. According to the obtained results it could be concluded that the development of agrotourism activities have not significant influence on the increase of agricultural production within agrotourism households. Moreover, the owners of agrotourism households in the next few years are not planning, significantly, to increase the agricultural production. Increasing number of specialized agricultural producers, particularly the producers of wines and prosciutto, then brandy, honey and others agricultural products can not be directly related with the development of agrotourism.

PROJECTS AND PRIORITIES OF RURAL DEVELOPMENT

KRISTINA SVRŽNJAK, SANDRA KANTAR, DEJAN MARENČIĆ

Visoko gospodarsko učilište, Križevci
Tel. (048) 279-205, fax. (048) 682-790, ksvrznjak@vguk.hr

ABSTRACT

College of agriculture at Križevci conducted a survey within Interreg project *Croatian –Hungarian Cross-Border Regional Features*, to identify possibilities, projects and institutional preconditions required for realization of programs for rural development promotion in regional level, namely in region of three county: Koprivničko-križevačka, Međimurska and Virovitičko-podravska county. Research includes the profit and non-profit organisations, whose activities influence on rural development of local self-government.

First part of this paper gives the overview toward actual problems of organisation in survey research, and emphasis the most important changes required for theirs future development. After that, suggestions and goals of the project connected with rural development have been analyzed. These suggestions and goals will be initiated by the organizations on local level. Relating to project ideas, the paper offers the review of total financial resources required for their realization, and also the proportion of own and other investments. Considering that questions of project ideas as open question in survey, we got “the whole panoply” of direct and indirect answers about possibilities in rural development. Therefore, in last part of paper, answers about the most important priorities and preconditions for rural development promotion on regional level (closed type of question) have been analyzed, too.

COMPETITIVENESS OF REGIONS AND STRATEGIC MANAGEMENT

doc. Ing. Rolínek LADISLAV, Ph.D., Ing. Řehoř PETR

South Bohemia University in České Budějovice

Agricultural Faculty, Department of Management

Tel.: +420387772488, +420387772495, Fax: +420387772486, E-mail: rolinek@zf.jcu.cz, rehor@zf.jcu.cz

ABSTRACT

The aim of this paper is to outline the substance of strategic management in relation to regional development with focus on basic indicators that evaluate regional competitiveness.

Strategic management presents the collection of methods and access that are applicable to regulation of regional development. Basic requirement of this process is to increase competitiveness of regions. Strategic management is the top management of regional development (organization) as a whole in long time horizon. Model that shows the substance of described process of strategic management and in fact also the substance of his implementation to the area of regional development is possible to express by the help of its components. To those belong e.g. the next:

- definition of mission of regional development – it depends on visions, values and expectation,
- definition of aims and strategies. The main aims are for example social regional development, infrastructure development, improvement of ecological life aspects of inhabitants, better territorial distribution of economic activities in region etc.

In applying of strategic management we follow in the frame of regional development (like in case its application in company sphere) rising efficiency of regions and regional competitiveness.

Regional competitiveness is possible define like ability of regions to generate revenues and keep employment rate on level corresponding to national and international competition.

The level of regional competitiveness is measurable for example by index GDP on inhabitant. It is possible except this indicator to use also evaluation of labour productivity expressed like GDP on employee as well as share of employable to total of the number of economically active population. GDP on inhabitant is possible specify next relation:

$$\frac{\text{GDP}}{\text{Popul}} = \frac{\text{GDP}}{\text{Employable}} * \frac{\text{Employable}}{\text{EAI}} * \frac{\text{EAI}}{\text{Popul}}$$

GDP	Gross domestic product
Popul.	Number of the population
Employable	Number of employable in national economy
EAI	Economically active population

The last element of mentioned relation is difficulty governable from the view of regional management. There are from this reason key for the productivity of labour expressed by the help of GDP on employee and total number of employees to the number of economically active population. Competitive region is from this view then such that has relatively high level of productivity and high number of employable. Relationship between those indicators is in long-time period complementary.

These indicators are monitored and compared among Czech Republic, its regions and countries of European Union in article.

THE FERTILITY STATE OF THE SOILS POLLUTED WITH HEAVY METALS

Laura Paulette, A. Todoran, I. Oroian

University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca

ABSTRACT

Zlatna area from Romania is very well known as an industrial polluted area, the main polluting sources have been represented by the Ampelum A.S., C.S., a non-ferrous metal processing factory and Mining Exploitation, which by its activity gave off in the atmosphere heavy metals (Pb, Cu, Zn, Cd) as a fine powder and aerosols, silica dioxide and gases (sulfur dioxide, carbon dioxide, carbon monoxide, nitrogen oxides). The affected area is about 10 km upstream and 30 km downstream around the Zlatna town. The heavy metals are accumulated and concentrated in the soil, water and vegetation and acid rains with sulfur dioxide affected the vegetation leading to the appearance on the large surfaces of the erosion phenomenon. Even after the complete shut down of the

smelter two years ago, the level of the accumulations are still high in the soils because these elements are not leaching out from the soil profiles and are accumulated and bound to the soil compounds.

In our research we have looking to determine the total content of heavy metals (Pb, Cu, Zn and Cd), their effect on the soils properties, the heavy metals translocation in plants and the soil evaluations.

The results shows up that there are some modification of the soils properties, such as the acidification and depletion of bases, low content of total nitrogen, qualitative and quantitative reduction of organic matter, enrichment in coarse separates and high total content of heavy metals, especially lead, cooper and zinc, at the level which overpass the maximum tolerated limits.

At the plants level the heavy metal accumulations are differentiated by the total content in soil, species and by organ.

From evaluation point of view, the favourability categories in our country consist in 5 categories, differentiated by marks level. According to those, the soil recommendation in use related to evaluation marks obtained clearly show the restrained assortment of culture to be used.

Even at the low level of pollution, the soils can be included in a lower category of fertility with implication in soil recommendation for agricultural use and also in establishing the taxes applied on soil, which in our country are differentiated according to category of fertility.

POLICY PRACTICE VS. PUBLIC PERCEPTION: DOES THE SUPPORT FOR MULTIFUNCTIONAL AGRICULTURE IN SLOVENIA DELIVER THE RIGHT THING?

Juvančič Luka ^a, Renata Slabe Erker ^b

^a Corresponding author. University of Ljubljana, Biotechnical faculty, Zootechnical department, Chair for Agricultural Economics, Policy and Law, Groblje 3, SI-1230 Domzale, Slovenia. Tel. + 386 1 72 17 925; Fax: + 386 1 72 41 005. E-mail: luka.juvancic@bfro.uni-lj.si

^b Institute for Economic Research, Kardeljeva ploščad 17, SI-1000 Ljubljana, Slovenia.

ABSTRACT

Multifunctionality is often regarded as a “new paradigm” of the Common Agricultural Policy of the EU (CAP). Considering the fact that the stakes on the policy agenda attributed to the multifunctionality concept are high, it is surprising that the balance of consumer preferences for commodity and non-commodity outputs is seldom formally checked, leaving a sense of doubt whether the policies deliver the goods and services of multifunctional agriculture according to the public demand. This is even more so since many of these demands (e.g. food safety, food quality, natural conservation, and countryside preservation) are contradictory.

The paper deals with the question about the role of public preferences in policy design. The research community usually attempts to quantify the (monetary) ‘social’ valuations of various attributes of multifunctional agriculture. However, the application of various valuation methods can lead to misguiding results if the demand for these attributes is implicitly assumed to be rooted in the existing policies. This paper takes one step backwards. It attempts to identify and rank the attributes that characterise the public perception of multifunctional agriculture. It aims to confront its findings with the existing policy practice.

Slovenia is chosen as a case for analysis. With respect to widespread policy mechanisms and considerable public funds attributed to various attributes of multifunctional agriculture, it appears that the demand for multifunctional agriculture in Slovenia is high and concentrated primarily to the issues of countryside preservation and natural protection. The paper attempts to check to what extent the existing policy practice meets the public expectations from agriculture. Furthermore, it tackles the issue of expenditures necessary for maintaining the desired level attributes of multifunctional agriculture that are most relevant to the public. Alternative ways of financing are checked for each of these attributes: by market provision (implicitly indicating the willingness to pay), via policy interventions or as a combination of both.

An internet-based survey was conducted to tackle the above research questions. In order to involve various stakeholders interested in different aspects of multifunctional agriculture (consisting of governmental and non-governmental institutions dealing with agriculture, environment and consumer issues), the survey hosted on their web pages. Apart from the segment dealing with socio-economic profile of respondents, the survey consisted of three parts dealing with: (i) attitude towards agriculture and its multiple functions; (ii) perception of problems confronted by agriculture and identification of new products and services that can be provided by agriculture, and (iii) competences for carrying out the public-relevant functions of agriculture and their financing.

The number of valid responses is 441. Due to (mainly) ordinal scale of responses, statistical significance of findings will be tested by various non-parametric methods. The paper intends to present the main findings of the survey. These findings will be confronted with the existing policies dealing with different attributes of multifunctional agriculture in Slovenia.

