Abstract book

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Comparison study between romanian and ukrainian labeling of food products. Social, nutritional and medical considerations

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Abstract: International and detailed labeling of food products is a neccessity for modern society. Labels containing information such as chemical and nutritional, starting from ingredients to nutrition facts and calories, determin consumers' decisions of buying.
This paper presents a comparison between some Romanian and Ukrainian food products with analyses of information provided by labels. We chose the same products that could be found both in Romania and Ukraine and we investigated especially the list of ingredients and nutritional facts written on the labels.
We observed that some local products do not have mentioned on their labels the nutritional facts, this aspect being more frequent to Ukrainian products. Even though some products belong to international food chains, in Ukraine it is very hard to read the labels of some products because of the fact that these are not translated in an international circulation language, comparing to Romania, where the products have the label translated in international known language, with some exceptions of some local products.
The paper also highlights the effects of some ingredients to the human body, in strong correlation to medical statistics of nutritional diseases, and not only, in these two countries.

Key words: labels, food products, list of ingredients, nutritional facts.

Aknowledgement: The study was performed in an international mobility supported by FP7-PEOPLE-2012-IRSES, 318946 – NUTRILAB, NUTritional LABeling Study in Black Sea Region Countries project.

Enzymatic proteolysis in technology of gerodietetic food products based on meat

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Abstract: The topicality of the work is to justify the choice of low-grade meat raw material as a matrix for tying together calcium ions. A safe, effective and affordable in Ukraine enzyme preparation is chosen from literature sources in order to increase the number of functional groups in the raw material.

It was necessary to prove the amount of enzyme preparation for efficient proteolysis subject to technological processes and economic expediency. It was determined rational pH parameters, temperature, duration, duty of water curve of environment and amount of enzyme preparation for efficient proteolysis on model systems.

By means of complete factorial test, followed by mathematical modeling in problem-oriented package MathCad, mathematical model of dependence of length and temperature of proteolysis is developed The indicator of amino nitrogen content in the received hydrolyzate of paunch of cattle was selected as the parameter of optimization. The study is conducted and the confirmation of the data in model environments during proteolysis of by-products of the second category (cow tripe) is received.

The results are suggested to use in meat products industry of special food - gerodietetic. The development enables to reduce price of finished product, enrich it with micronutrients and improve it digestion by the human body.

Key words: meat, gerodietetic food products, cow tripe, proteolysis enzyme, collagenase nutritive, cooked sausage.

Studying the ways of harmonization of laws in Ukraine on food labeling with european legislation

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Abstract: The paper deals with the harmonization of Ukrainian legislation on means and rules of food labeling as the part of mechanism of free movement and circulation of goods in the European market, an effective means of quality assurance and food safety and consumers' rights protection.

Key words: technical regulations, national legislation, harmonization, food products, labeling.

Aknowledgement: The study was performed in an international mobility supported by FP7-PEOPLE-2012-IRSES, 318946 – NUTRILAB, NUTritional LABeling Study in Black Sea Region Countries project.

The influence function sous-vide treatment on the form of moisture in large-vegetable meat systems

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Abstract: The current development of the catering industry due to the improvement of the processes of heat cooking of raw materials. One such area is the use of low-temperature hydrothermal cooking food, pre-vacuum-packed in heat-resistant polymer film. In cooking, spread a combination of rice, chicken and vegetable ingredients: onions and carrots, which allows you to get a dish with high consumer properties. During the study, it was determined the amount of moisture needed to reach the desired consistency of the mixture components to increase the yield of finished products, while providing maximum storage periods.

Key words: animal raw materials, semi-finished product, vacuum packaging, heat and humidity treatment.

Innovative approach to the development of food chelator properties

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Abstract: Actual direction of biotechnology is the search and implementation of new fitosorbentov - products of metabolism of plant cells. The introduction of herbal ingredients that contain dietary fiber in food formulations appropriate, due to their enterosorbiruyuschee deystviyu.In this paper the sorption activity of dietary fiber from a variety of plants (non-starch polysaccharide complexes) for heavy metal ions.

Key words: herbal ingredients,chelators.

Artificial intelligence tools used to forecast economic development of small agricultural companies

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Abstract: The evolution of small agricultural companies is highly dependent on two factors: the actual harvest (measured in tons per hectare and depending on various local factors) and the profit obtained (measured in Euro and depending on the market). In order to invest in such an agricultural company, one must know the potential profit it can be obtained, under realistic conditions. The problem of potential profit can be solved using artificial intelligence tools. A review of some artificial intelligence tools (artificial neural networks, expert systems) and their usage in forecasting economic development will be presented shortly in this paper. Then, we will focus on a detailed description of an artificial neural network constructed for this case, and its usage in the field of economic forecast.

Key words: small agricultural companies, economic forecast, artificial intelligence

Optimization of an artificial intelligence tool used to forecast economic development in agribusiness

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Abstract: Agribusiness, or business of agricultural production, is a domain in which profit is affected both by the agricultural production and the distribution of the goods. In the quest of forecasting economic development of an agribusiness investment, the most efficient tools come from the field of artificial intelligence. In this paper, the usage of artificial neural network for economical forecasting will be presented. The accuracy of forecasting provided by this tool will be further improved, by using statistical methods. Thus, a powerful tool will be obtained, which is able to offer accurate response to the question "Does a certain small agricultural company represent a good investment or not?"

Key words: agribusiness, accurate economic forecast, artificial intelligence

Cost-benefit analysis for agribusiness

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Abstract: Cost-benefit analysis is a method used in the process of evaluation a certain economical policy. In monetary terms, it is quantified by the value of all the consequences of the economical policy on all society members. The growing agricultural economic environment referred to as agribusiness requires continuous balanced cost-benefit solutions. This paper emphasize the importance of a correct cost-benefit analysis for agricultural projects. In agribusiness, cost-benefit analysis should consider not only the monetary aspect, but also the environmental impact on the long term. Thus, a pattern will be offered to help on balancing the short-, medium-, and long-term profitable decisions.

Key words: cost-benefit analysis, agribusiness, environmental impact

Usage of expert systems for cost-benefit analysis in agricultural investments

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Abstract: Expert systems are tools created in the field of computer science (more specifically, artificial intelligence) in the wish to simulate the expertise of real experts, and, moreover, to offer a more accurate answer to a decision-making problem than the answer offered by the humans. The advantage on real experts is that the artificial intelligence tool uses all the information that is supplied to it and, moreover, has a guaranteed level of accuracy. This paper presents an expert system used to forecast economic development of a certain agricultural enterprise. Next, its usage for cost-benefit analysis will be shown and its performance will be further compared with the performance of other means for economical forecasting.

Key words: expert system, cost-benefit analysis, agricultural investments

The label - integration element of duality *production-consumption* for agro-foods products

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Abstract: The paper contains some arguments for the duality between the production and consumption of agro-food products. It is noticed some antagonistic interests of manufacturers in relation with the consumers. The label can be found on the food package as an interface between product and consumer, with the information from the producer about the content and price of the product, but especially that have the attractively function for to stimulate the buyer attention. Then it presents some peculiarities of the nutrition labeling of food products, with evidence from countries of the Black Sea region. It makes references to compliance with European legislation and national laws.

Key words: integration, production-consumption, labeling, agro-food, legislation

Aknowledgement: The study was performed in an international mobility supported by FP7-PEOPLE-2012-IRSES, 318946 – NUTRILAB, NUTritional LABeling Study in Black Sea Region Countries project.

Experimental research on the effects of the lyophilization process of food on the environment

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Abstract: Due to the performance obtained in the drying food products, the lyophilization occupy an important place in scientific research. This paper contains the research context with several references to the relationship between food and metallic material support during the process of lyophilization with the monitoring of air quality from the environment in general. In particular, they track changes in the concentration of volatile organic compounds (VOCs). The result contributes to our list of advantages of this method of drying.

