book of abstracts

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Foreword

The quality of each person's life, as well as the entire evolution of a society, depends on the nutrition and psychical health of the human being. The world is nowadays confronted with a demographic explosion, concomitantly with a planet-wide accentuation of agricultural and food deterioration. This is the reason why we have to be prepared, ***in the XXI-th century****, to face the Global and Local Challenges in Food Science and Technology, generated by the quantitative and qualitative food-related needs.*

Under this them, more than 100 papers were received on the topics of food production, food processing, food quality and safety, nutrition, engineering and design, innovative technologies.

The ***BIOATLAS Conference*** *aims to keep the quality of an integrated, multidisciplinary and interconnected international conference on the topic of agri-food fields and it also drawn the interest of numerous specialists who continuously attempt to identify solutions to difficult contemporary problems.*

The impressive international participation encourages us to believe that the ***BIOATLAS Conference*** *may have positive echoes emerged from the experience and contribution brought by all* ***international participants*** *from Italy, Bulgaria, Hungary, Republic of Moldova, Russia, Ukraine together with researchers from Romania.*

This book of abstracts contains selected abstracts of papers presented during the ***BIOATLAS Conference.***

The program for this conference required the dedicated effort of many people. Firstly, we must thank the authors, whose research efforts are herewith recorded. Secondly, we thank the members of the Scientific Committee and the additional reviewers for their diligent and professional reviewing. Last but not least, we thank the invited speakers for their invaluable contribution and for taking the time to prepare their talks.

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METHODS FOR THE IDENTIFICATION AND QUANTIFICATION OF MOLECULES RESPONSIBLE FOR BENEFITS AND/OR ADVERSE EFFECTS OF PLANT FOOD SUPPLEMENTS

PATRIZIA RESTANI[1], MIHAELA BADEA[2], GIANFRANCO FRIGERIO[1], FRANCESCA COLOMBO[1], CHIARA DI LORENZO[1]

Food supplements, and in particular those containing botanicals (Plant Food Supplements, PFS), have received an increasing interest by consumers all-over the world. The wide diffusion of food supplements through different distribution channels had raised concerns on their efficacy and safety. Public institutions responsible for the safety of consumers must face different peculiar aspects: 1) the consumers' stereotype about "Natural is always safe"; 2) the fast turnover of products on the markets; 3) the equivocal concept of "quality"; 4) the appreciation by consumers of "parallel" markets, due to the lower cost and, for some categories of PFS, the privacy.

Analytical methods are necessary both to assess the efficacy of a specific product, aimed to validate a nutritional/functional claim, and to search for molecules responsible for adverse effects or poisoning. In the first case, methods must be easy and relatively inexpensive to allow a quality control by the producers and a routine surveillance of the marketed food supplements. Among the most important analytical difficulty, the role of matrix is crucial to guarantee reliable data. In case of poisonings, the most important aspect is the identification of suitable biomarkers and their measure in low quantity and in short time to allow a quick clinical treatment.

This presentation will describe two studies performed in our department: 1) the case of PFS containing seaweed (mainly *Fucus vesiculosus*) used in products aimed to reduce body weight; 2) the case of poisoning due to *Ginkgo biloba* derivatives and in particular, ginkgo seeds quite usual in the diet of Asian population and involved in a certain number of poisonings of young children.

Part of this research has received funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 245199, and has been carried out within the PlantLIBRA project (www.plantlibra.eu). This abstract does not necessarily reflect the Commission's views or future policy in these areas.

Keywords: plant food supplement effects, PlantLIBRA project.

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BIOACTIVE COMPOUNDS FROM MUSHROOMS; POTENTIAL TO DEVELOP FUNCTIONAL FOOD PRODUCTS

MARK SHAMTSYAN[1]

For centuries mushrooms have been used not only for their nutritional value but also for healing potential.

At present there are at least 300 species of mushroom that are known to have various therapeutic properties, which can be used as dietary supplements or for fortification of food with functional compounds.

Besides well known immune modulating and anti-cancer properties, mushrooms possess other valuable properties including antioxidant, anti-hypertensive, cholesterol-lowering, liver protection, anti-obesity, anti-inflammatory, anti-diabetic, anti-microbial and some others. Mushrooms also can be a source of various enzymes useful for food industry.

Keywords: Mushrooms, bioactive components, immunomodulators, antimicrobial hypocholesterolic, antidiabetic, hepatoprotective, antioxidant activity, milk-clotting.

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DETERMINATION OF UPTAKEN ELEMENT CONCENTRATIONS IN DIFFERENT PLANTS USING BY WEB BASED APPLICATION

L. VÁRALLYAI[1], J. THURI, B. KOVÁCS, SZ. BOTOS

The applied informatics had undergone a significant development at the end of XXth century, which is allowed analyzing of soil pollution by computer controlled system. On account of opening of the pollution we can process the experimental data fast and exactly so we can get such a large number of new information. The environmental pollutant effect of the molybdenum was studied by elements load experiment in Nagyhörcsök Experimental Station. The relation was analyzed between the uptake of molybdenum and other micro-elements and its effect on plant organs (loaf, seed) using by different statistical methods. The aim of our investigations to search for answers on how to arable crops respond to a possible soil contamination. It is also important to determine the extent of mobilized elements from the soil into the plants, which type of effect on them, and how leach the harmful substances into deeper layers (groundwater). A computer program based on Visual C# was developed to process of the large amount of data. The MySQL was applied to prepare the database, since we want to allow access to the newly developed database via internet technology. The data was filled up to the data tables mainly from the Excel tables. Data in internet-based databases must be properly protected. The program can provide access for two types of users at present: the database administrator who is authorised to do everything in connection with the data-base, and the user who is authorised to make queries only.

Keywords: Multidisciplinary science, Micro-elements, Pollution, Food chain, Data-processing, Hungary.

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SHELF-LIFE EXTENSION OF BERRIES: MOST RELEVANT QUALITY PARAMETERS AND NEW TECHNIQUES USED FOR BERRIES PROCESSING

M. E. POPA[1], E. E. TĂNASE, V. I. POPA, P. POPESCU, M. GEICU-CRISTEA, A. C. MITELUȚ

Fruits, especially berries, have been found to possess pharmacological and biochemical properties that are caused mainly by the antioxidant activity of their diversified compositions.