DEVELOPMENT OF A PLANT TEST SYSTEM FOR EVALUATION OF THE TOXICITY OF METAL CONTAMINATED SOILS

Lyubka KOLEVA, Malgozata BEROVA, Nevena STOEVA, Nanko POPOV, Andon VASSILEV

Department of Plant Physiology and Biochemistry, Agricultural University of Plovdiv, 12 Mendeleev St., 4000 Plovdiv, Bulgaria
e-mail: a_vasilev2001@yahoo.com

ABSTRACT

Soil contamination by heavy metals is a serious problem all over the world. Therefore, significant research efforts are now addressing different approaches allowing sustainable management of the contaminated soils. The choice of a suitable strategy depends on many factors, including the risk presenting by these soils.

The commonly used physico-chemical analyses of soil metal content are not enough representative for the environmental risk evaluation as they do not directly address biological availability and metal toxicity. Therefore, biological evaluation tests should complement the former analyses.

Several plant test systems have been developed using as criteria both growth responses and an induction of metal-responsive enzyme of plants grown on contaminated soils. However, the phytotoxicity database provides significant information that some photosynthetic parameters, such as leaf gas exchange and chlorophyll fluorescence, could be good candidates for metal phytotoxicity measures. They are sensitive enough to heavy metal stress and, in addition, are nondestructive and easy for measurement.

The aim of this study was to develop such plant test system involving both growth and photosynthetic parameters. Accordingly, we conducted three-steps study using different experimental designs at controlled conditions, namely: (1) evaluation of species sensitivity (maize, bean, cucumber, radish) to complex heavy metal stress (Cd, Zn and Cu) as well as their suitability for this bioassay; (2) evaluation of the sensitivity of chosen (cucumber and bean) species to different rates of single and complex metal contamination; (3) scaling of the growth and photosynthetic responses of metal-exposed plants into four groups presenting the following classification of the contaminated soils – nontoxic, slightly toxic, moderately toxic and strongly toxic. The results obtained in the study will be presented and discussed.

KEY WORDS: heavy metals, environmental risk assessment, plant test system, and leaf gas exchange, chlorophyll fluorescence

INTERDISCIPLINARY COOPERATION IN REGIONAL DEVELOPMENT ON AN EXAMPLE OF AGRICULTURE AND TOURISM

Magdalena HRABÁNKOVÁ, Dagmar ŠKODOVÁ PARMOVÁ

Zemědělská fakulta, Jihočeské univerzity v Českých Budějovicích
Studentská 13, CZ-370 05 České Budějovice, Czech Republic
Tel.: +420 387 772 428, +420 387 772 489 Fax: +420 387 772 486, e-mail: parmova@zf.jcu.cz

ABSTRACT

Recent situation in the rural area of the Czech Republic reflect huge changes due to transformation of the Czech economy in last years and EU accession in 2004. There are not only interventions in the property relations according to transformation and restitution processes in the rural area, but some agricultural firms stopped their production, mainly in LFAs. The position of firms remaining in such areas is difficult. One possibility is to diversify the production and offer tourism services. The firms can get even subsidies on activities like farm holidays, production of local traditional gifts. The possible support depends very closely on the project activity of particular firm.

KEY WORDS: agricultural firms, diversification of activities, tourism, farm holidays

PHYSIOLOGICAL CHANGES IN BEAN (*PHASEOLUS VULGARIS* L.) LEAVES, INFECTED BY THE MOST IMPORTANT BEAN DISEASES

Malgojata BEROVA¹, Nevena STOEVA¹, Zlatko ZLATEV¹, Tzvetelina STOILOVA², Peter CHAVDAROV²,

¹Agricultural University, Department of Plant Physiology and Biochemistry, 12 Mendeleev Str., Plovdiv, Bulgaria

² Institute of Plant Genetic Resources – Sadovo, Bulgaria

e-mail: maberova@abv.bg

ABSTRACT

Gas-exchange, plastid pigments and some other physiological parameters were determined in bean (*Phaseolus vulgaris* L. local and introduction forms) leaves naturally infected by *Xanthomonas campestris* pv. *phaseoli* (Smith) and *Pseudomonas syringae* pv. *phaseolicola* (Bukholder), and in healthy leaves (control).

It was established that infected leaves had higher water content and leaf thickening as well as lower both plastid pigment content and photosynthetic rate.

Key words: bean (*Phaseolus vulgaris* L.), *Xanthomonas campestris* pv. *phaseoli* (Smith), *Pseudomonas syringae* pv. *phaseolicola* (Bukholder), leaf gas-exchange, plastid pigments, water content, leaf thickening

THE TECHNOLOGICAL FACTORS OF PROCESSING IMPACT ON THE FOOD SAFETY IN THE MEAT INDUSTRY FIELDS

MANEA IULIANA, MANEA LAUR

VALAHIA UNIVERSITY OF TARGOVISTE/FOOD TECHNOLOGY DEPARTMENT

TEL/FAX. 0245206108, yulia1081967@yahoo.com

ABSTRACT

The foods destinies of the human consumption must finding in a triple hypostasis: should feed, should like and should be without noxious factors for the health. The metaphoric notion "food health" is indissoluble connected of the human health, being one of the most important influence factors of ours days. No casual, at the International Conference of Nutrition organized by FAO/OMS at Rome, in December 1992, where 159 states were participated, inclusively Romania, was synthetised the final declaration and the world logistic action plan concerning "Food security". The declaration signed also by the Romanian government forecast the politics elaboration in this meaning at the each state standard.

The food safety systems establishing represent a national priority because this is the fundamental stone which stay at the base of the public health building. There is evidence in this sense the state organisms which are instituted, respectively the crowd of the law documents elaborated at the last.

For Romania, the passage from the food raw material export to the finished products export is conditioned by the insurance and the guarantee of the quality safety production, inclusively from the salubrity point of view.

The UE countries were adopted the quality system, and the market "actors" assign the important resources for the creation and for the implementation of such systems. The obtaining of the quality certification and the implementation of the modern systems of quality management represent for the food companies the "passport" for the entrance on the European Union market.

The progresses in the quality field of industrial processing of foods can't be possible without the knowledge development in dynamics domains such as food microbiology and food biochemistry. The biotechnologies applied in food industry are based on the results of enzymology researches, of fermentative and adulteration processes of microbiology researches, of starter cultures utilisation, all being destined at the obtaining of the superior quality foods.

The desired modifications, morphostructurals and biochemicals, which are produced in the food raw materials during the technological stages of processing, are the result of the conjugate action of the tissue and bacterium equipment, conducted with competence by the technologist, using performing equipments.

The researches were undertaken in the following directions: the biochemical proteolysis processes identification during the rigidity and maturity installation, as well as during the processing stages; the changes evolution in the sugars system in the muscular rigidity period respectively in the maturity period; the analysis of the meat lipids oxidative degradation processes, in function of the storage period of time, in different environmental conditions; aspects regarding the morphostructure of the new meat, the refrigerated meat and the freezing meat; the colour meat transformations; the monitoring of the microbiological quality of the meat – raw material, of the ready products and of the final products.

FIRE BLIGHT OF ROSACEOUS (*ERWINIA AMYLOVORA* (BURRILL) WINSLOW) IN SIBIU COUNTY, ROMANIA

Maria TĂNASE, Letitia OPREAN, Iuiana ANTONIE, Daniela SIMTION, Cristina MOISE

ABSTRACT

Fire blight, caused by the bacterium *Erwinia amylovora* (Burrill) Winslow, is a serious disease of Rosaceae plants that affects fruit trees such as pear, apple or quince, and ornamental plants with great commercial and economic value. The disease is spread and well distributed in all temperate regions of the world. In Sibiu County fire blight was first detected in 1997 and later, several new outbreaks have appeared in other locations that have been properly eradicated. Control of fire blight is very slightly efficient in affected plants and is based on measures to avoid the spread of pathogen, and the introduction of disease in non-endemic regions. The commercial implications of fire blight outbreaks are aggravated by the limited effectiveness of current control measures.

RESEARCHES ON EFFICIENCY OF USING HYDRAULIC MECHANISM WITH AUTOMATIC ADJUSTMENT AT TRACTORS FOR IMPROVING THE COMPETITIVENESS OF AGRICULTURE AIMING EU-COMPATIBILITY

Mariana DUMITRU

"Lucian Blaga" University, Sibiu, Romania

Mountain Engineering Department

E-mail: mariana_dumitru2001@yahoo.com, Phone: 0269 234111, Fax: 0269 233282

ABSTRACT

The using of force adjustment makes that a part of machine weight, of traction resistance and of front bridge weight to be repartitioned on the back bridge, having as a result the improving of traction index and exploitation.

The paper presents studies on the real characteristics of traction at plough of tractors, the influence of adjustment over the productivity index and consumption at plough and the variety of effective productivity and fuel consumption depending on the depth of work and adjustment.

These measures are meant to increase the efficiency of tractors, in order to be compatible with EU agriculture.