Key words: lyophilization, monitoring, environment, food

The analysis of the main economic and financial indicators by application of an efficient management in a company of agricultural products

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Abstract: Term of competitiveness of firms suggests safety, effectiveness, quality, high productivity, adaptability, successful, modern management, superior products, optimum cost. In order to consider a company competitive it is necessary to carry out a more rigorous analysis both of the company and its business environment. Competitiveness is a complex concept that can be defined as "characteristic of a firm to face the competition of other similar firms in a given market." The competitiveness of a company is largely influenced by the ability to understand and adapt as accurately at the surrounded world. The main concepts of assessing a company's performance level that refers to the overall effectiveness of economic activity are: economic efficiency planned or realized performancee; competitiveness of products or company; excellence.
In the globalized marketplace following the creation of the World Trade Organization, a key challenge facing developing countries is a lack of national capacity to overcome technical barriers to trade and to comply with the requirements of agreements on sanitary and phytosanitary conditions, which are now basic prerequisites for market access embedded in the global trading system. The World Trade Organization has adopted two important agreements in these areas: the Agreement on Technical Barriers to Trade and the Agreement on Sanitary and Phytosanitary Measures. With a view to meeting this challenge, developing countries need significant technical assistance to develop institutional infrastructure related to standards, metrology, testing and quality in order to be an able partner in the global trade regime.

Key words: economic and financial indicators, management, agricultural products.

Cost-benefit analysis for projects regarding willow energetic plants

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Abstract: In this paper is presented how cost-benefit analysis can be applied to projects regarding energetic plants, and that these methods can incorporate intangible benefits, e.g., user satisfaction. Cost-benefit analysis (CBA) is defined as the process which identifies and evaluates net benefits associated with alternatives for achieving defined public goals. In discussing the structure of decision problems and the choice of criteria in CBA, it is advised that the net present value criterion is generally accepted as the proper decision criterion to be used in CBA. It is preferred in contrast to annual value because of its clarity and to a benefit-cost ratio because of its superiority and general applicability.

Key words: cost-benefit analysis; net present value, internal rate of return, willow energetic plants.

Aspects regarding the economic analysis of electrochemical degradation of 2,4-dinitrophenol from wastewaters for a potential use in agriculture in order to protect the environment

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Abstract: With increasing global population, the gap between the supply and demand for water is widening and is reaching such alarming levels that in some parts of the world it is posing a threat to human existence. Scientists around the globe are working on new ways of conserving water. It is an opportune time, to refocus on one of the ways to recycle water - through the reuse of urban wastewater, for irrigation and other purposes. This could release clean water for use in other sectors that need fresh water and provide water to sectors that can utilize wastewater e.g., for irrigation and other ecosystem services. In general, wastewater comprises liquid wastes generated by households, industry, commercial sources, as a result of daily usage, production, and consumption activities. Municipal treatment facilities are designed to treat raw wastewater to produce a liquid effluent of suitable quality that can be disposed to the natural surface waters with minimum impact on human health or the environment.
Romania's EU accession involves compliance with the commitments, stipulated in the plan to implement Directive 76/464/EEC and "Daughter Directives" on pollution caused by certain dangerous substances discharged into the aquatic environment of the, the development of the programs regarding the reducing of the pollution in the industrial units and their gradual implementation, in order to "total technical compliance".
Due to the industrial effluents treatment needs expansive physical and physical-chemical treatment, the electrochemical processes, as non-conventional methods, represents a new alternative for wastewater treatment, that replaces the traditional methods.

Key words: soil protection, degradation of agricultural land, electrochemical degradation, carbon-based composite electrodes

Life cycle cost analysis for planting technology in willow culture

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Abstract: The paper presents the results of the application based on Life Cycle Cost (LCC), for analysis of planting technology in willow culture for energy (as SRC), especially in equipment acquisition. The purpose of this paper is to provide for investors one simple application which uses life cycle cost for a system of interest : individual agricultural producers or farms (small or big), system of agricultural associations, and production and business in agriculture equipment), from an early conceptual stage in the product life cycle through to disposal. Also, it provides illustrations on the types of life cycle cost studies that can be conducted and examples to demonstrate the benefits of using life cycle cost method to inform the decision making process. There are considered two typical situations: planting of willow cuttings or planting of willow rods. As usual, three scenarios were estimated in different surfaces of the growing area. The research was possible by the support of FP7 project ROD PICKER.

Key words: Life Cycle Cost Analysis (LCCA), willow, planting machines, cuttings, rods

The analyze of the influence factors on food labeling

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Abstract
The aim of the paper is to to assess the principal elements that determine the factors which can influence on health and welfare of population from nutritional labeling. Assesment was made by applying the psychological experiment method in various fields of nutritional labeling,
referring to different ways of packaging. The main objective was improvement of health and welfare of population, based on experts' knowledge. Another important objective was to help people choose foods for a healthful diet by minimum waste of time and minimum knowledge of chemistry and medicine. For this purpose, a questionnaire with 10 questions for labeling was prepared and completed by experts from food technologies and packaging with answers. The researches were made by the support of the FP 7 project „NUTRILAB". Finnaly, it is proposed one testing approch for food labels.

Key words: ranking factors, labeling, food, psychological experiment method

Aknowledgement: The study was performed in an international mobility supported by FP7-PEOPLE-2012-IRSES, 318946 – NUTRILAB, NUTritional LABeling Study in Black Sea Region Countries project.

Bioenergy sector in Romania – status & prospectus

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Abstract: Today, according with European Commission, one of the key objectives is the use of biomass as principal raw material for bioenergy production. According to Renewable Energy Road Map Impact Assessment (Road Map IA), at European level (EU 27) around 195 Mtoe biomass will be consumed in primary energy to meet the 20% renewable en ergy target in 2020. As EU memeber Romania needs to realize such objectives. The paper analyzes actual status and prospectus of such problem. There are considered opportunities and conditions, risks and threads, in general and special approch. An important object of the analyze were internal barrieres and possible sollutions. Based on present experiences, the paper proposes 10 most important objectives of energy security for Romania, determined after pschicological experiment on 10 specialists. The context and few challengies for bioenergy in Romania are presented also, by given examples from author researches experiences. The papers' content could be used for Romanian next strategies in such field of activities.

Key words: biomass, strategy, risk, opportunities, internal barriers, solutions

Climate change impact on food security

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Abstract: The extreme weather phenomena from the last years prove that the climate order installed during the last tens of thousand of years is on its way to get deranged. In the context of such evolutions and perspectives, it is a need to formulate alarm signals, accompanied by a request in elaborating practical actions to achieving food security in our region. Ecosystem degradation undermines food production and the availability of clean water, among other ecosystem services. Degradation increases the vulnerability of populations to natural disasters, because food is one of society's key sensitivities to climate. Faced with the major risk of not being able to adapt to the sudden and massive eco-climate change, the society has less than ten years to inverse the tendencies, after which it might be too late to act in a decisive manner.

Keywords: climate change, extreme weather phenomena, risk, food security

Educational management in support of the nutritional knowledge development

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Abstract: To ensure effective communication between food producers and consumers, the efficiency of the introduction of nutrition labeling by manufacturers is dependent on the level of knowledge from consumers. This paper presents the context of the problem and a proposed educational strategy on human resources management and the necessary conditions for education of the population in order to understand the messages transmitted by food manufacturers in the consumers' attention.

Key words: management, education, labeling nutrition, food

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Technologies of novel functional foodstuffs for children with high nutritional value and attractive sensory characteristics

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Abstract: The food industry is faced with the challenge of producing tasty foods that are consistent with health status and lifestyle, and which meet consumer preferences and thus ensuring repeated purchase. This requires research to develop new food products and to improve production processing, packaging and proper food chain management. New food products have to comply with nutritional, energetic and safety needs of the consumer.

This requires research to identify key bioactive components in foods and mechanisms to **optimize the level of such bioactive components**. Therefore, it is essential to obtain in-depth knowledge of the nutritional and functional characteristics of foods and diets. This knowledge is also important for improved risk assessments. The investigation of non-traditional, local, and seasonal foods is also important to highlight the impact of certain foods on health, and to develop integrated food with nutritional profile. The innovation in the European food industry through the integration of advanced technologies into traditional food production need the study of the functionality, quality and nutritional value of food including sensorial aspects in production of new foodstuffs, especially for children.