Berry fruits have been widely recognized as an excellent source of bioactive phenolic compounds including flavonoids, phenolic acids, and tannins, that both individually and synergistically may help protect against cardiovascular disease, cancer, inflammation, obesity, diabetes, and other chronic diseases. However, the shelf-life of berries is very short and there is an increasing demand to extend their shelf-life, demands that especially come from consumers. In order to achieve an extended shelf-life, it is necessary to identify berries most relevant quality parameters and also the appropriate technology for their storage and processing.

The aim of this study is to present berries most relevand quality parameters and some new processing technology used to improve their shelf life.

Keywords: berries; shelf-life; quality parameters; new processing techniques.

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PHYSICO-CHEMICAL AND RHEOLOGICAL PROPERTIES OF YOGHURT WITH DRY MATTER CONTENT INCREASED BY ADDING DIFFERENT POWDERS

M. A. TIŢA, R. TUFEANU, O. TIŢA[1]

Increase of dry matter content, made by introducing different powders, has an influence on the properties of produced yogurt. In this study was examined the effect of adding powdered whole-milk, flour rice and starch on characteristics of natural yogurt.

Titratable acidity, dry matter, water activity and viscosity were measured in yogurts at 7, 14 and 21 days of storage at refrigerated temperature.

Addition of powdered whole-milk resulted in increase of viscosity, dry matter and acidity comparing with other two samples. Yogurt with added starch has the highest water activity value.

During 3 weeks of storage yogurt processed with whole-milk powder presents the best physicochemical characteristics.

Keywords: rheological characteristics, acidity, yogurt.

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THE PERCEPTION OF BENEFITS DUE TO DIETARY ANTIOXIDANTS: A SURVEY AMONG STUDENTS FROM THE TRANSILVANIA UNIVERSITY OF BRASOV AND THE UNIVERSITÀ DEGLI STUDI DI MILANO

M. BADEA[1], A. MICCOLI, C. POPA, P. RESTANI

Foods and beverages rich in compounds with antioxidant activities are widely promoted for their benefits.

Their powerful antioxidant properties and protective effects are associated with different vitamins and/or other compounds.

A questionnaire was developed to assess among students from Transilvania University of Brasov (Faculty of Medicine) and Universita degli Studi di Milano (Faculty of Pharmacy) the perception/knowledge concerning the topics of antioxidants-pro-oxidants, sources of antioxidants, benefits for human health, sources of information concerning health problems both in general and in the area of antioxidants.

Their answers were also correlated with their daily habits' (style of life, eating behaviours, type of food consumed, etc.). Specific differences between groups were identified and possible explanations will be discussed.

Keywords: dietary antioxidants, human health, food.

Acknowledgements

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THE EVOLUTION OF ACETALDEHYDE AND CITRIC ACID IN YOGURT DURING STORAGE

R. TUFEANU[1], M. A. TIŢA, O. TIŢA

Yogurt is a product consumed all over the world. Studies have shown that the most significant aromatic components in yogurt are acetaldehyde, acetone, acetoin, and diacetyl in addition to acetic, formic, butanoic and propanoic acids. In this study was followed the variation in time of the concentration of citric acid and acetaldehyde in yoghurt with chia powder and pumpkin seed powder by the enzymatic analysis.

Two types of yogurt were obtained by adding chia powder and pumpkin flour into semi skimmed cow milk.

Measurements were performed during 4 weeks, at each 7 days, using the Stat Fax 1904 chemistry analyzer.

The results showed that the yogurt with pumpkin seed powder has citric acid concentration higher than yogurt with chia. The concentration of acetaldehyde follow almost same trend for both products. After analysis was proved that the concentration of citric acid and acetaldehyde increases during storage at 4°C.

Keywords: acetaldehyde, citric acid, yogurt, storage.

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STUDIES ON SELECTION OF REPELLENTS COMPOUNDS FROM PLANTS FOR TEXTILE DEVELOPMENT, WITH THE ROLE OF PREVENTING THE SPREAD OF INFECTIOUS DISEASES DUE TO TICKS

A. COZEA[1], V. TAMAS, M. NEAGU, N. BORDEI, M. POPESCU, O. IORDACHE

The necessity of creation of textile fabrics with repellent properties is determined by the presence of a increasingly number of tick that lead to diseases difficult to treat. Textile fabrics with repellent properties can be used as barriers to eliminate or reduce risk of infection caused by ticks especially in forest, agriculture and tourism areas. The main objective is developing new multifunctional textile structures, including in nanostructures biologically active compounds extracted from plants, with the role to prevent the spread of infectious diseases such as borreliosis and other bacterial diseases caused by ticks. Thus were done studies on the main categories of plants with repellent potential that contained compounds that reduce the risk of illness. Chemical compounds derived from plants that kills or removes ticks are isolated from different parts of the plant and plant organs (flowers, fruits, leaves and wood). Thus, it was considered as plant extracts containing compounds with repellent activity are the following oils: (Juniperi aetheroleum - juniper oil): (Eucalypti aetheroleum - eucalyptus oil) (Lavandulae officinalis aetheroleum - lavender oil) (Rosmarini aetheroleum - rosemary oil). All oils selected were physico-chemical and microbiological characterized: appearance, color, smell, taste, chromatographic profile (content ά- pinene, sabinene, β - pinene, β - myrcene, ά - felandren, limonene, terpinen 4-ol, ethyl Borne -β- caryophyllene), relative density, optical rotation, refractive index, peroxide value, fatty oils and resinified oils content, microbial contamination, etc. Will be documented also optimal doses of repellency on ticks, and doses limit on skin toxicity. There will do studies to establish specific volumes on volatile oils to be used in encapsulation experiments and deposition on the fabrics;

Keywords: multifunctional textiles, essential oils, repellent, tick

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CONSUMER PERCEPTION REGARDING THE USE OF INNOVATIVE TECHNOLOGIES IN FOOD PROCESSING