IMPROVEMENTS ON THE SUSPENSION MECHANISM WITH AUTOMATIC ADJUSTMENT AT TRACTORS IN ORDER TO INCREASE LOCAL PRODUCTION FOR EU INTEGRATION

Mariana DUMITRU

"Lucian Blaga" University, Sibiu, Romania

Mountain Engineering Department

E-mail: mariana_dumitru2001@yahoo.com, Phone: 0269 234111, Fax: 0269 233282

ABSTRACT

Considering the fact that extension of using of hydraulic systems of action and adjustment represents a requirement of the actual stage of development and perfection of agriculture machines in the light of EU- integration, the paper presents some researches on the suspension mechanism which is actioned by the hydraulic mechanism with automatic adjustment at tractors.

The studies refer, between others, to the lifting height of longitudinal tyrants depending on their fixing points and also for vertical tyrants.

MEASURES FOR IMPROVEMENT OF ECONOMIC EFFICIENCY AND COMPETITIVENESS OF AGRICULTURE IN SLOVENIA AFTER ACCESSION TO EU

MATEJ BEDRAC

Agricultural Institute of Slovenia, Department of Agricultural Economics

Hacquetova 17, 1000 Ljubljana, Slovenia

Tel: 00-386-1-28-05-225, Fax: 00-386-1-28-05-255, E-mail: matej.bedrac@kis.si

In the paper measures of Structural Policy and Rural Development Policy which directly influence on improvement of economic efficiency and competitiveness of agriculture is presented. In introduction we will describe development of measures in pre-accession period and their implementation during the SAPARD programme. In the second part we will present measures after the accession to EU carried out through Single Programming document 2004-2006. Data were gathered from the Slovenian legislation and Ministry of Agriculture, Forestry and Food.

IMPROVING THE AMOUNT AND QUALITY OF THE ACTIVE PRINCIPLES FROM *ANGELICA ARCHANGELICA* L.USING GENETIC FINGERPRINTS

Mihai Radu Pop¹, Camelia Sand¹, Dana Bobiț², C.H. Barbu¹

¹"Lucian Blaga" University of Sibiu, Faculty of Agricultural Sciences, Food Industry and Environmental Protection
5-7 Ion Rațiu St., 2400 Sibiu Romania, e-mail: 5mpop@email.ro

²Research Station for Medicinal Plant, Brașov, Romania

ABSTRACT

Species from genus *Angelica* are cultivated in countries such as Finland, Hungary, France, the Netherlands, Romania, Belgium, China, Korea, etc., as medicinal plants.

One local population, DE CRISTIAN, is currently grown in culture in Romania. The active ingredients concentration within this population shows significant variability. We selected ten lines from this local population

The purpose of this study is the investigation of the right conditions for Random Amplified Polymorphic DNA (RAPD) technique, of these species, prior the onset of the breeding process. RADP can be employed as a means of differentiating or characterizing subspecies, varieties or ecotypes.

RAPD analysis can use for establish the degree of their genetic variability at the DNA level. This study is concerned with the establishment of characterized cultivars based on both phenotypic and molecular characters.

In this paper we present the genetic fingerprints for those ten lines. A dendrogram of the relative relation between these lines has been drawn based on the DNA polymorphism as revealed by the RAPD markers. The molecular data was compared with, and corroborated to the phenotypic data in order to achieve a better picture of relation and variation between these ten lines.

HUNGARIAN AGRICULTURAL AND RETAIL TRADE IN A COMPETITIVE ENVIRONMENT

MIKLÓS WEISZ – ERZSÉBET PÉTER, PhD Students

Pannon University Georgikon Faculty of Agriculture Keszthely

Department of Economics and Social Sciences

Tel.: +36/83/545-111, Fax: +36/83/545-143, email: weisz@georgikon.hu

ABSTRACT

Because of privatisation, basic changes took place in the Hungarian trade sector in the '90s. New enterprises established as a result of the changes in ownerships and customers' habits. Foreign functioning capital entering to Hungary caused significant changes in the economy during one decade. Because of the significant multiplier effects of foreign functioning capital new controlling systems, new approach to work, new service and financial background was established.

Among the ten countries joined to the EU in 2004, Hungary is the only one, where agricultural trade balance is positive. Mainly foreign food producers gained advantage from the enlargement of the internal market in 2005, the selling of Hungarian food industry decreased with further 3,4%.

The paper analyses a special area of Hungary: Lake Balaton Resort Area. From the sectors of the area's economy the development is observable mostly in retail trade. Merchant chains and shopping centres owned modern equipments and satisfactory selection, through external capital-investments. They were able to build up new networks and distribution systems. At the same time retail trade declined, micro enterprises with few employees lost their position in the area. The answer of the Hungarian food-trade sector to the appearance of trade companies well provided with capital on the market was the establishment of "chains". This change made it possible for small sized enterprises to be competitive with the big companies in the field of commerce.

Key words: agricultural trade, functioning capital, food industry

THE INFLUENCE OF BODY CONDITION LOSS ON THE REPRODUCTION IN CZECH DAIRY COWS

Miroslav MARŠÁLEK, Marta KUBEŠOVÁ, Jan FRELICH

University of South Bohemia in České Budějovice, Agricultural faculty, Department of Special Livestock Breeding, Studentská 13, 370 05 České Budějovice, Czech republic, Kubesova.Marta@seznam.cz
tel, fax: 00420387772681

ABSTRACT

In the main Czech dairy breeds - the Czech red pied cattle (C), which belongs to the group of Siemental cattle, and the Holsteins (H)- the body condition score (BCS) and it's influence on the length of the insemination interval and service period was observed. BCS monitoring took place every 4 weeks for 5 months post partum. The first BCS observation ran from the period around calving. The methodology for dairy and dual-purpose cattle was used with orientation to backside and shoulders, the variation was 1-5 points. Point 1 means, that the cow is underfed, point 5 that the cow is super fatted. The data about the cows' fertility was gained from the performance control and from the herd database. The first heat was observed by pedometers placed on the front leg of the cow. Data were ranked according to the months of the lactation and were analysed by the ANOVA analysis of variance. For evaluating the relations between the length of service period, insemination interval and changes in BCS were used the correlation and regression analysis.

In both breeds, the highest BCS was found in the period around calving (3,03 points in Holsteins, 3,46 points in Czech red pied), and in both cases, the significant BCS decrease was found after calving (0,86 points in H and 0,55 in C breed). In the C breed, the statistically significant correlation coefficient was found between the BCS loss and the length of service period ($r_{xy} = -0,16^{++}$), the BCS changes had no effect on the length of insemination interval. Again, in the H breed, there was found the statistically significant correlation coefficient between the BCS loss and the length of insemination interval ($r_{xy} = -0,23^{++}$). According to the correlation analysis results the statistically significant regression models were determined.

Key words: Czech red pied cattle, Holstein, body condition score, early lactation, reproduction indexes

DISTRIBUTIONAL EFFECTS OF REFORMED DIRECT PAYMENTS POLICY ON SLOVENIAN AGRICULTURE

Miroslav REDNAK¹, Emil ERJAVEC², Tina VOLK³, Stane KAVČIČ⁴

¹Agricultural Institute of Slovenia, Dept. for Agricultural Economics, Hacquetova 17, SI-1000 Ljubljana, Slovenia; miro.rednak@kis.si

²University of Ljubljana, Biotechnical Faculty, Dept. of Animal Science, Chair for Agricultural Economics, Policy and Law, Groblje 3, SI-1230 Domžale, Slovenia; emil.erjavec@bfro.uni-lj.si

³Agricultural Institute of Slovenia, Dept. for Agricultural Economics, Hacquetova 17, SI-1000 Ljubljana, Slovenia; tina.volk@kis.si

⁴University of Ljubljana, Biotechnical Faculty, Dept. of Animal Science, Chair for Agricultural Economics, Policy and Law, Groblje 3, SI-1230 Domžale, Slovenia; stane.kavcic@bfro.uni-lj.si

ABSTRACT

The paper attempts to estimate the distributional effects of alternative direct payments schemes under the latest reform of the EU Common Agricultural Policy (CAP) on agriculture in Slovenia. The analysis is based on a static deterministic model for agricultural holdings. The scenario analyses include 57.204 agricultural holdings which applied for direct payments in 2004. The distribution of direct payments according to different alternatives of CAP reform was compared against the distribution of standard scheme with 95 % EU level of payments. Different combination of regional single area payment scheme with allowed production coupled payments and historical dairy payment reduce redistribution effects on aggregate level. However, the introduction of the individual measure

or their combination for reduction of negative distributional effects in specific sector at the same time leads to more negative effects in sectors without those payments. In the elimination process three schemes were selected for further analysis. Pure regional scheme (R) would result - after the transitional period - in the most negative distributional effects with different situation between sectors. Gradual introduction of the regional scheme could reduce the negative effects of the reform. The combined scheme (K) could lead to the less expressed and sectorally mostly balanced impacts. However, due to their immediate implementation without any transitional period, the negative effects appear immediately. Adjusted regional scheme (RK) is combination of both options. It includes gradual transition to grassland area payments and part of coupled direct payments. For the majority of Slovenian agricultural holdings it leads to least radical effects.