Our research focused attention on the production of optimal children foodstuffs, rich in biologically active components, which have the potential to optimize physical well being and reduce in some cases the risk of disease. We identified the specific bioactive components in non traditional food and raw materials for increasing of nutritive value of foodstuffs for children and prepared recommendations for the optimization of nutritional value of foodstuffs for children. We will study the possibility for increase positive components in food products that are deficient in the normal diet of children and developing technologies of novel functional foodstuffs for children with high nutritional value and attractive sensory characteristics.

We will advocate and promote the implementation of the identified and

developed solutions for diversification the food products for children, promote marketing of a new wide range of high quality products for children.

Key words: foodstuffs for children, functional food, bioactive components, non-traditional raw materials, optimization, nutritive value.

Microbiological studies of bread kvass obtained by tangential-flow microfiltration

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Abstract: Kvass - a traditional Russian drink, which contains a significant number of healthy and nutritious ingredients. Thanks to classic recipes, including a combination of lactic acid and yeast ferment, kvass not only takes the familiar taste and aroma characteristic of this drink, but also has beneficial effects on the human body. Unfortunately, the popularity of kvass in the soft drink market is not so great.
Kvass without any kind of treatment has short biological resistance period. We concluded that the use of membranes with pore sizes 0.4, 0.9 and 1.2 microns is the complete removal of mechanical impurities, yeast cells and lactic acid bacteria; consequently, prolongs biopersistence. Longer shelf life may contribute to increasing the popularity of this beverage.

Key words: kvass, non-alcoholic beverages, health food, biological stability, microfiltration, ceramic membrane.

Investigation of the effect of heat treatment on the low-temperature dehydration of the tissues of fish pond

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Abstract: Currently the industry is catering is in a state of intense development related to the use of advanced technological equipment, increase production of culinary products, as well as the improvement of production technology.

The use of traditional technologies for thermal processing of foods leads to significant irreversible loss of nutritional value, vitamins, minerals, flavor and aroma, as well as significant loss of mass, which is one of the most important technological problems in modern catering . In this case, the traditional ways of cooking are energy intensive and do not provide long-term storage.

One of the promising areas of engineering and technology industry catering is low-temperature heat cooking modes with pre- vacuum food packaging (technology «Sous-Vide» - cooking under vacuum).

The paper presents information on the prospects of the application and development of low-temperature thermo-humid cooking vacuum-packed food. Among the proposed technical solutions a central place occupied by combi ovens - universal thermal equipment, which allows to set and control the temperature, humidity, air velocity in the chamber, the duration of the heat treatment. The totality of these characteristics makes it possible to reduce the duration of the heat of cooking, the simultaneous intensification of the process of heat transfer, which in turn reduces the mass fraction of technological losses of semi-finished and finished products, as well as contributes to the achievement of high -quality finished products.

Key words: animal raw materials, semi-finished product, vacuum packed, heat and humidity treatment, the operating modes.

Development of the structure of intellectual automatic control system

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Abstract: Relevance of the study is associated with reduced energy intensity of the process heat demand by improving the systems and control algorithms of automatic energy management in buildings. A system for power management of individual modules with interaction via the Ethernet, allowing measuring the qualitative and quantitative performance of network communication protocols of different levels of performance monitoring in real time. The difference of the developed intellectual automatic control system consisting of separate modules with interaction via the Ethernet, there is no separation devices for simple and intelligent - all the devices are intelligent, the controller is a separate module, and its functions are performed by the control unit.

The method allows you to keep track of the accident , and allows a single device -operation monitoring network to work with multiple sensors. The proposed method of building intelligent automatic control system with interaction via Ethernet allows you to:

- simplify network configuration by storing control data in the controller;
- reduce the load on the network due to the fact that broadcast packets are sent only when registering for device monitoring network, and the work is carried out only between devices on IP-addresses, without additional identifiers;
- reduce the cost of the system due to the absence in the system of a single device controller.

Key words: automatic control system, the algorithm, the distribution of the time of delivery, energy consumption, energy saving.

Determination of the antioxidant activity of peaches, persimmons, pears and pumpkins

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Abstract: The quality of food is crucial in terms of impact on the body and the length of human life. The antioxidant activity (AOA) can be considered as one of the important aspects of food quality. To investigate the antioxidant activity of the complex was used by the parser "Color Jauza-01-AA", which received a quantitative measurement of the antioxidant activity of research subjects with a standard deviation of less than 3%. According to the results obtained chromatogram.

The results of the experiments the total antioxidant activity of the fruit as well as fruit and vegetable chips. The resulting value of the total antioxidant activity of extracts from fresh fruit less than extracts of fruit and vegetable chips due to different values of humidity, the differences in quantitative and qualitative structural composition of objects studied fruit.

On the basis of the experiments it can be concluded that the use in food chips from the fruit of peaches, persimmons, pears and pumpkins most important for reducing the harmful effects on humans "free radicals."

Key words: antioxidant activity (AOA), fruit chips, drying, peach, persimmon, pears and pumpkins

Fundamentals merchandizing to study the influence conditions and terms feed

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Abstract: The paper discusses the prospects for the use of alternative plant materials in the diet of sturgeons are recipes of full-extruded feed for this group, indicators of quality feed for sturgeon. Received a comprehensive assessment of quality feed products for physical - chemical and structural indicators feed. Optimum terms and conditions of storage of feed produced. Based on the studies it was concluded feasibility of vegetable raw material in the feed, which contributes to: increase the weight gain of fish leads to the replacement cost components included in the feed to cheaper raw materials of plant origin, provided that the nutritional value is not reduced, and the terms and conditions of storage meet the requirements.

Key words: animal feed, the extrudate, sturgeon, shelf life, nutritional, metabolic energy total acidity, acid number of fat peroxide value of fat.

Inactivation of *Saccharomyces cerevisiae* with ultraviolet light. A review

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Abstract: *Saccharomyces cerevisiae* is perhaps the most useful yeast, having been used to baking, brewing and winemaking since ancient times. It is also one of the most intensively studied eukaryotic model organisms in molecular and cell biology. Besides its useful applications, *S. cerevisiae* is frequently involved in food spoilage. It could spoil wine, beer, fruits, vegetables, fruit juices etc. The most applied method for inactivating microorganisms is the heat treatment. Because heat treatment may cause undesirable changes in the quality and organoleptic characteristics of food, alternative methods are being developed to kill spoilage microorganisms, including: high pressure (HP), ozone, pulsed electric fields (PEF), ultraviolet (UV) light, pulsed light (PL), irradiation, ultrasound, supercritical carbon dioxide (SC-CO_2) and combinations of these. This paper aims to review the available literature data and provide a general review of the application UV light on the inactivation of *S. cerevisiae* as spoilage yeast.

Key words: spoilage yeast, ultraviolet light, inactivation, *Saccharomyces cerevisiae*, heat treatment, non-thermal technologies.

Enzymatic hydrolysis kinetic analysis of the various source proteins

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Abstract: The chemical composition marble goby and sunflower meal is presented. The experimental results of enzymatic hydrolysis velocity in dependence of the protein concentration in substrate systems are set. Michaelis constants values for industrial proteolytic enzymes Corolase ® L10 and Corolase ® L7089 are calculated.
It is confirmed expediency of experimental - theoretical kinetic analysis application for protease / proteins congeniality determines in complex dispersion substrate systems.
Experimentally determined that Azov goby proteins are able for more intensive enzymatic hydrolysis by Corolase ® L10 and Corolase ® L7089 than sunflower meal.
It was revealed that microbial enzyme drag Corolase ® L7089 has a higher congeniality to proteins of all the tested substrates than plant enzyme drag Corolase ® L10.

Key words: Michaelis constant, congeniality Corolase ® L10 and Corolase ® L7089.