A. C. MITELUȚ, M. C. DRĂGHICI, M. E. POPA, G. A. STEFĂNOIU[1], E. E. TĂNASE

Understanding the attitude, knowledge and behavior of consumers is of vital importance for decision making in determining food policies, legislation and directions in the field of society research and development. Studying how people understand food quality and food production, which is the decision factor when they purchase or obtain the needed food, their own attitude towards diets and how they understand the links between diet and health are wholly parts of multidisciplinary research that intersects both the social and the natural sciences and synthetically shows the consumer's knowledge. The purpose of this study was to explore consumer behavior regarding the consumption of the food products obtained using innovative technologies, using the interview method, the questionnaire used being designed based on the literature research. The questionnaire has two sections: the first section has 11 questions on consumer attitudes regarding the impact of innovative technologies on food and the second section has 6 demographic profiling questions. The questions posed in the questionnaire are closed dichotomous choice questions, open questions and choice questions. 300 respondents were interviewed, resulting 292 validated questionnaires, and the overall conclusion was that both the innovative technologies and the products obtained using these technologies are still unknown to consumers. Nonetheless the introduction of innovative technologies in food processing and production offers a number of advantages that determine their acceptance by consumers in encouraging proportions, for further research in this area.

Keywords: consumer; behavior; questionnaire; innovative technologies.

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COMPARATIVE STUDY OF CERTAIN BENEFICIAL MINERAL CONTENT IN VARIOUS PLANT ORGANS

M. POPESCU[1], N. BORDEI, R. C. SANDULOVICI, A. COZEA, A. D. RAICIU

The study aims to characterize the comparative content of beneficial minerals (iron, calcium, magnesium, manganese) in various organs of plants (root, stem, leaves, flowers) present in plant materials native: marigold (Calendula officinalis), french marigold (Tagetes patula), nettle (Urtica dioica), echinacea (Echinacea angustifolia), using the atomic absorption spectrometry (AAS) technique.

The experimental study showed different distribution of the minerals studied, preferential, depending on the plant organs.

Plants studied, from organic sources will be used as raw materials for making food supplements with effect in the prevention of certain diseases.

Keywords: flame atomic spectrometry, heavy metals, plant organs

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STUDY CONCERNING THE METABOLISM DYNAMICS IN FOOD ASSIMILATION, IN RELATION TO AGE

R. GRUIA[1]

The study has as an object the impact of simple and complex food upon organism, in function of the metabolism specific to consumers' age, in order to correct and adapt certain processes in industrial food fabrication, in culinary production and menu engineering.

There are taken into consideration aliments and their effect upon metabolism and its components, especially concerning Basal Metabolism. There is analyzed the daily energy necessary and its covering through different food in relation to metabolism structure.

There is calculated food metabolism (Thermogenesis) face to Basal Metabolism and physical activities (Activity), in relation to a series of parameters (weight, height, sex, age) in order to harmonize recipes and menus with the consumer's typology and to optimize the output of food assimilation.

There are proposed a series of calculations in order to quantify this process taking into account the body's hydration level in function of age, as a main indicator. There is finally calculated the yield food metabolism (ηfood) in relation to the typology of the body.

Keywords: consumer's age, food, metabolism, metabolic rate, vital energy.

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INTEGRONIC DYNAMICS OF BIOECONOMIC SYSTEMS, ELEMENT OF SYSTEMIC POLIVALENCE INCREASE

R. GRUIA[1]

There is desired a coherence of the Bio-economic approach through common and complementary elements and processes of the field and corresponding activities, coherence sustained by the systematization of latest information and preoccupations, sometimes fragmentary and even contradictory.

To this end, the paper emphasizes the integronic process by the omnipresence of multiple integration from complex systems of environment-economy type (EES), that de facto characterize the wide Bioeconomy field. There are analyzed the groups of parameters that may objectivize the approach and quantify the complexity level of the Bioeconomic Systems.

The paper puts in the context the systemic polyvalence, in relation to the process and integronic management. Theoretic aspects are to be, directly or indirectly, found in a series of innovating applications at European and Romanian level, as a first monitoring, organizing and coordinating stage of integronic dynamics from Bioeconomic Systems.

Keywords: bioeconomy, integronic, polivalence, environment-economy systems.

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HYSSOPUS OFFICINALIS L. (FAM. LAMIACEAE) A POTENTIAL PLANT FOOD SUPPLEMENTS WITH ANTI-INFLAMMATORY EFFECT

D. HANGANU, A. PÂRVU, A. MĂRCULESCU[1], I. ONIGA, B. TIPERCIUC, D. BENEDEC

Plant food supplements, or botanicals, have high acceptance by consumers. Potentially, they can deliver significant health benefits, safely, and at relatively low costs. Hyssopus officinalis L. (Hyssop) is one of the most popular food herbal, traditionally used for medicinal purposes, also. Some therapeutic uses based on the traditionally uses must be scientifically proven. Therefore the anti-inflammatory potential of the ethanolic extract obtained from aerial parts of Hyssopus officinalis was tested using an experimental rats model of acute inflammation as comparated to diclofenac.

There were four groups (10 animals per group): one group without inflammation used like witness group (W), one positive control group with untreated inflammation (I), one group with inflammation treated with Hyssopi herba extract (H) and a group treated with a nonsteroidal anti-inflammatory drug, diclofenac (D). The experimental acute inflammation was induced by injecting oil of turpentine (0.6 ml/100g b.w.) into the rat's right hind paw. There were evaluated the leucocytary formula, the phagocytic activity and the citruline levels.

The results from the treated group with alcoholic extract were compared with the control group (I), and with the diclofenac treated group (D) values. By the total leukocyte count and differential leukocyte count expressed as a percentage we appreciated the effect of the ethanolic extract on the bone marrow acute phase response.

Analysing the results from the differential leukocyte count expressed as percentage in the treated groups with extract and diclofenac, there were found that the total leukocyte count changes were induced by the decrease of the phagocytes percentages, respectively polymorphonucleares (PMN) ($p<0.0001$) and monocytes ($p<0.01$). The Hyssopus officinalis L. extract showed a good anti-inflammatory activity, in model of acute inflammation, comparative with the diclofenac.

Keywords: Hyssopus officinalis L., anti-inflammatory effect, plant food supplements.