Key words: CAP reform, redistributive effects, agricultural holdings, Slovenia

USİNG ECO-TURİSM POTENTIAL OF TURKEY FOR RURAL DEVELOPMENT

Mithat DİREK¹, Tuba BEŞEN² and Ahmet Tuğrul POLAT³

¹ Dr., Selcuk University, Agricultura Faculty, Department of Agricultural Economics, Konya, Turkey

² Selcuk University, Agricultura Faculty, Department of Agricultural Economics, Konya, Turkey

³ Dr., Selcuk University, Agricultura Faculty, Department of Landscape Architecture, Konya, Turkey

ABSTRACT

Rural development has been the one of the important issues for Turkey since Turkish Republic found. This issue still keeps its importance for Turkish Republic which effort to harmonise its Agricultural Policy to the European Union Common Agricultural Policy.

The 45 % of Turkish population still live in rural area. Also, agriculture which is the main activity of rural population have many structural problems. For example; small size family farming is common farming type in Turkey, the farming area size are small, farming land are constituted from different plots, the farming activities are not profitable and also not efficient, intense pressure of population on the natural resources, etc. Beside, rural population have some social problems. For example; lack of health and education services, low education level, decline of youth population, immigration to the cities, woman and children problems, etc.

Turkish culture come in to being from different cultures hence, many civilization lived in border of Turkey. Moreover, Turkey has great natural beauties. Both of them "cultural and natural heritage" create big potential for eco-tourism. Eco-tourism can be an additional income resource for rural population, decrease the pressure of population on the natural resources, add value to the region, create other economic activities which hire the local population, frustrate the migration.

In this study, Kilistra was chosen as a research area. Kilistra which is located in Konya province is the historical and cultural place. Participatory Rural Appraisal will be implemented for to provide local population participation and SWOT analysis will be used to expose eco-tourism potential of research area.

TESTING OF NEW PLANT REGULATING SUBSTANCES ON BOTH QUALITY AND PRODUCTIVITY OF PEAS FOR TANNING

Nanko POPOV, Apostolis DZIMOTUDIS

Agricultural University, Department of Plant Physiology and Biochemistry, 12 Mendeleev Str., Plovdiv, Bulgaria

E-mail: popov@au-plovdiv.bg

ABSTRACT

The effect of new plant regulating substances (RENI, sodium humate) on some quality parameters, grain biological value and technological parameters of peas were studied.

Positive effects of RENI and sodium humate on dry matter content, starch /sugars ratio, protein content, essential amino acids to total amino acids ratio as well as peas productivity were established.

On the basis of the observed positive effects of RENI and sodium humate on both quality and productivity of peas for tanning they have been recommended for use as ecological means in modern agriculture.

AGRICULTURAL AND RURAL POLICY OF SERBIA – INSTITUTIONAL FRAMEWORK AND IMPLEMENTATION

BOGDANOV Dr Natalija, BOŽIĆ Dr Dragica, MUNČAN Dr Petar¹

Faculty of Agriculture University of Belgrade

10080 Zemun – Belgrade, Serbia

E-mail: natalija.bogdanov@agrifaculty.bg.ac.yu, Cell. phone: +381.63.829.4757

ABSTRACT

Based on the experience so far to reform the agricultural sector is the crucial and major issue in the process transition. The reformation of the agricultural sector includes changes in the ownership structure but also the formation of an environment and institutions needed for the establishment of a diametrically new and different market structure. In addition, it is considered necessary to establish complex horizontal and vertical links in the production chain in order to ensure sustainability of the system. These complex processes need to be coordinated in order to prevent major social impacts expected to imperil the vitality of the resources and the quality of living in the rural environment. An efficient policy measure in the sector aimed at solving these issues is primarily preconditioned by the available budget resources but no less by the development of the institutions involved.

Since 2000 the agricultural policy of Serbia has had two radical turning points in the program drafted. In general, over the past five years the budget for financing agriculture has been significantly increased and the agricultural support lines diversified taking the SAPARD system as a model.

Beginning 2000 the agricultural policy of Serbia focused on solving issues of major concern in agriculture and overcoming the state-of-the-art in the sector. Its main activity focused on farms with the aim of offering grants in order to change the production structure. In addition, system solutions with regard to the competence of institutions were changed and more rigid control measures were taken in fields with the black market most predominant. Substantially modest budget resources for agriculture left insufficient space in order to undertake more radical changes in the agricultural support mechanism.

Since 2004 strategic assignments and implementation mechanisms have been major turning points in the agricultural policy of Serbia compared with the preceding period. The agricultural policy thus reformed focused on increasing competitiveness between commercial family farms. In the mechanism of implementation a turning point has been made from encouraging income to encouraging investments. Budget resources for agriculture increased as well as their share in the total budget of the country.

However, the policy of rural development of Serbia has not been clearly defined. Moreover, it lacks some basic institutional assumptions. The issues with regard to rural development have not been given enough space and are insufficiently represented in the system changes taking place in Serbia. The two major reasons for this may be defined as follows:

- In the agricultural sector of Serbia problems with regard to institution, production and organization were given priority in 2000 followed by social and economic changes.
- Uncertainty with regard to the frequency of accessing European and other integration processes was closely linked with the uncertainty of financial resources being transferred, e.g. credits, foreign investments and the use of European funds for institutional and sector adaptation.

The Ministry of Agriculture, Forestry and Water Management has taken over all the competencies in this field however, there is no mutual cooperation and relationship between the ministries. The global strategy framework of the rural development of Serbia has been defined in the Strategy of Agriculture of Serbia. This document defines the future policy measures of rural development as the need to structurally adapt agriculture and diversify activities in order to decrease rural poverty. The strategy of Serbian agriculture in the field of rural development policy predicts heterogeneity of the rural space as one of the initial criteria for defining the policy in the field of interest. The need to define precisely the policy of rural development was preconditioned by the fact that (as in case of other countries) rural development presents the way to overcome the requirements and necessary changes imposed by the integration processes.

The aim of the study was to present some basic structural, institutional and conceptual changes and enhancements in the agricultural and rural policies of Serbia over the past few years. Methods of comparison were used taking into account some respectable countries in transition in order to show some relevant and available statistical indices.

¹ Bogdanov Dr Natalija, Associate Professor, Bozic Dr Dragica, Associate Professor, Muncan Dr Petar, Full Professor

MODIFYING EFFECT OF TIDIAZURON AND DIETHILENTRIAMINE ON GAMMA-IRRADIATED OATS AND TRITICALE PLANTS

Nevena STOEVA¹, Malgojata BEROVA¹, Andon VASSILEV¹, Zlatko ZLATEV¹, Tzvetanka BINEVA²

¹Agricultural University, Department of Plant Physiology and Biochemistry, 12 Mendeleev Str., Plovdiv, Bulgaria

²Institute N. Pushkarov, 7 Shousse Bankya Str. Sofia, Bulgaria

e-mail:stoeva_a_b@yahoo.ca

ABSTRACT

The importance of the problem of the radioactive contamination of agricultural products is determined by the necessity to find ways of restricting and reducing the effects of this phenomenon. The practical use of synthetic growth regulators can be a successful approach to this problem.

The possible modifying effect of the synthetic growth regulator Tidiazuron and poliamine DETA, applied after gamma-irradiated stress on oats and triticale plants, was studied.

Pot vegetative experiments with spring oats, cultivar Hanza 152, and tritikale, cultivar 7251 were carried out. The plants were grown under controlled conditions and in the phase of stem extension they were irradiated with Cesium-137 gamma rays, at a dose rate of 6 Gy (oats), and 4 Gy (triticale), and dose intensity of 2 Gy/min. On the day after the irradiation the plants were sprayed with a radioprotector for the purpose of decreasing the radiation damage. Two types of protectors were tested: tidiazuron and diethilenthriamine.

The influence of the irradiation and the radiomodifiers on some physiological parameters and the productivity was studied.

On the basis of the results obtained during the experiments the following conclusions were drawn:

The irradiation of oats and triticale in the phase of stem extension caused stress in the plants, which found expression in disorganization of the physiological processes.

The tested synthetic plant growth regulators reduced the negative effect of the irradiation.

This found expression in both photosynthesis and transpiration activation, as well as in the increased amount of the photosynthetic pigments. The peroxidase activity and the lipid peroxidation were reduced, while the plant productivity was increased.

Independently of the similar effect of both of the substances, the plant growth regulator of cytokinin type Tidiazuron was characterized with a better modifying

Key words: oats and triticale plants, gamma-irradiation stress, synthetic growth regulator, leaf gas-exchange, photosynthetic pigments, enzymes.