Possibilities of influencing the results on performance and health of calves with biopolym preparat

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Abstract: The two farms were conducted experiments with added preparation Biopolym FZT for rearing calves. Additions were applied in the operating conditions where the first farm was gradually calves continuously supplemented to the barn. On the other farm was loading section, and after three months, the calves are picked once. Experimental groups were added preparation Biopolym FZT to supply water for the entire group. The first attempt to farm the results were not significant due to the occurrence of diarrheal disease. In the second company in the experimental group were found higher weight + 0,141kg/day gains than control groups. Between the detected blood parameters in the control and experimental groups was not statistically significant. The results were within the reference range. The tendency Impairment of copper in the blood heifers are similar within the region and in the future could have an adverse effect on reproductive performance. On the data logger ammonia and carbon dioxide, located in the barn were no significant differences in measured values. Values of N-compounds in the feces of calves in both were statistically significant. There was a certain tendency in reducing the average values of N-compounds in experimental groups of calves.

Keywords: Calves, Biopolym FZT, weight gain, diarrhea, N-content in waste.

Effects of flaxseed supplementation to lactating goats on milk fatty acid content

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Abstract: The aim of the study was to assess the quality of pastures located in less-favoured areas of Czech Republic and to investigate the influence of that quality on the content of fatty acids in goats milk. Content of MUFA and PUFA of milk fat in experimental group increased. Flaxseed supplementation has an positive effect on increasing of CLA in milk fat.

Keywords: goat, milk, flaxseed, fatty acids.

Possibilities of the use of electrolyzed water in poultry breeding

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Abstract: The paper deals with verification of the effects of the electrolyzed NaCl-water solution where a new possibility for an alternative procedure to disinfect water is provided. The experiment was done in two chicken breeding halls where the solution was used to disinfect the stable premises and at the same time it was applied into the feed water. The effects of disinfection were verified directly in the stable premises at the interval of 20, 40, 60 minutes after application. Staphylococci and Streptococci and Enterococci were inactive always after 60 minutes of effect. There was significant decrease in the number of total number of microorganisms. An evaluation of the qualitative features of the produced chicken meat, focused mainly on the PSE meat disorder, was a part of the examination, too. After the research was finished, the chickens were slaughtered at the industrial slaughterhouse and samples of the meat were taken (gradually 157 pieces in total) from the individual halls and analysed. The determined share in water loss by dripping was the most significant of the monitored indicators, which could suggest a possible development of the PSE problem, however, the meat colour and the pH values did not confirmed this. The values of pH, colour and loss of water (dripping) ascertained, processed by the T-test did not confirm the hypothesis of the assumed possible differences in occurrence of critical values of these indicators in both groups observed. The Envirolyte device for production of electrolyzed water has been patented in the Czech Republic.

Keywords: chicken meat, electrolyzed water, water dripping, disinfection

Evaluation microclimate in the stable national stud farm in Kladruby nad Labem

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Abstract: For the successful breeding of livestock, it is necessary to observe beside the appropriate zootechnics, veterinary care, breeding work, and nutrition and also the values of other components of microclimate, such as dustiness, content of microorganisms in the air and concentration of stable gases, and therefore, this work deals with the measurement and evaluation of amount of carbon dioxide, methane, ammonia and hydrogen sulphide. The measurement of temperature, humidity and dew point in the selected stable, and for the comparison also in the courtyard, took place continuously from 1.4.2011 to 31.3.2012. Because of its technical demands, the measurement of stable gases took place roughly 1x in a month and that in the 24 h cycle. This work should answer the questions, how much is the stable microclimate dependent on the ambient environment - current weather, whether there are suitable conditions in the stables of National Stud-Farm in Kladruby nad Labem with respect to the welfare of horses, how much is the concentration of stable gases in enclosed areas according to the presence of horses changing and, possibly, how much affects the horse breeding the environment.

Key words: stable microclimate, microclimate measurements, temperature, humidity, dew point, airflow, stable gates, animal welfare, the impact of livestock on the environment

Influence of different housing systems on the welfare of calves

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Abstract: The aim of this paper was to find out what the system of the technical solution to housing for calf breeding is the most suitable from the point of view of welfare. There were compared calf house from lightweight steel construction (VTL), calf house from bricks (VTZ), individual sheds (VIB) and individual sheds under shelter (PIB) between each other. We focused on the comparison behavior of stabled calves like a lying and eating time. These behavior were observed in all four seasons. The obtained results show that lying time was very similar in VTL and VTZ. Lying time in VIB was longer than lying time in PIB. Eating time was longer in VTL than VTZ and eating time in PIB was longer than eating time in VIB (without shelter). Overall lying time in sheds was longer than lying time in calf houses and eating time in sheds was shorter than eating time in calf houses. There were significant differences ($p<0,0001$) in lying time between all types of housing systems in every period of day and year. Only in the spring were not statistically significant differences ($p>0,05$) in lying time between VTL and VTZ in the morning as well as VIB and PIB. The most significant differences in eating time were between VIB and PIB in winter ($p<0,01$) as well as VTZ and VIB in autumn ($p<0,001$). At the same time we observed some microclimatic conditions. We focused on the cooling value that refers to the thermal comfort of stabled animals. With a comprehensive examination of all collected and measured values can be recommended to prioritize individual outdoor sheds under shelter and calf house from lightweight steel construction, according to actual economic situation of breeders.

Keywords: calves, individual sheds, claf house, behaviour, cooling value

The influence of parasitic infection on the blood count of the extensively reared sheep

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Abstract: The article view on the effect of the extensive breeding conditions on health state of sheep in foothill and mountain areas of the South Bohemian region. The health state of animal is just one of the main factors affecting the economy and the profitability of farming in a challenging climate of foothill and mountain areas. Very negatively affects the health of sheep presence of parasitic infection in the herd even individuals. Among the factors indicative of the normal process of physiological functions and thus the health of sheep include hematologic and biochemical parameters of blood of animals. Samples of blood and excrements were collected at the beginning and the end of the grazing season and divided by breeds of sheep and sampling time. It was done Faeces examination of excrements and was determined number of erythrocytes and leukocytes, hematocrit, haemoglobin and content of zinc and copper in blood. It was also done differential leucocytes count. Haematological and biochemical parameters were observed for all samples in the physiological range, despite the simultaneous parasitic contagions of examined animals.

Keywords: sheep, foothill region, haematological parameters, blood count

Effect of the new technology of cattle housing Waterbeds on comfort, health and milk production

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Abstract: The study was carried out in the stable for dairy cows and heifers of Agricultural Company Slapy a.s. in the village Lom. Dairy cows and heifers were stabled in free-stall housing, which was reconstructed. It was reconstructed roof, peripheral walls and boxing beds. The original rubber mattresses have been replaced with the new housing technology, dual-chamber waterbeds, which should provide the animals with greater comfort and improve their health, which should also increase milk production in dairy cows. The aim of the study was to determine the effect of dual-chamber waterbeds on comfort of dairy cows and heifers, effect on their health with a focus to feet because animals were often suffered from abrasions and pressure sores hocks. It was also studied the effect of dual-chamber waterbeds on the occurrence of mastitis and somatic cells count in milk of dairy cows and the effect on total milk production of dairy cows in the stable. The study confirmed the reduction in the number of dairy cows and heifers with injuries of feet and the incidence of mastitis. The values of somatic cells in milk were constant. The positive effect of dual-chamber waterbeds was shown with fluent increase in milk production. The animals were calm. It increased the number of cows and heifers lying in the boxes.

Keywords: dairy cows, dual chamber waterbeds, cow comfort, health condition, milk production

The usage of information technology for evaluation of animal welfare

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Abstract: Up to date information systems collect data from technological process, facts about production, reproduction and health of animals. On the base of all figures of these measurable values and evaluation of observable characteristics we can do the classification of the total rate of animal welfare. Physical activity of animals is affected by many factors during the day, especially satisfying basic needs, i.e. feed intake, social manifestations, etc. Vitalimeter is recording physical activity of the animal, including the type of movement, standing and lying time, number of leap.

Keywords: dairy cows, daily routine, physical activity, welfare

Assessment of the Impact of Automatic Milking on the Selected Parameters of Dairy Cows Welfare

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Abstract: The aim of study was to find out the influence of milking by automatic milking system (AMS) on the physiological needs of dairy cows within 30 minutes after milking. Ethological study covered the needs of feed intake, water intake and need of lying down. The need of feed intake in 30 minutes after milking was found at 75.51 % of dairy cows in the barn with AMS. The need of water intake was found at 41.79 % of dairy cows. The percentage of cows, which needed to lie down after milking, was 3.7 %.