MEDICINAL AND AROMATIC PLANTS - TIMELESS SOURCE OF BIOLOGICALLY ACTIVE SUBSTANCES

A. MĂRCULESCU[1], D. HANGANU

Medicinal herbs have earned a very important place in the current spectrum of food and especially in the food supplement area and functional food area; products which are often at the limit between food and medicine.

Biologically active substances synthesized by these wonders of nature are of great diversity, many of them unknown.

In the paper are presented principal biologic active substances from herbs, many of them still unused in food supplements.

Keywords*:* medicinal herbs, food, nature.

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VARIATION OF PHYSICO-CHEMICAL CHARACTERISTICS OF MOLDY CHEESES DURING STORAGE AT DIFFERENT TEMPERATURES

M. A. TIŢA, R. TUFEANU, O. TIŢA

Cheese is a complex and varied product, with characteristics that depend on several factors, including: ripening agents, the composition of fresh cheese and environmental conditions during aging. Temperature and humidity are important parameters in cheeses ripening and for their measuring and monitoring , EBI 20 TH1 device was used. For this study were used three types of moldy cheeses: Camembert, Brie, Roquefort. Their physico-chemical characteristics were determined for 14 days at different temperatures, respectively: 2˚C, 10˚C, 14˚C. The results showed that with the increase of temperature, humidity and time in the storage room have increased acidity, dry matter and sodium chloride content of samples.

Keywords: moldy cheeses, storage, temperature, humidity

PROCESSES RISKS EVALUATION IN ACCORDANCE WITH HACCP STANDARDS

A.E. DUMITRASCU, B. LEPADATESCU

In this paper are presented the identification, assessment and control of risks specific to the processes in accordance with HACCP (Hazard Analysis Critical Control Points) based on technical quality requirements. The case study focuses on identifying the critical control points for analyzed process, monitoring and implementation of hygiene procedures at critical control point by controlling the biological risk (microorganisms).

Keywords*:* control points, biological risk.

INFLUENCE OF SOCIAL MEDIA ON HOLIDAY TRAVEL PLANNING

G. RÁTHONYI, K. RÁTHONYI-ODOR, L. VÁRALLYAI, SZ. BOTOS

Rapid development of Information and Communication Technologies (ICTs) have revolutionized all industries in the World and presents challenges and great opportunities for tourism industry too. Widespread of the Internet, the Web 2.0 environment and the mobile communication have huge impact on tourism. Platform of tourism increasingly get to the Internet nowadays which is vitally important because tourism is an information-based and information-intensive industry. Web 2.0 internet technologies have allowed for the tourists to interact with each other online and have changed the way tourist plan and consume travel. User-Generated Contents (UGC) on different types of social media websites and travel related websites assist consumers in sharing their travel related experiences, which opinions and comments serve as information for others. Derive from the characteristic, decisions connected with travelling have high risk for the travellers therefore they try to collect more detailed and more reliable information in order to decrease uncertainty.

In this article an online questionnaire was made in order to investigate the influence of social media on Hungarian travelers throughout the travel process (before, during and after travel). We can conclude that the respondents are using the social media pages during the whole planning process of travel but for various reasons and with various extent.

Keywords: ICT, social media, user generated content, tourism.

APPLICATION OF EDI TECHNOLOGIES IN THE FOOD SUPPLY CHAINS

I. FÜZESI P. LENGYEL R. SZILÁGYI G. RÁTHONYI

Due to globalization, the complexity of food supply chains is increasingly becoming more complex. The consumers' trust in food, triggered and affected by a number of food crises, is low.

Today, consumers expect safe and high quality food and demand information about the origin of their food. Food safety and traceability are keys to companies' business survival and great efforts and resources are devoted to them.

The ever increasing requirements for the level of tracking and tracing in turn require even more advanced IT techniques.

The speed of a tracing operation is often the reason to store information about lots and tracing in an ERP system, but such a system can also be used to support RF scanning, to read barcodes and for EDI to communicate with clients and suppliers.

Besides speed this also increases the efficiency of registration and this ensures that the data stored is correct and complete. In this paper we discuss the criteria for efficient and effective application of EDI technologies in the food supply chains.

Keywords: EDI, traceability, food supply chain.

ICT IN AGRICULTURE IN ASPECT OF REGIONAL DIFFERENCES

R. SZILÁGYI, P. LENGYEL, I. FÜZESI

The new ICT technologies are not only fast developed but, in addition, are giving birth to newer systems and tools. The agriculture has some speciality in information technology.

The ICT adoption in the agriculture and main drivers has been examined. To get a draft overview of Hungarian position there is part about it. In this part there are data about household communication devices the individuals ICT usage.

The region differences in information technologies can be seen also. The final part of the paper there are some technology examples.

Cloud Computing provides better resource management and effective cost control. However, the business assessment of these technologies must not be done only on the basis of the technology and taken out of its environment randomly since the whole area is very complex.

***Keywords**:* ICT, agriculture, regions, ICT adoption

LYOPHILIZATION - HEALTHY METHOD OF FOOD PRESERVATION

D. MNERIE[1], G. V. MNERIE, D. ȚUCU

Brief introduction:

From year to year it increases the interest for food preservation by lyophilization method. To increase the consumer confidence in the food lyophilized it need multiple research on technological indicators and their quality.

Materials and methods:

Its were lyophilized 12 different kind of agri-food products, common in recipes. Its have identified some nutritional and caloric values of each. Were made 4 different compositions respecting the pre-established doses. Its were homogenized and then was rehydrated. The compositions were analyzed in gastronomic terms by a special team, formed by: 3 experts gastronomes, 3 doctors nutritionists and 3 simple consumers. Its were selected, in the commonly agreed, 5 key quality indicators. Each expert has stated a positive and a negative feature after tasting.

Results:

The assessments were structured and analyzed in terms of nutrition, satiety and beneficial effects on consumer health. The coverage expectations degree on healthy eating was 87.50%.

Conclusions:

The menus prepared with a combination of lyophilized food commodities provides a better guarantee healthy food. The proposed solution is particularly important for the nutrition of children and adults, with various diseases whose treatments require a very precise dosing and caloric nutritional components, without reducing the level of satiety.