CAPACITY OF UTILIZATION OF NITROGEN FROM DIFFERENT COMPOUNDS AS SOLE NITROGEN SOURCE BY SOME YEAST STRAINS

OPREAN LETITIA, TANASE MARIA, GASPAR ENIKŐ

„LUCIAN BLAGA” UNIVERSITY OF SIBIU, ROMANIA

ABSTRACT

In this paper we describe comparative researches concerning the capacity of the isolated yeast strains to utilize nitrogen from different compounds as sole nitrogen source, with the purpose of their characterization and identification from different compounds as sole nitrogen source, with the purpose of their characterization and identification from physiological point of view. We have studied 27 yeast strains, mostly, used in the fermentative industry. One can the *Saccharomyces* yeast strains we have isolated do not assimilate ethylamine HCl and KNO₃. Assimilation of ammonia (introduced in the test as ammonium sulphate) has proved useful in the differentiation of the *Kloeckera* yeast strains, that can not use it and the *Torulopsis* ones that assimilate it poorly, from the *Saccharomyces* yeast strains, for which ammonia is the most assimilable nitrogen source. *Saccharomyces* yeast strains can also assimilate small amounts of urea and peptone. The *Candida*, *Pichia* and *Rhodotorula* contamination yeast strains assimilate well the ammonium sulphate, urea and peptone.

AGGRESSION IN PIGLETS - WAYS OF SOLUTION.

Peter Juhas, Ondrej Debreceni, Peter Strapak

Department of Animal Husbandry, Faculty of Agrobiolgy and Food Resources, Slovak University of Agriculture, Tr. A. Hlinku 2, 949 76 Nitra, Slovak Republic

Peter.Juhas@uniag.sk

+421376415804

ABSTRACT

Aim of work was find out possibilities of decreasing of piglets fights after shifting to new pen and litter mingling by environment modification. In trait we create experimental groups (EG) from two litters in two-space pen. Two-space pen was made by partitition classical one space pen by provisional barrier. The barrier is wooden, 500 mm tall. The wall is placed in such way that the pen is divided to two parts and at one side is 250 mm wide gap between the wall and the barrier. The gap is stuffed by straw during piglets loading. The gap is step by step opened by piglets. The moment of opening of gap is passing of first piglet to other side. Control groups (CG) were created in same pen without modifications. In all analyzed traits we record highest number of attacks in groups created in pen without modification, but differences were not considerable. We expect that high excitation after shifting to new environment cause easier triggering of aggression. In partitioned pen piglet explore the new environment in group of sibs. During exploration decrease the excitation, so in moment of opening are piglets calmer. They can join the group of unfamiliar piglets when they "desire". The next advantage of partitioning is possibility of escape to other side of barrier after attack.

CHANGING MENTALITIES – A PROCESS OF PARTICULAR IMPORTANCE FOR IMPROVING THE COMPETITIVENESS OF THE AGRICULTURAL SECTOR AND THE QUALITY OF LIFE IN RURAL AREAS

Radu ROXANA CRISTINA

University of Craiova, Faculty of Law and Administrative Science, Department of Private Law

Tel.+40251419900, e-mail: rocxaine@yahoo.com

ABSTRACT

The change from communist regime which promoted, at least in the theoretical field, full employment, equal distribution of work remunerations, solidarity with the disadvantaged, equal opportunities for all society members, to capitalist regime generated in Romania many negative social phenomena such as: poverty, social exclusion, high rate of unemployment, emigration of high-skilled workers, distrust in the present political system.

Although Romania has generally demonstrated a willingness to break away from centrally planned model of economic development in favor of market-type economy, there is, as in all countries of Eastern Europe, a legacy of poor integration into the markets of the West. The major problems Romania confronted and still confronts itself with after December 1989 are the poor quality of its manufactured goods and its very inefficient agriculture. After 17 years from the Revolution, the agricultural field is still affected by high costs, uncompetitiveness, the lack of technology, the excessive breaking up of land property. On the one hand, many people still have the nostalgia that life was better under the previous regime. On the other hand, nobody wants to be a part of an agricultural association because of the painful experience of collectivization and Collective Agricultural Farms. Everyone wants to be master and owner of his land, but Romania's integration in the European Union can not be possible having individual agricultural lots of no more than 1 ha.

Changing mentalities is a very difficult problem but it is the only method of improving agricultural sector, local production and rural development. With this aim in view, Romanian authorities have to try very hard to achieve social and mental change by persuading people to unify their crumbled agricultural lots and by supporting farmers to qualify themselves for obtaining European grants.

RELATIONSHIPS OF CYTOLOGICAL QUALITY OF MILK TO MILK COMPOSITION AND EFFECT OF SOME ENVIRONMENTAL FACTORS ON THE FREQUENCY OF MASTITIS RECURRENCE IN COWS

SAWA Anna, NEJA Wojciech, BOGUICKI Mariusz

Department of Cattle Breeding, University of Technology and Agriculture in Bydgoszcz

ABSTRACT

Good food (and milk) quality is demanded by consumers, the dairy industry and veterinary police. This makes it necessary to pay special attention to mammary gland health, because the inflammatory secretion produced by cows with clinical mastitis makes milk unfit for sale. Data were collected in 1998-2002 on the somatic cell count (SCC) in test milkings of 63621 cows from the active population in the Pomerania and Kujawy regions. Udder health was determined based on SCC in milk ($\leq 500,000/\text{ml}$ – healthy udder, $>500,000/\text{ml}$ – mastitic udder) (Wiśniowski 1973). The COOR, FREQ and GLM procedures of the SAS packet were used for statistical calculations. There was a negative correlation between SCC and milk yield ($r = -0.19^{**}$) and lactose content ($r = -0.38^{**}$), and a positive correlation between SCC and fat ($r = 0.07^{**}$) and protein content ($r = 0.25^{**}$). However, the elevated protein concentration is not favourable because the amount of whey proteins rather than casein increases in milk. The χ^2 test showed significant ($p \leq 0.01$) differences in the frequency of cows with recurrent mastitis according to all the experimental factors analysed. The age of cows was the most differentiating factor. Among first calvers, only 18% cows had recurrent mastitis, while the number of recurrences during lactation was the lowest and the recurrences were the shortest. In terms of herd size, the lowest (13%) proportion of cows with recurrent mastitis was found in herds with up to 10 cows, followed by up to 30% in herds of 100-200 cows. Similar relationships were found for the number of recurrences. As the level of herd production increased, so did the proportion of cows with recurrent mastitis. In herds with the highest milk yields, the recurrence period was the shortest. There was an upward tendency for the proportion of cows with recurrent mastitis in 1998-2001 and an improved situation in 2002, when the number of recurrences was lower than in the previous years. Other factors that influence the proportion of cows with recurrent mastitis are related to cow management and milking conditions. The proportion of cows with recurrent mastitis was almost 10% lower in the confinement system than in the loose housing system, although the recurrence period was shorter in the latter. In the confinement facilities in which cows were kept in stalls at least 2 m long, the proportion of cows with recurrent mastitis was 1% lower. Shallow litter stalls were the most favourable in terms of cows with recurrent mastitis and the number of recurrences, with the shortest recurrences in cows kept on deep litter. Hand milking, which was applied sporadically in the analysed population of cows, had a favourable effect on the level of mastitis-related traits. The highest proportion of cows with recurrent mastitis was found in herds in which cows were milked in milking parlours, with the highest number of recurrences. In the farms in which cows were milked using pulsation controllers and in the farms in which cows were milked three times a day, the proportion of mastitic cows and the number of recurrences were higher, but the duration of recurrences was shorter. The lack of forestripping had an unfavourable effect on the proportion of cows with recurrent mastitis, the number of recurrences and the recurrence period. Teat cleaning shortened the recurrence period, while teat drying reduced the proportion of cows with recurrent mastitis. Drying off of cows under cover of antibiotics reduced the proportion of cows with recurrent mastitis and the number of recurrences, and shortened the recurrence period.

DOES COMPARATIVE ADVANTAGES IN AGRO-FOOD TRADE MATTER FOR MULTIFUNCTIONAL RURAL DEVELOPMENT: THE CASE OF HUNGARY AND SLOVENIA

Štefan Bojnec and Imre Fertő

Dr. Štefan Bojnec, Associate Professor of Economics, University of Primorska, Slovenia,

E-mail: stefan.bojnec@fm-kp.si

DDr. Imre Fertő, Senior Research Fellow, Institute of Economics, Hungarian Academy of Sciences, Hungary, E-mail:

ferto@econ.core.hu

ABSTRACT

This paper investigates revealed comparative trade advantages in agro-food trade and their associations with multifunctional and sustainable rural development. We analyze revealed comparative advantages of Hungarian and Slovenian agro-food trade in the European Union (EU) markets. Both the levels and pattern of the revealed comparative advantage measure are investigated. The empirical research seeks to explain how revealed comparative advantages have developed across main product groups and over time and what are likely their implications for multifunctional rural development in the enlarged EU. We employ a disaggregated trade dataset to identify the revealed comparative advantages across products groups and their patterns over time to provide broader policy implications. The empirical results for Hungary confirmed few agro-food product groups with revealed comparative

advantages in the EU markets, but have not identified any such agro-food product group for Slovenia. Agro-food sectors in Hungary are likely to continue to have a significant role in the Hungarian rural areas, but employment and income activities are more likely to be combined with other more rapidly growing service activities. In Slovenia, traditional agro-food activities under increasing competitive pressures are more likely to shrink. The agro-food sector is likely to restructure towards non-traditional ways of production and marketing such as bio-production and rural tourism at farms, but also the role multifunctional agricultural and non-agricultural, services activities in sustainable rural development are likely to increase significantly.