Key words: cows, milking; automatic milking system; ethological study; feed intake

Measuring the body surface temperature of animals using a thermographic camera

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Abstract: There are many technological ways and possibilities which we can obtain the body surface temperature of animals. This experiment with dairy cows and heifers was carried out in the agricultural cooperative Petrovice. It was used contactless measurement method using a thermographic camera. Surface temperatures were recorded from three different parts of the animal, from the surface of the core body, the eyes and the udder. The aim of this study was to determine how much the temperature values that are obtained using the thermographic camera are accurate. This possibility of non-contact measurement using the thermographic camera is a simple and quick way to measure. Its accuracy depends on many factors such as particularly good settings of the thermographic camera, a microclimate of environment and an emissivity (the ability to emit infrared radiation) of measured objects. As well as the character and colour of the coat or the degree of muscles play a role and they may significantly affect the results. It was also monitor the correlation of the measured surface temperatures with a rectal temperature, which is an indicative of the internal body temperature and it is in a non-stressed conditions almost constant.

Keywords: body surface temperature, thermographic camera, dairy cows, emissivity, rectal temperature

Utilization possibilities of prebiotics and probiotics in prevention and health care of calves

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Abstract: Care of calves and their health is very important factor for good cattle breeding. Becoming ill whenever during animal's life can cause subsequent side effects. In dairy cattle it can cause especially lower milk production. The aim of our study was to evaluate influence of probiotic agents (Lactovita) and seaweed extracts (Biopolym) with antidiarrheal effects on the prevention of diarrhoea in calves. In the experiment 22 experimental and 22 control calves were observed. Calves were divided into 2 groups just after birth. Both groups were weighted within 2 hours. In addition to the colostrum, the experimental group received 1 tablet of probiotics orally and 5 ml of the preparation of seaweed once a day with the second feeding. Both products were given to each experimental group during first 7 days after birth; the control group was fed as usual. Both groups were observed until the 4th week of life and calves were weighted once a week regularly. Weight gains in grams were recorded into a table. The results of the observed incidence of diarrhoea in the control and experimental groups during the period from the 29th of February to the 20th of December 2008 showed a positive effect of probiotic Lactovita and seaweed extracts Biopolymer. 32% of calves in the experimental group and 45% of calves in the control group became sick. Unfortunately, we could not demonstrate the statistical significance of these differences. The weight gains found in the 4th week after birth were by 37.6% higher in the group with Lactovita and Biopolym than in the control group. The preventative use of natural substances stimulated the digestive tract of calves positively and it had an overall positive influence on their physiological condition.
Keywords: calf rumen, dietary supplements, diarrhoea

Factors affecting the performances of biomass anaerobic digestion process

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Summary: The effect of heavy metals and light metals ions on anaerobic digestion of three agricultural biomasses (two row barley, wheat bran and a mixture of 75 % corn kernels and 25 % corncobs) was investigated in this study. The raw materials were characterized from physico-chemical point of view and their heavy metals content (copper, chromium, nickel, lead and zinc) and light metals ions content (potassium, magnesium, calcium and aluminum) was measured. The effects of these substances on the anaerobic activity were analyzed by measurements of cumulative biogas production and the methane content of the obtained biogas.

Keywords: biomass, anaerobic digestion, heavy metals

Aspects of environmental management and impact factors in the micro food factory at the C.T.I.A. "Terezianum" Sibiu

Ion Laurentiu BUTOI

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Abstract: The work requires continuous improvement of environmental management in the "*Terezianum*" micro factory, as well as the development of environmental standards, which have as their main objective the provision of a common approach to environmental management and identify the methods by which ISO 14001 can help any organization to reach its environmental objectives by providing elements of an effective system of environmental management.

Keywords: Environmental standards, management, methods.

Modeling of cutting process of food products

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Abstract: In the food industry products which have homogeneous or difficult multilayer structure are cutting. Process of cutting for each case has many differences. It is necessary to fix features of movement of a knife in different products behind structure, and to improve regime parameters of operation of the cutting equipment.
Mathematical simulation of movement of a knife in a product on the basis of the power assaying and the decision of differential second-kind equations is spent. For experimental researches installation of pendulum type with a knife that allows to change easily rate of a knife and a store of its kinetic energy is used.
The mathematical and physical model of cutting of food products is conducted. It is shown out mathematical model which determines dependence of cutting effort on the parameters of regimes of process and structurally mechanical properties of product. Modeling is conducted both for homogeneous products and multi-layered which have a thin, but strong shell, here is a rapid change of cutting effort. At a physical model explored of cutting on the devices of pendulum type, that allows easily to change the parameters of regimes and cutting terms. Certainly cutting effort and rational terms at which spending energy go down and cutting quality rises. Results are applied at development of construction of equipment for cutting of food products.

Keywords: cut, force, modeling, food, equipment.

Development of integrative thinking of students in higher education for labwork. Case study: determining the alcoholic concentration of some fermented cereal-based products

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Abstract: Currently, the amount of theoretical and practical information to be sent to students from engineering food specialty is increasingly greater. For this reason it is important to use teaching methods to develop students' ability to generate creative solutions through the effective use of knowledge gained from fundamental disciplines. Laboratory practical work, as teaching-learning experimental method, allows the utmost hierarchy and fixing of knowledge, and developing team spirit, too, much needed in the management of food processes. In the case study presented in this article shows how, using different diagrams of work to determine the alcohol concentration of fermented cereal-based products, it is stimulate analytical and intuitive thinking of students (clearer indication of the data problems, establish connections, observe the relationship, improving individual and collective learning motivation). Also, there has been getting better results from various forms of assessment/examination to the discipline of laboratory work (*Technologies in fermentation industry*). Students responded to a questionnaire assessing their interest for lab work before and after the case study, and found its increase. In conclusion, the proposed approach for teaching laboratory work entitled to The determine the alcohol concentration of some fermented cereal-based products has witnessed the development of integrative thinking of students in higher education for lab work and generating competitive advantage.

Keywords: lab work, alcoholic concentration, fermentation, cereal-based beverage

Comparative analysis of the classification systems efficiency for food products used in the present at international level and also in our country

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Abstract: At enterprises level that have as main activity the production of food products using various types of classifications according to their intended use. We found that most of these classifications are based on such factors as: nature of the raw material, degree of processing, process of manufacturing, purpose of use. Although they are structured based on the same criteria, these classifications finally contain different groups of products. If, however they contain the same product groups, we acknowledge that these products are identified by different codes. All these differences lead to slow data processing regarding the range of goods produced and sold by the specific entity, as a result of using many codes for the same product, for different situations.

Keywords: codification, classification, systems, food products

Considerations about aerobic and anaerobic treatment of the waste water from meat industry

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Summary: Wastewater (effluent) from abattoir has a high concentration about 45% soluble and 55% coarse suspended organics. Most of the organics are from blood and ofals. This paper presents some considerations about the applying the biological methods (aerobic and anaerobic) for wastewater from slaughterhouse, meat processing and packing industries.

Key words: effluent, influent, wastewater, slaughterhouse, aerobic and anaerobic methods

Compliance with labeling legislation of the Republic of Moldova in the field of confectionery products

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Summary. This article presents the basic principles of food labeling, especially of confectionery products, such as the consumers' right to non misleading information and informed choice, and the harmonisation of national laws. The control on respecting the compliance of information written on product label is made by competent authorities for execution of official control of foodstuffs in the Republic of Moldova. The relevant national regulations are given, and references and websites given for access to full texts. The results of critical surveys on the present implementation of confectionery products labeling are summarised, together with the corresponding recommendations for improvement.