Keywords: lyophlization, preservation, health, quality control, nutrition

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A COMPARATIVE STUDY OF ZINC, COPPER AND HEAVY METALS CONTENT IN DIFFERENT PLANT ORGANS

N. BORDEI, R. C. SANDULOVICI, M. POPESCU, A. COZEA, A. D. RAICIU

The purpose of this study is to realize a comparative study, especially about of content in zinc and heavy metals (lead, cadmium, chromium, mercury) in various organs of vegetable plant (root, stem, leaves, flowers) like: marigold (Calendula officinalis), french marigold (Tagetes patula), nettle (Urtica dioica), echinacea (Echinacea angustifolia) using the flame atomic absorption spectrometry.

The experimental study showed different distribution of zinc and copper depending on the plant organ and the total absence of heavy metals. These parts of the studied plants from organic sources will be used as raw materials for making food supplements and cosmetics with good bioavailability with effect in the prevention of certain diseases.

Keywords: flame atomic spectrometry, heavy metals, plant organs

EVALUATION OF ALLICIN STABILITY IN LYOPHILIZED AQUEOUS GARLIC EXTRACT FOR NEW PHARMACEUTICAL SOLID FORMULATIONS WITH BIOAVAILABLE ALLICIN

A.SUCIU[1], V. TAMAS, G. ALEXANDRU, N. BORDEI

Allicin, is thought to play the major role for garlic's therapeutic properties. It is formed after fresh garlic is crushed so it does not exist in garlic. Allicin is a highly unstable organosulfur compound (half-life in crushed garlic at 23°C is 2.5 days) and its presence in garlic supplements is a challenge.

Dried garlic bulbs were grinded into powder and mixed with water at room temperature in an ultrasonic bath at ratios of 1:5 and 1:10. The extracts were filtered then lyophilized. The resulted lyophilized extracts were each stored at 24±2°C (R), 3°C (F) and -20°C (I) in plastic flasks. Allicin content was analyzed using a HPLC system and the method of analysis described in European Pharmacopoeia.

The dried bulbs yielded 0.3% allicin. As other studies have showed, allicin stability is a function of various parameters, including temperature. And since its melting point is around 25°C, sample I was the most stable, although it lost about 20% of the initial allicin content in a period of 30 days. Lyophilization conditions also influenced allicin content in the final extracts.

Further research is needed to stabilize allicin in lyophilized form due to its chemical and physical properties.

Keywords: *allicin, garlic, lyophilization.*

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TERMS DEFINING THE CONCEPTS OF TOURISM - CONSENSUS AND CONTRADICTIONS

N. TANE[1]

The paper makes an analysis of terms of tourism, which created contradictions in the literature regarding how to define the form and content.

Attempting also systematizing and determining areas of overlap and separation between the concepts analyzed (tourism / industry, food service / restauration, restauration / food industry, tourism / services, travel industry / tourism, etc.).

Systematization of terms defining the concepts of tourism is very important for national tourism development, through the separation of types and forms of tourism and through the fair information and education of tourists.

***Keywords**:* form, content, areas of overlap, tourism.

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A NEW PHYTOTHERAPEUTIC PRODUCT INVESTIGATED FOR ITS ACTION IN CERTAIN ALLERGIC DERMOPATHIES FOR FELINES

E. BALINT[1], V. TAMAS, V. CARABELA, A. NISTOR, C. VASILESCU

The authors present a study on a phytotherapeutic, indigenous product with high potential for use in veterinary medical practice. This product has a complex action and proves effectiveness even in some of the allergic dermopathies at felines.

In this category, several cases of Allergic dermatitis were studied, clustered under the universal heading of "feline eosinophilic complex" with different etiologies: food allergic dermatitis, atopic dermatitis, contact dermatitis caused by hypersensitivity to stings of haematophagous insects. For each category, therapeutic allopathic protocols do exist, used with more or less effectiveness in curing such cases.

For this reason, the authors chose to certify the action of their new phytotherapeutic product, namely Arsutrat-Plagotrat by testing in the veterinary clinics of the Faculty of Veterinary Medicine of Bucharest. Studies are concerned with revealing its reliability in the cases of different allergic dermatitis, both as adjuvant in therapy and independent product.

Keywords: veterinary medical practice, phytotherapeutic product, feline eosinophilic complex.

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PHYTASE ACTIVITY OF MICROORGANISMS

T. LISITSKAIA, V. SHMELYOVA

Screening of microorganisms with phytase activity was executed among different species of bacteria and molds.

It was found that molds mobilize phosphates from phytin more effectively than bacteria.

As a result of multistage screening A.niger van Tieghem TI 12 was selected which produce extracellular phytase and dephosphorylate phytin up to 66,9 %.

***Keywords**:* phytase, hydrolysis of phytic acid, microorganisms.

OBTAINING OF HYDROPHOBIN-TYPE PROTEINS FROM MYCELIA BIOMASS OF ASPERGILLUS NIGER.

Boris Kolesnikov, Nikita Khrapatov, Mark Shamtsyan

Mycelia biomass of Aspergillus niger, a waste from citric acid production was used to obtain hydrophobin-type surfactant proteins. Obtained protein has a molecular weight of about 7 kDa and possesses high surface-active properties.

Keywaords: Fungi, surfactant, hydrophobin.

STUDY CONCERNING THE APPLICATION OF THE HYERARCHIC ANALYSE PROCEDURE IN OPTIMIZING THE PROVIDER'S SELECTION PROCESS IN THE COMPANIES FROM THE HOSPITALITY INDUSTRY

G. I. FLORESCU[1], R. GRUIA

Provider's selection and evaluation are of a crucial importance for the success of a company from the sector of tourist hospitality, because the cost and quality of tourist services directly depend on the cost and quality of the previously acquired goods and services, on the logistic chain.

This paper integrates itself in the research effort to elaborate providers' selecting methods from the tourist hospitality logistic chain, proposing for this aim the hierarchic analyses method, a useful instrument in solving complex, unstructured and with multiple objective problems.

Based on the fundaments of the method, there is introduced a case study, with detailed exemplification of the items that are followed within an application that may sustain managers in effectively improving the providers' selection and evaluation process, by using criteria specific to sustainability.