Keywords: revealed comparative advantage, multifunctional development, Hungary, Slovenia.

THE ROLE OF RURAL DEVELOPMENT POLICY IN ENVIRONMENTAL AND LAND MANAGEMENT IN SLOVENIA

TOMAŽ CUNDER

Agricultural Institute of Slovenia, Department of Agricultural Economics

Hacquetova 17, 1000 Ljubljana, Slovenia

Tel: 00-386-1-28-05-110, Fax: 00-386-1-28-05-255, E-mail: tomaz.cunder@kis.si

Rural development policy was one of the key issues and priorities for Slovenia on its way to European Union. The Rural Development Policy, which is created under the framework of EU rules, comprises several measures, which are to be co-financed by the EU funds. They contribute to environmentally, socially and economically sustainable development of rural areas in Slovenia.

The prepared paper briefly outlines theoretical arguments for introducing of EU comparable rural development policy and examines the implementation of different support measures in Slovenian agricultural policy. The objective of the paper is to analyse the principles of current rural development policy in Slovenia and to expose the crucial differences in corresponding policy support in Slovenia and EU. The paper is based on desk research drawing from responsible literature, legislation documents and available research studies. Critical evaluation is carried out in alignment with generally used and known policy evaluation techniques.

A successful implementation of the Rural development programme in Slovenia depends of many items including administrative structure, provision of information, monitoring of progress, integration with other policy objectives and the financial resources available. Programme which is developed under EU comparable regulations have multiple objectives regarding environment and landscape. However, it also has some economic and social objectives, which often bring competition between different policy interests. The rural development objectives might not be fully achieved in case when measures are taken without sufficient coordination with other CAP measures. A careful monitoring effort - also by introducing rural development indicators, is needed to assess incentive payment schemes for their success in achieving of planning objectives and their effectiveness as policy instruments.

A CONCEPT OF MULTIFUNCTIONALITY AND ITS DISSEMINATION TO SOME NEW UNDEFINED AREAS

VIDA HOČEVAR¹, LUKA JUVANČIČ²

^a Corresponding author. University of Ljubljana, Biotechnical Faculty, Zootechnical Department, Chair for Agricultural Economics, Policy and Law, Groblje 3, SI-1230 Domžale, Slovenia. Tel. + 386 1 72 17 839; Fax: + 386 1 72 41 005. E-mail: vida.hocevar@bfro.uni-lj.si

^b The same institution. Tel + 386 1 72 17 925; Fax: + 386 1 72 41 005. E-mail: luka.juvancic@bfro.uni-lj.si

There is a growing consensus within the international community that, apart from its primary role of producing food and fibre, agriculture has also other roles and functions. The most commonly roles and functions attributed to agriculture relate to: (i) impact on agricultural landscape and land conservation, (ii) impact on natural source conservation and agri-biological diversity, (iii) contribution to food security, (iv) animal welfare care and (v) contribution to cultural and historical tradition conservation. These various functions are in line with the OECD »working« definition of multifunctionality, which considers production as multifunctional if *i*) multiple commodity and non-commodity outputs are jointly produced by agriculture; and if *ii*) (at least some of) the non-commodity outputs exhibit the characteristics of externalities or public goods, with the result that markets for these goods do not exist or function poorly.

In spite of this general consensus, various countries validate the importance of functions and services provided by multifunctional agriculture differently. This is also reflected in a varying importance given to these aspects through agricultural policy mechanisms.

The concept of multifunctionality appears to be deeply rooted in policy mechanisms of the European Union. Traditionally, only agricultural non-commodities appear as a starting-point of discussions on attributes of multifunctionality. However, with the emerging accent given to more integrated policy concepts, such as rural development policy, there is a growing need to broaden also the concept of multifunctionality. There are a number of different non-commodity outputs that can be covered in a wider concept of the role of agriculture in rural development,

such as rural viability, (particularly agricultural) employment, landscapes, environmental quality and food security.

In practice, however, most research until now has been focused on a rather narrow perception of multifunctionality, typically taking into account mainly the public goods such as landscapes or other environmental features. Empirical work until now has with a few exceptions largely ignored the other functions of multifunctionality.

The paper attempts to challenge aspects of multifunctionality in the context of rural development in a broader and deeper sense. It aims to compile the existing literature dealing with such 'new' attributes of multifunctionality, such as rural viability, human capital, social capital and quality of life. The paper will also discuss the merits and potential problems of empirical work dealing with less tangible aspects of multifunctionality.

EFFECT OF NATIONAL AND EU CO-FINANCED TENDERS ON TERRITORIAL DEVELOPMENT IN THE SOUTH TRANS-DANUBIAN REGION

Czuppon, V – Sáriné, Cs. E. – Martonné, T. A.

University of Kaposvar, Faculty of Economic Sciences

Phone: +36/82-505-939, Fax: +36/82-505-947

ABSTRACT

In the recent decade, numerous support sources have been available in Hungary, which were reacted differently by the market actors, those of local governments and NGOs due to different reasons. The current study deals with the tendering activity of the local governments.

In many cases, the opportunities were not used because they could not or did not recognise their opportunities. In numerous occasions, it is possible that the actors did not own the necessary knowledge and information providing novelty for them and partners; or they could not find suitable help to realise their ideas, or they represented different development demands.

The follow-ups and impacts of realised and supported projects are known mainly by a narrow professional or territorial group. Their real effect on the development of regions or small regions were not analysed, their efficiency have not been proved, therefore these are not suitable to base any spatial development work or planning.

In several cases, the supporting sources modified the development conceptions or strategies of a certain region or settlement; and it is not sure that into the best direction.

Answers on raised questions and doubts can not be given as long as the real figures, factors and reasons are not known. The development experts of the region, although are increasing in number, can not efficiently help in the necessary fields as long as they are not familiar with the real background and the tendering activity of the South Trans-Danubian region.

At the moment, there is not an overall database on the whole region available, which reliably reflects on the current situation of the region.

We believe that it is necessary that a primer database should be available for the experts responsible for planning and education, out of which the real demands can be deducted and the inventing directions planned. Also, which is suitable for realising the problems and the reasons of difficulties, hence these can be solved after they are recognised.

The study processes the collected data, analyses it from several aspects and forecasts tendencies. The conclusions drawn from the results are the basis of both regional and small-region level planning.

DYNAMICS OF THE RADIOACTIVE POLLUTION OF THE SOILS IN BULGARIA TWENTY YEARS AFTER THE CHERNOBIL NUCLEAR POWER PLANT ACCIDENT

Yordanova I., Staneva D., Bineva Tz., Stoeva N.*

Institute for Cryobiology and Food Technology, Laboratory of Radioecology and Radioisotope Research

7, Shousse Bankya Str, 1080 Sofia, Bulgaria

*Agricultural University, 12 Mendeleev Str., 4000 Plovdiv, Bulgaria

E-mail: yordan@bgnet.bg; donastaneva@abv.bg

ABSTRACT

The twenty years period past after the contamination with radionuclides in 1986, as a result of the accident in the Chernobyl's NPP, allowed the accumulation of rich data base for the radiation status of the soils in Bulgaria. Objective of many years studies were mainly virgin soils from high mountain areas (the Rodopa Mountains), hilly (the Sofia field) and flat (the region of Kozlodouy NPP and the Danube river valley). The water catchment basin on the Beli Iskar river in the Rila mountains and the valleys of Strouma and Mesta rivers were included to the investigated regions lately. As a result of the investigation done it was determined that after the Chernobyl's accident cesium-137 and strontium-90 are the main man-made radionuclides detected in the examined Bulgarian soils. The content of cesium-137 and strontium-90 in the soils from Rodopa and Rila mountains is several times higher than that in the soils from North Bulgaria and Sofia field.

WTO NEGOTIATIONS ON AGRICULTURE: CAN DOHA BE RESUSCITATED?

Prof. Željko Šuman, Ph. D.

Vice Rector

University of Mostar, Liaison Officer for BiH

European Association of Agricultural Economists (EAAE)

Trg hrvatskih velikana 1, 88000 Mostar, Bosnia and Herzegovina (BiH)

Phone: + 387/36/310-778; Fax: + 387/36/320-885, E-Mail: zeljko.suman@sve-mo.ba

ABSTRACT

The Doha trade talks, launched in 2001, have been suspended indefinitely as the core negotiators have been unable to bridge their differences. The WTO Director-General Pascal Lamy recommended a "time out" to the General Council on 27 July 2006. Thus, five years of bargaining and debating have ended in a sad display of political failure. The main blockage remains in the two areas of market access and domestic support for agricultural products. While agriculture is at the centre of the Doha Round, it is also the key to unlocking negotiations on industrial products and services. Namely, at the centre of the negotiations is the push for the US and the EU to remove trade distorting farm subsidies and barriers that have made it difficult for developing countries to compete in the global agricultural markets.

As the suspended talks can only be revived by a consensus among the WTO's 149 members, the suspension could take months or even years.

Most trade experts and analysts believe that the World Trade Organization (WTO) will be adversely impacted as the multilateral trading system is further fragmented by a patchwork of bilateral and regional trade agreements, perhaps leading to increased protectionism and marginalization of the WTO.