Key words: confectionery products, label information, technical regulations, national laws

Presentation of Gouda cheese manufacturing technology in the romanian technologies

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Abstract: Cheese is the ripened or unripen soft, semi-hard, hard, or extra-hard product, which may be coated, and in which the whey protein/casein ratio does not exceed that of milk, obtained by: (a) coagulating wholly or partly the protein of milk, skimmed milk, partly skimmed milk, cream, whey cream or buttermilk, or any combination of these materials, through the action of rennet or other suitable coagulating agents, and by partially draining the whey resulting from the coagulation, while respecting the principle that cheese-making results in a concentration of milk protein (in particular, the casein portion), and that consequently, the protein content of the cheese will be distinctly higher than the protein level of the blend of the above milk materials from which the cheese was made; and/or (b) processing techniques involving coagulation of the protein of milk and/or products obtained from milk which give an end-product with similar physical, chemical and organoleptic characteristics.

Ripened cheese is cheese which is not ready for consumption shortly after manufacture but which must be held for such time, at such temperature, and under such other conditions as will result in the necessary biochemical and physical changes characterizing the cheese in question. Mold ripened cheese is a ripened cheese in which the ripening has been accomplished primarily by the development of characteristic mold growth throughout the interior and/or on the surface of the cheese. Unripen cheese including fresh cheese is cheese which is ready for consumption shortly after manufacture *(Majdik Alexandra, 2013).*

Gouda is a ripened firm/semi-hard cheese in conformity with the Codex Standard for Gouda (*CODEX STAN 266-1966*) and with the General Standard for Cheese (*CODEX STAN 283-1978*). The body has a near white or ivory through to light yellow or yellow color and a firm-textured (when pressed by thumb) texture, suitable for cutting, with few to plentiful, more or less round pin's head to pea sized (or mostly up to 10 mm in diameter) gas holes, distributed in a reasonable regular manner throughout the interior of the cheese, but few openings and splits are acceptable. The shape is of a

flattened cylinder with convex sides, a flat block, or a loaf. The cheese is manufactured and sold with a dry rind, which may be coated.
For Gouda ready for consumption, the ripening procedure to develop flavor and body characteristics is normally from minimum 1 to 12 month at 10–17 °C depending on the extent of maturity required. Alternative ripening conditions (including the addition of ripening enhancing enzymes) may be used, provided the cheese exhibits similar physical, biochemical and sensory properties as those achieved by the previously stated ripening procedure (*Noje, 2010*).

Key words: Gouda cheese, technology, process, dairy

The bases of harmonization of regulations on food production and labeling in the Customs Union within the Eurasian Economic Community

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Summary: The Eurasian Economic Community (EurAsEC) is an international economic organization created to effectively advance the process of forming a Customs Union and Common Economic Space by member states and also to implement other goals and objectives connected with the enhancement of integration in the economic and humanitarian spheres.One of the major challenges for the successful functioning of the common customs space of the members of the Customs Union,is the harmonization and unification of the legislation, including food legislation of the countries - members of the Customs Union. Unification of the legislation related to the labeling of food products will promote the trade and will ensure the awareness of the consumers.

Key-words: Customs Union, Food legislation, Food labeling.

Heat-mass transfer in bread baking process

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Abstract: The problem of mathematical model designing of the heat-mass transfer processes in bread baking is considered. The analytical part of mathematical model (analytical model) is submitted. The mathematical model is focused on the modern computer technologies using.

Keywords: mathematical model, process of heat-mass transfer, multicomponential system, analytical model

Perfection of equipment for improvement of rusk wares

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Abstract: The necessity of complex perfection of process of production of rusk warest comes up from the traditional method of production, wide usage of hand labour and bulky equipment.
The process of mixing of dough, treatment of dough purveyances is investigational by us. It is set that the intensive mixing of dough allows to shorten duration of his fermentation, the using of dynamic method of loosen of dough.
On the basis of the research of mixing and extruding processes of the gas-filled dough we propose the design of mixing-fermentation-forming unit, which allows to combine the processes of continuous intensive dough mixing, aerated dough pieces fermentation and formation directly to the baking plate.

Keywords: mixing, treatment of dough purveyances, mixing-fermentation-forming unit

The design and management of processes in the manufacture of milk-based products in the micro factory “Terezianum"

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Abstract
The work consists of hygienic quality (microbiological-NTG, NCS, positive coagulating staphylococci, coliform bacteria) from raw milk used to manufacture dairy products of superior quality in “Terezianum", micro factory, in different experimental conditions, different from individual households and farms from which the milk is collected.
It was determined the micro flora, milking and transport vessels, mammary gland and the effect of various substances of decontaminated sanitation over the quality of milk.

Keywords: Measures of hygiene, health rules, micro flora.

Milk and dairy products labeling in Romania

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Summary: The present essay contains research and experimental investigations regarding the labeling process of dairy products in tight relation with the national and European legislative requirements. Two methods have been used during the marketing research regarding the information present on the labels of alimentary products: the method based on documentation-observation and comparative analysis of data and information collected from the consume market in Sibiu, 8 supermarkets, 4 residential markets and 3 alimentary products warehouses, all representative for the city of Sibiu. The method based on documentation and observation has been carried out using the observation sheet and contained the following analysis criteria: The name of the product, Country origin of the product (location of the producer). The list of ingredients mentioned on the product and Observations about Languages. Synthesizing the results and the conclusions emerged as a result of the marketing research carried out with the purpose of contouring a labeling model of alimentary products, it can be stated that the dynamics of the alimentary products market in Romania is moderate and restrained by the economical and social factors and even by the still reduces promotion of a healthy alimentary education, with the complementary protection of human health and environment.

Key words: dairy product, labeling, European requirements, ingredients, languages

Aknowledgement: The study was performed in an international mobility supported by FP7-PEOPLE-2012-IRSES, 318946 – NUTRILAB, NUTritional LABeling Study in Black Sea Region Countries project.

The nutritional labeling of the dairy products in Romania, tendencies and perspectives

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Summary: The main goal of the present essay is to improve the degree of information through more efficient labeling of the alimentary products. The observation method has been used for the establishment of the offer of milk and dairy products class on the Romanian market during 2013, and the investigation stage consisted of data collection from labels and their graphical interpretation. The 3 concern groups regarding the classification of the chosen products have been: Any special storage conditions and/or conditions of use, % of Saturated fat specified on product and % of Salt specified on product. The label of the products has to offer the consumer the necessary, sufficient, veritable and easy to compare information, which will allow them to chose their alimentary product according to their exigency, financial possibilities, to know the eventual risks they may be subject to, so that they will not be mislead.

Key words: dairy products, labeling, nutritional information, storage information

Aknowledgement: The study was performed in an international mobility supported by FP7-PEOPLE-2012-IRSES, 318946 – NUTRILAB, NUTritional LABeling Study in Black Sea Region Countries project.

Effect of biologically active substances formed by *Bacillus coagulans TI* on the growth of crops

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Abstract: The influence of cultural liquid of bacteria, *Bacillus coagulans TI* on the growth of several crops are studded. It was established that during the submerged cultivation on glucose-peptone medium these bacteria form gibberellins and amino acids. Pre-sowing treatment of seeds with diluted cultural liquid causes the stimulation of plants growth and improves the quality of plant biomass.

Key words: phytohormones, bacteria, protein in plants, structure of a biomass

The study of the baking ovens by computer simulation

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Abstract: Configuring ovens for baking bread is a complex scientific and industrial problems. Find the best modes of operation allow computer simulation of aerodynamic and thermal processes in the heating ducts and the baking chamber. Shows an example of a motion study of heating gases identified areas of attention, shows the typical problems and their solutions.

Keywords: bake, bread, gas movement, computer simulation, optimization.

Control and command of starch hidrolysis process by using an expert system

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Abstract: An expert system for the process of starch hydrolysis (liquefaction and saccharification) was developed, in order to assist the decisions in the command amd control of the starch hidrolysis process. Experiments were performed to describe the starch hidrolysis, to characterise the products and to build the bioprocess model. The expert system realises the collection, analysis, ordering and storage of informations generated during the experiments on starch hidrolysis. The expert system was structured on three levels: PostgreSQL as a backend, D2RQ as middle tier and Seaside as frontend. The system was used to store the informations about the liquefaction and saccharification processes in order to help the food engineers to choose the condition for these operations. The tests had shown that the implemented expert system provides support for structured data storage, distributed acquisition of the scientific data generated by the researchers, support for the generation and storage of knowledge on the starch bioconversion.