Considering our knowledge up to now, this is the first application of the hierarchic analyses procedure in a Romanian company from the hospitality system.

***Keywords**:* supplier selection, analytic hierarchy process, multi-criteria decision-making, tourism sustainability.

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STUDY CONCERNING THE ATTESTATION METHODOLOGIC PRINCIPLES OF THE ”MOUNTAIN PRODUCT”

R. GRUIA[1], A.T. BOGDAN, R. REY, GHE. F. TOBA, D. ENACHE, GHE. PUCHIANU

On a bioeconomic direction and consequently to the adapting of the Regulation which certifies the new type of „mountain product” by the European Commission, a series of fragmentary and sometimes contradictory information appeared, that renders opportune the elaboration of certain methodological principles in order to attest/certify agro-alimentary products under this name.

Beyond the organizational aspects of administrative type, which are the work object of government institutions, the paper emphasizes the criteria and parameters that objectivise the certification methodology as products of mountain type. There are taken into consideration different typologies of analyses as those concerning bioproducts, microbiologic, toxicologic, micologic analyses, but also of nutritional nature ones (chemical, physical, organoleptic).

To define the problem that is connected to the „quality of the mountain product” and to establish the work criteria become important for the following studies, for the management of certification and for the establishment of different taxes, impositions, tariffs, prices, necessary in a coherent and professional marketing for the promotion of the „mountain product” on the Romanian and international market.

Keywords: bioaliment, certification, food quality, mountain product.

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ROLE OF GREEN BUILDINGS IN THE IMPROVEMENT OF THERMAL AND PSYCHIC COMFORT FOR THE RESIDENTS OF BIG CITIES

GH. BRĂTUCU, E. C. BADIU, D. D. PĂUNESCU

The paper highlights the negative role of uncontrolled urbanization and explosive growth of cities on thermal discomfort created their inhabitants.

A solution to reduce this discomfort is to increase green areas, including by greening buildings, ie by creating vegetable roofs of greenhouses and even standing on the rooftops.

Keywords: green building, thermal discomfort, rooftops.

INFLUENCE OF GREENHOUSES FORMS, LOCATED ON THE ROOFS OF BUILDINGS ON THE RESISTANCE TO WIND ACTION

GH. BRĂTUCU, E. C. BADIU, D. D. PĂUNESCU

The paper presents theoretical and experimental results obtained by finite element method simulation and wind tunnel, on the 5th of greenhouses models that differ in the number of roof pitches and angles they make these slopes.

They were determined pressures and thrust forces to the action of aerodynamic drag coefficient and the front side of the blowing wind speed up to 30 m / s.

Keywords: greenhouse, roof pitches.

STUDY ON CALORIFIC VALUE TO WOOD PELLETS

C. SPIRCHEZ[1], A. LUNGULEASA, L. GACEU, T. GRIU

Biomass in the form of wood, have been and will, remain a combustible material remained deep in people's consciousness, a material that can provide energy needs of the population at a reduced price.

The importance of using woody biomass result from that is part of the renewable resource of energy. Woody biomass is a source of neutral combustible in terms of carbon dioxide emissions.

Worldwide, it highlights concerns in using biomass for energy purposes.

Romania has a potential of 60% in the production of energy from existing biomass sources. Romania has an area of 6300 ha, which represents 27% of the existing territory.

Keywords: calorific value, wood, biomass.

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STUDY REGARDING THE MANAGEMENT MECHANISMS FOR TOURISTIC INTEGRATION OF OLTINA PLATEAU FROM SOUTHERN DOBROGEA

M. POPESCU, R. GRUIA

Located in South-Western Dobrogea, the Oltina Plateau has a diverse natural and cultural heritage, offered by contrast between environmental factors with activities and traditions of the local population.

The purpose of this paper is to define the touristic specific and to identify solutions for socio-economic efficiency by integration in agri-touristic circuit to the sustainable development of local communities in this area, predominantly rural. The research methodology consisted in bibliographic documentation, field research to catalogue the resources with valuable touristic potential and their mapping, and identification of feasible agri-touristic programs based on sustainable management.

There are analyzed the contrasting territorial landscapes determined by relief, Danube, lakes, natural protected areas, rural settlements with cultural resources and specific socio-economic activities.

The touristic potential of this area resulting from the traditional farming activities (viticulture, fruit growing, fish breeding, beekeeping or sheep breeding) associated with the presence of sights of cultural, historical, religious interest, and multicultural local traditions. Data processing outlines an integration model of villages in touristic routes with diverse themes and programs: cultural tourism, religious tourism, ecotourism, wine tourism, gastronomy tourism, api-tourism, fishery tourism and bird watching.

***Keywords*:** management, optimization, plateau, sustainable, tourism.

RESEARCH OF MICROBIOLOGICAL EXPERTISE OF DRINKING WATER COUNTING E. *COLI* AND COLIFORM BACTERIA USING MEMBRANE FILTRATION METHOD

G. PUCHIANU[1], V. NECULA, D. V. ENACHE

For drinking water microbiological expertise we performed laboratory analysis in accordance with ISO 9308-1: 2014, which refers to the method of counting *Escherichia coli* and coliform bacteria in samples with low bacterial flora, based on membrane filtration technique, further culturing membranes on chromogenic agar for coliforms (CCA) and counting microorganisms in the sample target.

Coliforms and *Escherichia coli*, are present in large quantities in human and animals feces, beeing considered an indicator for the integrity and cleanliness of the distribution systems and for the potential presence of biofilms, their presence indicating an inadequate treatment, the formation of biofilm through the intrusion of foreign material (soil, plants) in the distribution system and water tanks.

The presence of *Escherichia coli* / coliform thermotolerants involves investigative actions of potential sources such as inadequate water treatment or distribution system breaches existence.

The results interpretation was done using special formulas for calculation, and the results were reported to the Law. 311/2004 amending and supplementing Law no. 458/2002 on drinking water quality.