Is a world beyond the WTO possible indeed?

Trade in agricultural products had never been brought securely within the GATT-based multilateral trading system and in this area the GATT system was at its weakest. The GATT Uruguay Round of trade negotiations, launched in 1986 and completed in 1994, for the first time included agriculture. The successful completion of the Uruguay Round and the foundation of the World Trade Organization (WTO) have radically changed the environment for international trade in agricultural products. Ever since it was effectively brought back within the scope of international trade negotiations in the Uruguay Round, agricultural trade has been one of the major obstacles to securing a fair and effective international trade agreement.

Key words: *WTO, Doha Round, agricultural trade, agricultural negotiations, Uruguay Round, Agricultural Agreement.*

RURAL DEVELOPMENT POLICY IN THE EUROPEAN UNION AND HUNGARY

Zsuzsanna NAGY, PhD Student

University of Debrecen, Centre for Agricultural Sciences

Faculty of Agricultural Economics and Rural Development, Department of General and Agricultural Economics

Telephone/Fax: +36-06-52-508-482, e-mail: nagyzs@agr.unideb.hu

The Common Agriculture Policy (CAP) took shape in the early 1960s. At that time the first action was to stop food shortages. Among the objectives of the Treaty of Rome the subvention of rural development had not appeared yet.

First steps in connection with rural development were the accompanying measures, and by the end of last decade, the European Agricultural Model had taken shape. Agenda 2000 laid down the direction of rural development and introduced the second pillar of the CAP. The rural development was simplified in one regulation 1257/1999/EC, which stressed the importance of rural development and continued the principle of subsidiarity and decentralization. The aim of rural development policy is to improve the quality of life of people living in rural areas, to avoid further growth of the disadvantage of rural regions and to provide opportunities for catching up.

The latest enlargement raised new problems; the mid-term review of Agenda 2000 was carried out and resulted a new CAP-reform in 2003. The 1783/2003/EC rural development regulation modified the previous one. According to the new regulation it is necessary to strengthen rural development policy, enlarge the circles of accompanying measures, and place greater emphasis on requirements for environment, human resources, animal welfare and plant health. Degression and modulation take part in the new CAP-reform in order to increase the role of rural development in the common budget.

In the next budget from 2007-2013, the European Union creates a single rural development fund and simplifies programming, financing and monitoring. The EU wants to enlarge the instruments of rural development with a four axis model.

Hungary became full-member of the European Union on the first of May 2004. EU membership includes obligations and duties as well as rights. The membership of the European Union means milestone for the Hungarian agriculture. It means the membership a system that has provided favourable conditions for the agricultural producers for many decades.

For the period 2004 and 2006 Hungary had to prepare two strategic documents, one of them is the *National Development Plan (NDP)*, which implemented by five Operational Programs and the other is the *National Rural Development Plan (NRDP)*.

Rural population has to face several problems *Agricultural and Rural Development Operational Program (ARDOP)* inside NDP contains

an analysis of the situation of Hungarian agriculture and rural areas. The main priorities and measures of this Operational Program are the following: establishment of competitive production in agriculture, modernisation of food processing, development of rural areas and finally technical assistance.

The measures of National Rural Development Plan (NRDP) provide solutions on environmental challenges (agri-environmental management, support of less favoured areas, meeting standards, afforestation of agricultural land) and play role in solving economic and social problems in rural areas (setting up producer groups, support semi-subsistence farms undergoing restructuring, early retirement).

In 2006 the Hungarian budget for agriculture and rural development is HUF 400 billion. ARDOP gets HUF 40 billion and NRDP gets HUF 60 billion (from which 29 billion and 48 billion is EU fund respectively).

For the next budget period between 2007 and 2013 Hungary following the EU regulation will create only one plan for rural development. At this moment Hungary has only a draft of this plan, so-called National Agricultural Rural Development Strategy. It would be good and useful to finish and accept it by the end of this year.

THE INFLUENCE OF THE ENVIRONMENT ON THE QUANTITY AND QUALITY OF THE MILK

Dana PUSTA, Ioan PAȘCA, Antonia ODAGIU, Roman MORAR, Carmen PUJA

Department of Animal Production and Food Safety,

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

phone +40 264 596 384; fax +40 264 593 792; e-mail: danapusta@yahoo.co.uk

SUMMARY

The purpose of the study was to observe the changes of the milk quantity and quality in cows exposed to solar radiation during the hot summer days.

The study was carried out in the period May-October 2000-2005 on groups of cows, belonging to Romanian Simmental breed and bred in different conditions: on the pasture or in the stable.

There were also recorded the main meteorological parameters such as the temperature and the relative humidity, in order to calculate the Temperature Humidity Index (THI) and the intensity of solar radiation. We have to mention that in the whole studied period the value of THI in July and August was higher than 72, which is considered the limit of stress in cows. When the values of THI are higher than 72, different authors demonstrated that the cows are submitted to heat stress.

The determined parameters were: the total milk production to characterize the milk quantity and the conductivity, the protein, the lactose, the fat and the milk cells, to characterize the milk quality.

The influence of the caloric solar radiation on the milk production in cows was determined both in acute and chronic stress.

On this purpose it was measured the milk obtained from a group of cows belonging to Romanian Simmental, during the III-rd and IV-th lactation, in the period May-September. It was encountered a decreasing of the total milk production with 26.46% in August, comparing to May ($p < 0.01$) which was considered the reference month, when the cows were started the grazing. The mean value of the milk production was of 9.06 l/capita (± 0.358) in cows exposed to the sun, compared to a mean value of 9.64 l/capita (± 0.055) in cows in stable, this representing a reduction of the milk production with 6.4% in a period of five days. The reduced milk production is correlated with THI values, between them being established a reverse proportional variation.

In cows exposed to sun it was recorded a reduction of the milk electric conductivity with 12.42% compared to the values obtained in the morning. This is due to the intensified perspiration in order to realise the thermolysis in warm environment and it is reverse proportionally correlated with THI values.

In cattle exposed to heat stress are recorded changes in milk composition, meaning the reducing in fat content (12.97%, $p < 0.05$) and in protein content (12.25%, $p < 0.05$). The mean values in August shown a reduction of fat content with 8.1% ($p < 0.05$) compared to the mean value for the lactation period. It was also recorded a reduction of the protein content with 5.5% ($p < 0.05$) compared to the mean value for the whole lactation period. The fat and the protein contents variation are close correlated with THI, between them being a reverse proportional relation.

The number of the somatic cells in milk is growing in cows exposed to caloric solar radiation, recording an increasing of 42.96% in August compared to May. The increased number of somatic cells is directly correlated with THI, the increasing of THI determining the increasing of the number of cells. For this reason when we analyse the number of cells to diagnose mammitis we also have to take into account the presence or the absence of the heat stress.

In the end, based on the results obtained and presented in this paper we want to make the following recommendation to reduce or to eliminate the heat stress induced by the solar radiation in all the categories of cattle:

- they will be kept in stable during the day,
- they will have high level ventilation, green fodder, fresh water as much as they want, their access in paddocks have to be avoided in the period with maximum insolation.

The cows kept on pasture will have a grazing program avoiding the hours with high insolation, the cows will have fresh water as much as they want and shadow provided by bowers or by trees.

SUSTAINABLE REUSE OF AGRICULTURAL BUILDINGS IN THE PERSPECTIVE OF EUROPEAN INTEGRATION

IOANA TANASESCU

Department of Civil Engineering and Technical Design, Faculty of Animal Husbandry and Biotechnology, University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, Romania, 1-3 Manastur str.3400 Cluj-Napoca,
e-mail:ioanatanasescu@usamvcluj.ro

ABSTRACT

The paper presents some results referring to the existing constructive solutions that were taken into study within the Bilateral Research Program with University of Gent-Belgium during 2003-2005.

The agricultural built stock, no longer respond neither to the users requirements, nor to the new standards and regulations regarding the animal welfare, environment protection, energy saving and quality of the technological processes and products.

The agricultural sector and especially animal breeding system has to perform its tasks with a view to the protection, preservation and improvement in the quality of the processes, of water, air and soil, in the abundance of bio-diversity and in preservation and enrichment of the future EU landscape.

THE ECOLOGICAL CONTROL OF THE PATHOGENIC AGENT *PHYTOPHTORA INFESTANS* IN THE AGRO ECOSYSTEM IN THE POTATO CROP IN THE CONDITIONS OF TRANSILVANIA PLANE, ROMANIA

Ioan Oroian

ABSTRACT

The ecological agriculture appeared as an alternative to the intensive, conventional (industrialized) agricultural practice, based on the maximization of the production, by using production stimulators, which have a high quantity of energo- intensive character, with a view to a continuous agricultural development, for a prevalent urbane population, who is constantly growing.