Keywords: Expert system, semantic Web, starch, hydrolysis, liquefaction, saccharification

Acknowledgments. This work was co-financed from the European Social Fund through Sectoral Operational Programme Human Resources Development 2007-2013, project number POSDRU/89/1.5/S/63258 "Postdoctoral school for zootechnical biodiversity and food biotechnology based on the eco-economy and the bio-economy required by eco-san-genesys".

Researches regarding the grinding degree related to the middlings yield, in the wheat grain breaking process

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Abstract: Breakage of the wheat grain during first break roller milling depends on the characteristics of the wheat (including the distributions of grain size, hardness and moisture content) and on the design and operation of the roller mill (including roll speeds and differential, roll disposition, fluting profile, number of flutes, fluting spiral, roll gap, the degree of roll wear and the feed rate). The effects of these factors manifest in the grinding degree of the particle exiting first break, the compositional distribution of these particles (as large particles tend to be richer in bran, while small particles are pure endosperm), the power required to mill the wheat and the rate of roll wear. Grain milling practice knowledge in a passage way between the grinding rollers, it is not particularly important for the technology miller. It is important to breaking efficiency, apeciate as a difference between grain fed and discharged fractions after breaking. In this work paper, the first break was performed by a new designed micromill which can perform in the grinding process of the wheat and of the middling too, for the appreciation of the grain resistance (specific surface energy consumption) in the milling process, in the same conditions as in the milling industry. The adjustment of the roller characteristics can be done for each type of milling product (grain, semolina, bran). The grains are in the same time under the compression and the shearing efforts.The energy consumption is represented by one single value for one pair of rollers.

Keywords: wheat grain, grinding degree, breaking, middlings.

Variation in vitamin C content of different varieties of Sea Buckthorn (*H. Rhamnoides* ssp. *Carpathian*) from spontaneous flora of Romania

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Abstract: Sea buckthorn berry is among the richest food sources of vitamin C, even though the genetic background, harvesting date, growth conditions,storage and processing,greatly affect its concentrations and oxidation state The content of vitamin C found in the sea buckthorn has been researched and tested in important areas of medicine, results are knowed, so this work is focused to show the vitamin C content in some varieties of wild flora. The concentration of vitamin C in fruit varies according to species, geographical location, and physiological maturity which is reason that have been discussions on sea buckthorn distribution in our country. In Romania it was found *H. Rhamnoides L., ssp. Carpatica* and more varieties of berry were collected from several counties in Romania. The vitamin C content in sea buckthorn varieties cultivated in Romania from different regions was measured using the titration method with 2,6 -diclorfenolindofenol (use the standard method ISO 6557-2:1984) Sea Buckthorn berry had vitamin C content ranging from 300-1500 mg%, and shows that the berries from Arad county had the highest content of vitamin C, while the lowest was recorded in berries from the Maramures county. These results were compared with results of other species of the literature, and also evidence the distribution area of the *H. Rhamnoides L.,* because it is estimated that currently in Romania are over 300 ha of plantations with sea buckthorn. The studied cultivars of sea buckthorn from Romania have proven to be potential sources of sea buckthorn berry with high content of vitamin C

Keywords: sea buckthorn,vitamin C,*ssp. Carpatica* ,varieties, flora

Research regarding aluminium eloxation from phosphoric acid electrolyte

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Abstract: The study presents the influence of production parameters on the aluminium eloxation from H_3PO_4 solution. The thickness and aspect of the deposited Al_2O_3 were determined. The electrodeposition experiments was to determine the optimum conditions for the producing of bright, continuous, adherent and compact Al_2O_3 layers.

Keywords: eloxation, aluminium, Al_2O_3, phosphoric acid, thickness

Physical chemical characterization of wines produced from Feteasca Regala and Riesling Italian processing by four different technological

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Abstract: The aim of the research was to study the influence of the physical-chemical and biological factors on the maceration operation order to obtain wines white high quality in vineyard Dragasani and the statistical interpretation of the obtain results in order to validate their results. In this sense we regard to high quality obtained from physical-chemical properties. Feteasca Regala and the Riesling Italian are cultivars aromatis, the young wine emitting an original flavor, stylish floral type, easy to recognizant (Cotea et al.,2003; Tiţa, 2004; Cotea et al., 2006). The must is lower in sugars, the fermentation period is short around nine-ten days. The maximum period was recorded for the fermentation must with cryophilic yeast, Fermol Cryoarom (Ioia, 2009). The pleasant taste well contoured full of fines, it is sour and brings the summer of the Romanian apple, which confers a unique personality. In the evaluation of the impact on that the different oenological treatments it can have on the composition of the acids in wines was observed that the acid find in the concentrations where the level of g/L had a less significant change, regardless of the treatment to which the wine has been exposed, and those with the small concentrations (of the level mg/L) has significantly varies, which can depend on the type of the win (Niculaua, 2010).

Keywords: vineyard Dragasani, maceration, withe wine, oenological treatmens

Optimizing the operation of maceration to obtain quality white wines

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Abstract: This study monitors the physico-chemical properties of wines from Dragasani under the influence of pectolytic enzymes in various temperature conditions. during maceration contact is made between the grape skins and selected the optimal time leads to wines with more pronounced floral character. The physico-chemical extraction maceration leads to a more pronounced specific compounds, the time of maceration is very important in this case. The curing time is of great importance in producing varieties Muscat Ottonel and Romanian Tămâioasă primarily for successful extraction of aromatic components from grape. As noted in the literature flavored grapes contain large amounts of terpene compounds are in free form or bound. To optimize the technological process is able to extract these compounds and to achieve a harmonious and balanced wine. The variants considered in the study presents the results of physico-chemical and aromatic wines obtained from the Muscat Ottonel and Tămâioasă Românească, which took into consideration both during maceration and the use of selected yeasts and enzymes, which form the basis for the selection of the optimal procedure for obtaining aromatic white wines in Drăgăşani Vineyard.

Keywords: maceration, optimizing, aromatic wines, odour

The chromatographic detection of the rutin in the aromatic and semi aromatic autochthonous musts variety

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Abstract: The aim of the present essay is the detection of the phenolic rutin compound, a phenolic compound with antioxidant properties, in musts coming from autochthonous variety. The detection and quantification of the rutin has been carried out through chromatographic methods HPLC, resulting the identification in three must variety, Sauvignon blanc (SB), Feteasca regala (FR), Pinot noir (PN), coming from Recas vineyard. The obtained values have been situated between 1.828 ng/l for Feteasca Regala and 200.945 mg/L for Sauvignon blanc. The rutin is the glucose form of the quercetin flavonoid, being considered by the specialists as a powerful antioxidant, with direct implications in the amelioration of capillary bleeding, which are a complication in cases of hematuria, diabetic retinopathy, petesiale hemorrhage, hemoptysis, digestive hemorrhage; the growth in capillary fragility associated to allergic disease, the capillary degeneracy associated to hypertension and arterosclerosis; gum bleeding. The quantification of the rutin in musts through chromatographic methods leads to the premises of some exact and secure determinations, the above presented methodology making the identification and detection of those so valuable components possible, even in small amounts.

Keywords: rutin, phenolic compounds, musts, HPLC

Researches on physico-chemical and microbiological characteristics of sheep and cow milk from Cristian farm, Romania

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Abstract: This study was conducted over a period of three month in the Cristian farm, Sibiu. For the physical, chemical and microbiological analyzes were taken a number of 15 samples per month. From physico-chemical point of view the content evolution of fat, not fat solid substance, density, protein, freezing point, temperature, lactose, conductivity, pH, water addition was followed. Samples were analyzed using the milk analyzer Ekomilk Total of the Research Centre in Biotechnology and Microbiology of the "Lucian Blaga" University. The microbiological contamination of milk was done by determining the total number of bacteria and coliform bacteria. From microbiological point of view it was observed that these conditions are largely met, but a more rigorous control on the cleanliness of utensils and of the staff is required.