Keywords: drinking water, coliform bacteria, Escherichia coli

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CONSIDERATIONS REGARDING CURRENT METHODS OF QUALITY CERTIFICATION OF ECOLOGICAL FOOD PRODUCTS IN ROMANIA BASED ON THE TEXTURE OF AGRI-FOOD PRODUCTS

L. LUCA[1], R. GRUIA

The paper highlights that Food Quality is a concept that includes many factors and various parameters as harmlessness, nutritional value, sensory qualities, texture, in addition to these we can add the price who plays an important role in promotion and the decision to purchase consumer who ultimately remains the decisive factor in choosing a particular food.

We examined the idea that the microstructure can represent the food alphabet which organizes the molecules to build the structure or the food matrix. In our view we consider the structure even more important than chemical composition of food products.

It wants the work to achieve a new method of quality certification for ecological food products. Improving methods of organic certification and biological agri-food products can better objectified things so that food to provide additional information to further processing, including gastronomy. As new work is supported by the fact that quality certification of ecological food must take into account the structure of food.

***Keywords**:* quality, ecological certification, texture, microstructure, food processing, human sensory.

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RENEWABLE RESOURCES AND SUSTAINABL INTERVENTIONS FOR CONSERVATION OF VALUABLE BIODIVERSITY OF NATURAL FLORA OF GRASSLANDS AND MOUNTAIN MEADOWS AND TO AVOID GROUNDWATER POLLUTION. CONTRIBUTIONS FOR ANIMAL WELL-BEING AND MOUNTAIN FARMS PRODUCTION AND LANDSCAPE PRESERVATION

A. R. REY, A. COCA, R. REY[1]

The increasing interest for cleaner environment and for good quality food brings special attention to mountain areas. The natural polyfloral mountain meadows underpinning valuable biodiversity is the result of secular human efforts, based on continous systematic use of organic fertilizers coming from ruminants.

Abandoning the use of these fertilizers for an interval of 8 to 10 years causes the phenomenon of rewilding the meadows by allowing the invasion of plant species that seriously affects the high natural value, vitiating biodivesity.

Defective construction of the traditional stables generates poor hygiene and excessive noxious gases (ammonia, hydrogen sulfide, carbon dioxide, etc.). Liquid manure (urine), especially from cattle, is not collected, penetrating the ground, having a polluter effect on groundwater.

Urine is also a valuable organic fertilizer (biological nitrogen), which collected and used on scientific basis may offer threefold benefits: improving the health of animals and farmers; avoid pollution of groundwater; preservation and enhancement of biodiversity, especially on meadows.

Solid organic fertilizer, manure, coming from cattle and sheep / goats - is another factor of utmost importance both by the contribution of humus, etc., and by the effect of amending the natural acidity of mountain soils, a guarantee for preservation of biodiversity with high natural value.

Ensuring the avoidance of mold in polyfloral hay is another important factor for consumers' health by preventing the occurrence of aflatoxin in milk.

The use of organic fertilizers on scientific basis, ensure biodiversity conservation of mountain meadows, quality agrifood ”mountain product” and consequently the preservation of high value landscapes.

Keywords: high natural value, organic fertilizer, mountain product, biodiversity, mountain areas.

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THE DYNAMIC OF RECREATIONAL KITES USED IN AIR-WATER SPORTS

C. MICLEA, M. HODIRNAU, C. CSATLOS

The paper presents the dynamic of the recreational kite used in air-water sports, focusing on the wing as an aerodynamic profile. Also will be taken in consideration the string tensions involved in launching and relaunching the airfoil.

CLASSIFICATION OF THE AIRFOILS USED IN AIR-WATER SPORTS

C. MICLEA, M. HODIRNAU, C. CSATLOS

The paper presents a classification of existing kites both by construction and use, those used in air-water sports being detailed as they represent the most used at the moment.

THE INFLUENCE OF THE AGRICULTURAL MACHINERY TIRES OVER THE SOIL COMPACTION

M. HODIRNAU, C. MICLEA

The paper present the contact surfaces between tyre and soil, of the pressure on the soil in the contact surface, and of the deformation depth of the soil, depending on wheel load, tyre constructive elements, air pressure in the tyres and traffic intensity.

ANALYSIS OF THE SOIL DEFORMATION PROCESS CAUSED BY THE AGRICULTURAL TOOLS TYRES

M. HODIRNAU, C. MICLEA

The paper presents the contact surfaces between tyres and soil, the pressure on the soil on the contact surface, and of the deformation depth of the soil, depending on wheel load, tyre constructive elements, air pressure in the tyres and traffic intensity.

PHYSICAL AND MATHEMATICAL MODELING OF EXTRACTION FROM GRAPE MARC BY SUBCRITICAL WATER

V. SUKMANOV, L. GACEU, V. ZAKHAREVYCH, A. MARYNIN, I. ROGOVYI, A. FARISIEIEV

The article deals with physical and mathematical model of extraction from grape marc by subcritical water. The full model takes into account the heterogeneity of grape marc porosity structure (frameworks of grape bunch, seeds, skin, pulp residue), turbulent parameters, kinetic energy of turbulence and dissipation rate. It is obtained as a result of modification for RNG k - of turbulence model.

***Keywords**:* grape marc, subcritical water, extraction, physical and mathematical model.

THE REDUCING OF ENERGY CONSUMPTION FOR PIG DEPILATE MACHINES BY OPTIMAL POSITION OF ROLLERS

C. CSATLOS

The power consumption of machines with horizontal flow to depilate pigs is estimated to maximum load. These machines are made with two or three rolls (support and depilatories). Depending on their geometrical dimensions and positioning to the animal carcass which is subjected to depilation, couple can vary within limits relatively high. This paperwork aims to highlight and optimize the main geometrical and dynamic elements that can favor the reducing energy consumption of these machines.

Keywords: depilate, machines, geometric, dynamic.

EXPERIMENTAL REASERCHES ON THE EFFICIENCY OF SEPARATING IMPURITIES FROM WASTEWATER BY MEANS OF SERIES MOUNTED TANGENTIAL FILTERS

D. ZÂRNOIANU, S. POPESCU

The paper presents the methodology and the experimental research installation for the mechanical impurities separation from the wastewaters by the use of the tangential filters connected in series.