The accentuation of intensifying factors, such as the use of synthesis fertilizers in high quantities has got a great contribution and rapid accessibility to plants. The mobilization of some nutritional and biotic reserves from the soil, the introduction of some genes in the plants' genome, which are resistant to diseases, pests and weeds, through the so called genetically modified organisms(OMG), has got a great impact upon the biovariety and the biotic balance of the soil, water, atmosphere and the agricultural products. This has lead to severe consequences through three progressive diminution of the organic matter in the soil through:

- the deterioration of the soil's structure
- the increase of the danger of erosion
- the decrease of meso-fauna representatives (earthworms, collembolas, carabids)
- the increase of the compaction degree and soil settling
- the significant decrease of the soil's natural fertility

There have been caused severe damages to the environment through pollution with nitrites and nitrates in the shallow and phreatic waters, through accumulation of toxic substances and pest killeer residues in the soil, fodders and agricultural products, having severe consequences upon the animals and human's sanity.

As a result of toxines penetration in the soil-plant- animal-human circuit, there have been caused irreversible mutations upon the micro-, mezzo- and macrobiotic fauna with consequences upon the secular balance of the environment and especially upon the human sanity.

The potato crop in the system of ecological agriculture is presented as an ensemble of balanced cultural techniques (technological links), in perfect accordance with the natural laws of environment, in order to obtain a crop of high nutritional and healthy quality.

The experiments have been made in the pedo-climatical conditions of Transilvania Plane, which has got a transitory temperate climate with specific features, determined by the general orientation of the hills and slopes. The village Jucu belongs to a somehow wet and cold climate of the Transilvania Plane, more exactly to the Somes Plane.

The dominant soil is represented by the argic(clay), vertical black earth, which has a succession of Am-Bty -Cca horizons, being a typical silvo steppe soil diorite sands rich in CaCo₃, which offers the soils two basic features, a heavy texture and a high saturation degree in the bases.

The determined agro-chemical indices are characterized through the neutral reaction of the soil, with values between 6.9-7.1 liters (in water), the content of humus being that of 3.56-3.92% in the arable layer, the nitrogen total reserves, being 0.183-0.196%, with a high content of phosphorus (15ppm) and mobile potassium (240 ppm).

As the ecological agriculture in our country is in the beginning phase, there has been done no advanced research for the potato crop in the ecologic agricultural system.

There have been made studies, concerning the preability of the potato crop in this agricultural system, especially referring to the control of the main pathogenic agent, which causes manna to this kind of crop.

The research takes into account the achievement of the following targets:

- the appearance, evolution and manifestation of the pathogenic agents at the potato in the conditions of an ecological crop.
- the identification of other natural products in the disease control
- the behavior of the varieties at the attack of the pest in the ecological crop
- the establishment of the varieties on interest zones.

The potato varieties, which are used in the experiment have been planted with the machine 4SaBP, at 70 cm distance between the rows. There have been planted two rows from each variety: Temptation, The Beauty, Rozal, Redsec, Roclas, Dacia, Rodas, Amelia, Agatha, Sante and Cristian

In the experimental field for controlling the manna there have been done treatments with nine ecological products: nourishing clay, 1%, whey 1/1, bordelese juice 1%,

cooper hydroxide 4kg/ha, potassium permanganate 0.3%, cosmetic clay 1%, copper oxo-chloride 4 kg/ ha.

The experimental results, which were obtained and the statistical interpretation made, show the fact that, in order to control the potato manna, the known classical products remain valid, which have copper as a main active substance (copper oxichloride 4 kg/ ha, cooper hydroxide 4kg/ha, bordelese juice 1%), other products tested by us, which are susceptible of favorable results, either through their pH, or through a pellicular protection or other properties. They didn't turn out to be efficacious, excepting the variant, to which the whey 1/1 was applied.

Among the tested soils, there has also been remarked, that there are five of them adequate for the ecological agriculture: The Robust, Rozal, Redsec, Amelia and Sante, which distinct themselves from the others through a high production and a high resistance degree against manna, during the period and the testing conditions. As a consequence of this experiment, it is desirable that the assortment gets round also with other varieties suitable for this agricultural system.

The application of some unconventional products, susceptible of having control properties upon the pest attack and which affect the foliage of the potato plants, constitutes a perspective alternative, which can and must be considered thoroughly and developed in the context of implementation and enlargement of the durable and ecological agricultural system.

THE PROTECTION OF ECOSYSTEMS OF CVARCINAE FORESTS AGAINST MICROMYCETIS *MICROSPHAERA ABBREVIATA*

Ioan OROIAN, Liviu HOLONEC, Viorel FLORIAN, Laura PAILETTE

ABSTRACT

With a view to assure a good development of the forests, as well as the assurance of a valuable production of high quantity and quality wood mass, it is required a careful supervision and care of the forests from the phyto-sanitary point of view. The phyto-sanitary condition of the forests depends to the greatest extent on the attack intensity of entomophagous insects, which besides the infections caused by the cryptogamic agents, lead to

- a high percentage diminution of the annual growth
- the diminution of the work percentage,
- the destroy of the fruits and seeds
- the debility of the affected plants.

It goes without saying, that all these corroborated with the effects of the abiotic factors (climacteric, edaphic) and with the anthropic effect, being in most cases devastating, leads to the drying of the trees, even of the forests before reaching the ability of being exploited.

The woods cultivation science includes a series of complex measures for the creation, care and protection of the forests, nurseries and forestry plantations with a view to assure a permanent production, as well as the conservation and regeneration of the biological resources.

In this activity of protecting the forests, there has been shown a great interest in the parasite fungi, which grow due to the trees or forestry crops, causing harm or diseases, sometimes having major consequences, especially when there take place mass multiplications or large surfaces infections, which, in comparison with insects, can be observed only after the disease has unleashed.

The preventive and control measures against the effects of these harmful factors is applied differentiated, depending on the forests' features and their social-economical importance.

In the present research, one has in view, the analysis of the phyto-sanitary state of the forests and particularly the pathogenic agent *Microsphaera abbreviata*, which causes the disease, called mildew and which can attack the oak and helm tree with a frequency of more than 80%. Through the performed research there has been tried to prevent and to control this agent in the Production Unity II Ozd from The Pan of the town Ludus, the Forestry Course Tg. Mures, which belongs to the National Administration of the

Forests, Romania.

From the geo-morphological point of view, the territory of the Pen Ludus, lies in the Transilvania Plateau, Sub-unit Mures -Sărmaș-Comlod, The Târnavelor Plateau. Northwards the territory leads to the Transilvania Plain.

As part of the measurements and research performed between 2004-2005 in the forests from the Production Unity II Ozd, there have been used as biological material,

the trees affected by mildew, especially their leaves. Thus the samples were drawn from the soil in the amenagystic unit no. 37 and afterwards they have been brought back to the Phyto-photology laboratories of the University of Agricultural Sciences and Veterinary Medicine in Cluj Napoca. There has been done the evaluation, the diagnosis, the frequency calculation of the attack frequency and degree and there have been settled measures, which, subsequently, have been taken.

This disease is caused by a fungus, which belongs to the class called *Erysiphaceae* (*Ascomycotina* / *Pyrenomycetes* / *Erisiphales*), having a very significant effect, by causing damage not only to the leaves, but also to the stems of the deciduous

trees, such as helms, chestnuts, quercus. These fungi are parasite, causing harm to more than 10.000 species of host plants. The diseases are known under the generic name of mildew. In the present case there has been studied the attack of the fungus *Microsphaera abbreviata* upon the oak trees (*Quercus robur* și *Quercus petraea*).

For controlling this disease there have been used more fungicides: Bumper 250 EC, Systhane 12 E, Karathane LC, Trifmine, Alert. All these fungicides are systemic, less the product Karathane LC, which is a contact product and they are not recommended by the producers to be used in prevent and control the mildew by oak trees.

On the occasion of these treatments, there has been determined the efficacy of the tested products, taking into account the attack frequency and intensity and the attack degree of the fungus before and after doing the treatments.

The product Bumper 250 EC has been used as a standard product, the effect of the other fungicides being compared with this one's. The obtained results have been centralised and then processed statistically.

The experimental results point out the following: the attack frequency on the untreated surfaces (with percentages between 67,5% and 82,3%), is far more bigger than that of the treated ones (values between 7,8% and 12,8%); the best results in controlling this disease have been registered in the case of using the products Trifmine and Alert (with value of 8,6-9,6 %, respectively 7,8-9,8 %), in comparison with the standard product Bumper (9,3-12,6 %); in the case of the analyse of the attack intensity the situation is similar, being totally different on the treated surfaces, in comparison with the witness ones. As for the attack degree, the most recommended product is Trifmine, which has low values (0,17-0,19), in comparison with the other products (0,18-0,29), especially with those registered on the untreated surfaces (3,21-4,28). Excepting the efficacy of the product Systhane within the amenagystic unit no. 37 the Production Unity II Ozd from The Pan of the town Ludus (53,1%), all the used substances have got an efficacy rate between 92,1% and 96,03%. Thus the use of the fungicides is recommended. The most effective product, under all aspects is the fungicide Trifmine, but the choice has to be done, taking into consideration also the price and store conditions.

The economical pressure upon the forests is continually increasing, the forestry being forced to oscillate between ecology and economics, being always in search of harmonization of the two directions.