Keywords: sheep milk, cow milk, coliform bacteria, physico-chemical indicators

Studies and researches concerning the possibility of using Hydrogen in turbo engines

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Abstract: The paper aims to study the main aspects related to using Hydrogen as fuel in thermical engines, the advantages and disadvantages of using it as fuel and the technical posibilities of adjusting it, Hydrogen used as supplement at the main fuel and Hydrogen used as working fluid.
As a perspective, it can be considered using Hydrogen as thermical agent in a closed energetic flux with thermo- chemical compression of Hydrogenin a hybrid heat changer, based on the heat of burning products of thermical engines. The experiments made showed that using such a way of using the heat of burning products of turbo engines can assure the increase of power and efficiency of the whole instalation with 20 %.

Study concerning the possibility of the storage of Hydrogen as fuel in vehicles

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Abstract: The paper wants to research the technical possibilities of storage Hydrogen as fuel in vehicles. There are known 3 technical possibilities of storage: in pressure tanks, in cryogenic tanks and in containers with metal hydrates.
From these 3 possibilities, the cryogenic tanks have the most favorable mass rate, but it is complicated and expensive. The hydrates present the advantages of the lowest primary energetic consumption, they accept simple and efficient supplying systems.
The paper also studies the possibility of producing Hydrogen in vehicles.

Use of industrial wastewater as substrate for probiotics

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Abstract: In this paper a process for using the wastewater as substrate for probiotic bacteria was investigated. Attempts were made to exploit wastewater resulted at the potato processing for chips or fries production, as raw material, because of its valuable content in starch and proteins. The bacteria were isolated from probiotic products found in pharmacy for oral administration to humans after the treatment with antibiotics. Fore the isolation of probiotics, a selective substrate based on potato starch was used. Two probiotic bacteria were isolated from the product Eubiotic. Two types of experiments were made: with and without starch enzymatic hydrolysis and the enzyme used for hydrolysis was a β-amylase from barley (Optimalt BBA). The total organic substances content, the variation of pH and the optical density (as indicator of cells formation) were analysed. The results indicated that the potato wastewater is a valuable substrate for both types of bacteria and can be used for their cultivation. The addition of starch-degrading enzymes in the initial wastewater substrate doesn't stimulates significantly the cells grow and the consumption of substrate.

Key words: potato, wastewater, probiotic bacteria, β-amylase

Fruit surface tension estimation from contact angles measurements

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Abstract: Surface tension of fruit and vegetables surfaces is important in basic postharvest treatments such as washing, aqueos dipping and coating. Knowledge of surface tension values can provide reference targets for treatment formulations when complete wetting is necessary. Evaluation of surface tension was done on apple, pear, nectarine, tomato and bell pepper fruits to observe the influence of type of fruit, cultivar and maturity stage. Calculated surface tension was obtained using Zisman and Fowkes methods by measuring contact angles of a series of pure surfactants on the fruit surface and comparing with a reference paraffin surface. Rezults indicated that surface tensions depended on type of fruit and cultivar. Surface tensions in all cases were lower than 30 dyn/cm, indicating the hydrofobic nature of the epicuticular surface of the fruits tested.

Key words: Surface tension, contact angle, fruit surfaces

Measurements of fruit surface wettability to determine possibilities of washing, dipping and coating

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Abstract: Wettability is an important factor to be considered in postharvest treatments such as washing, aqueous dipping and coatings. Apple, pear and nectarine were evaluated for weeting behavior and surface tension at room temperature. Wettability was measured by contact angles of water and surface tension was calculated by measuring contact angle of methylene iodide and water using Good-Girifalco-Kaelbe method. Results indicated that weeting behavior of most fruits depended on cultivar, with a contact angle ranging from 75^{o} to 137^{o}. The wetting of fruit surface and the calculated surface tensions appear to be influenced by the nature of the chemical groups exposed on the surface of the cuticle and by the surface roughness, as evidenced by the high values of some contact angles.

Key words: Wettability,surface tension, contact angle, fruit surfaces, roughness

Sorption properties of some Romanian gingerbread

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Abstract: Water activity of gingerbread is very important for keeping the product freshness and shelf life. Water activity is influenced by composition, water content and temperature. The water content of gingerbread could vary according with storage condition. i.e. rH. 11 gingerbread samples were analysed. The water content and water activity lies between 7.0 and 12.6% and respectively 0.590 and 0.715. The sorption isotherms were determined at 30°C by gravimetric method. The moisture sorption is influenced by composition, especially sweeteners and humectants. Honey and invert sugar have the same impact on gingerbread higroscopicity.

Keywords: water activity, moisture, sorption isotherm, gingerbread

Common biopolymeric blends with aplications in food packaging: A review

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Abstract: This paper presents a review on the recent advances in the research and development of polymer blends that are used in various applications such as food packaging.
Bio-based and biodegradable polymers have a wide range of applications, the most common are: in food packaging, in biomedical applications and in agricultural fields. The most common of the biodegradable materials are blends of starch or thermoplastic starch (TPS) and aliphatic/aromatic polyesters, such as poly (lactic acid) or PLA and polyhydroxybutyrate (PHB).

Key words: PLA/PHB blends, PHB/starch blends, PLA/starch blends.

Spa salted water decontamination by unconventional methods

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Abstract: This paper presents experimental researches based on non-ionised radiation impulses of high intensity applied on salted water samples collected from 4 lakes: Crisan lake, Negru lake, Randunica lake and Brancoveanu lake all of them from Ocna Sibiului, Sibiu county. The purpose of the study is to identify the possibilities for water decontamination of the above lakes using high intensity pulse light sources. The aim of the study performed is to treat water contaminated with pathogen bacteria highly resistant at ultraviolet (UV) and thermal treatments by using lamps with of optical radiation pulses (IRO) in order to test the possibility of destroying bacteria using an a thermal method. Tested bacteria were: Bacillus stearothermophilus., Bacillus subtilis., Bacillus pomilus in vitro and coli forms and streptococci found in salt water lakes at Ocna Sibiu. This paper aims also to present the optimization study facilities for decontamination of drinking water based on the results of our investigation on bacterial micro flora using IRO.

Key words: water decontamination, optical radiation, pulse light sources

The role of transportation in the agrifood technological processes

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Abstract: The paper emphasizes the role of transportation in the agrifood processes, both transportation as a displacement technological process, and goods transport and manipulation (raw materials, materials, equipment, intermediate products, final products etc.). The initial objective and variable influence factors of the agrifood technological process are analyzed, in accord with the specifics of the transport and manipulation means, as well as the transport and manipulation technological processes. The result of this analysis is the optimal process variant.

Key words: agrifood technological process, transportation, manipulation

Quality assurance in beer production from a microbiological point of view

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Abstract: All breweries need quality assurance to maintain confidence in the beer they produce. It is required for a variety of functions from checking the quality of the raw materials, through monitoring beer production and packaging operations, to checking final product quality.
There are essentially two approaches to microbiological testing, the conventional techniques that involve inoculating a solid or liquid medium with a brewery sample, and after incubation, examining for the presence of absence of growth. General-purpose media for the cultivation and identification of microorganisms can be prepared from wort or beer but commercial media provide for consistency and ease of use. The monitoring of all production processes from incoming goods inspection through actual production right up to outgoing goods inspection is of vital importance for end-to-end quality management in the brewing industry. This paper reviews the main risks of microbiological contamination of beer and emphasizes the measures that are needed to eliminate these risks.

Key words: Beer production, quality, microbiology, water, malt, hops.

Concentration of the whey by membrane distillation

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Abstract: The results of experimental researches of whey separation by membrane distillation are presented in this paper. The dependences of specific productivity of MFFK-3 (Russia) on the quantity of dry matters have been obtained and compared with model solutions of lactose and whey, purified from proteins. The influence of natural convention on the specific productivity of used membrane has been studied. Whey solutions with 58 % amount of dry matters have been obtained that create some prerequisites for the membrane distillation application on industry scale.

Key words: membrane distillation, whey, lactose