The research installation (pilot installation) consists of two tangential filters mounted in series, consisting of filtering elements with stainless steel sieves, having a fineness of 475 μm, and, respectively, 80 μm. to establish the filtration efficiency to a given wastewater feed flow rate were determined by measurements the liquid pressures and concentrations of the suspension in clear (in mg/l) at the entrances and, respectively, at the exits from the filters, after a certain durations of operation (throughout of 60-minute). Finally are presented the conclusions on the efficiency of separation of impurities of the analyzed filtration system.

***Keywords**:* wastewaters, tangential filters, separation of impurities.

SIMULATION FLOW ANALYSIS OF SAFETY OVERFLOW VALVE

G. DINEV, K. TUJAROV

An approach for simulation fluid analysis of safety overflow valve is presented. This valve used in devices on food industry. The simulation fluid analysis are carried into by 3D geometrical model of assembly units, theoretical dependences and the limiting conditions for working pressure and fluid rheology indexes for chocolate mass. Also is created demo model for presentation of speed distribution of flow in the valve. Developed methodology for animation simulation analysis in education. The results could be used for training of students master degree and postgraduates in this field of CAD design.

Keywords: flow analysis, 3D, rheeology, CAD design.

RESEARCH ON OPPORTUNITIES TO USE SOLAR ENERGY IN HOTELS IN ISOLATED MOUNTAIN AREAS

S. BLAJ BREZEANU, G. BRATUCU

This paper addresses the problem of reducing the energy consumption of conventional sources, due to the use of solar energy.

The hotel complexes in isolated mountain areas leverages solar energy using photovoltaic panels and solar collectors consequential for domestic hot water. Requirements panels and solar collectors is dependent on the capacity of the hotel complex and the services offered to tourists. It notes the importance of the hotel complex orientation to the sun and the seasons with maximum requests for its services.

Keywords*:* energy consumption, solar energy.

EFFECT OF CAROTENE-CONTAINING ADDITIVES ON THE FORMATION OF CRYSTALLINE STRUCTURE OF ICE CREAM

G.V.DEINYCHENKO, I.M.BYELYAYEVA, I.V.ZOLOTUKHINA

Was researched the nature of crystallization during freezing and morphological features of the crystal structure of a phase transition in the samples of ice cream on the basis of protein-carbohydrate raw materials (whey) with carotene supplements from apricot and pumpkin.

Crystal structure of ice cream samples was researched by cryoscopic method. Cryoscopic method allows in real time in a wide temperature range to observe visually the kinetics of freezing - warming.

Cryoscopic analysis of the results of research allows to determine the quantitative characteristics of the processes that occur during freezing of samples of ice cream. Cryoscopic method allows experimentally and theoretically to establish optimal conditions that ensure maximum safety in every phase of the process of production of ice cream.

Were identified crystallization temperatures of ice cream samples. In control sample without additives crystallization temperature was - 8,5 ºC, in a sample with carotene supplements from apricot crystallization temperature was - 11,2 ºC.

It was established that carotene-containing additive from pumpkin promotes formation of the glassy structure of the ice cream. Implementation of several cycles of freezing and warming does not affect the crystal structure of the sample, which is an important moment during storing ice cream.

Keywords: Ice cream, carotene-containing supplements, cryoscopic method, glassy structure

MARKOVIAN DECISION PROCESSES APPLICATION IN FOOD INVENTORY MANAGEMENT

T. PULEVA, A. YONCHEV

Inventories are materials stored, waiting for processing, or experiencing processing. They are ubiquitous throughout all sectors of the economy. Observation of almost any company balance sheet, for example, reveals that a significant portion of its assets comprises inventories of raw materials, food units, finished goods and etc.

Markovian Decision Processes is a powerful technique for formulating models and finding the optimal policies for controlling a large class of systems. This technique is applicable to the solution of problems in such areas as queuing theory, inventory control, maintenance, and probabilistic dynamic programming in general. An application of Markovian decision processes for optimal inventory control is considered in this paper. The demand level is represented as a stochastic process with Poisson distribution. An appropriate cost structure is introduced. The stochastic behavior of the system is presented as an irreducible Markovian chain associated with the transition probability matrix.

The optimal policy design technique based on Markovian decision processes comprises an appropriate cost structure, set of possible decisions and finite number of states described by transition probability matrix. The following algorithms will be explored: the policy improvement algorithm, linear programming formulation and the full enumeration technique. These methods are applied for optimal policy determination of food inventory management problem. Optimal policy determination in accordance with the proposed methods is accomplished in Matlab software package.

Keywords: Markovian decision processes, optimal food inventory management

RESEARCH REGARDING THE INFLUENCE OF TEMPERATURE ON THE PRESSING PROCESS OF OIL RAW MATERIALS

A. N. ORMENIŞAN*

Acquire vegetable oils by pressing is an old preoccupation, known from very ancient times. The transformations during oil raw materials while pressing precess are very complex and their analysis has a particular importance due to the multitude of factors influence.

They show both the energy consumption during the extraction process by pressing and final product quality, the vegetable oil. Used for human consumption or biofuel production, vegetable oils can have a more or less positive impact both on the health of consumers and the environment. Lately, increased requirements for using cold-pressed oil for food consumption. This is due to the current trend to consume natural products or less processed products, products for the production of which the technological used processes are not always declared.

Keywords: *vegetable oil, extraction, pressing, temperature.*

RESERCH REGARDING HEAT RECOVERY FROM SEWAGE WATER USING HEAT PUMPS

A. N. ORMENIŞAN*

Wastewater, residual water or sewage water, is the result of daily activities in many fields: domestic, educational, commercial, tourist or industrial.

The temperature of the network water, has values in the range of 7 ... 15 ° C, being influenced by season, outside ambient temperature and the placement of piping and temperature of the waste or channel water is in the range 15 ... 25 ° C.

This difference of 5 ... 15 ° C, may represent a potential source of renewable energy that currently is lost, being discharged into sewers. One of the possibilities for energy recovery from wastewater and other sources of waste heat is the heat pumps.

Keywords: *heat pump, sewage water, energy recovery*.

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NEW COSMETIC PRODUCTS BASED ON ROSEHIP OIL FOR SKIN CARE AND BEAUTY

V. CARABELA[1], V. TAMAS, M. POPESCU, C. LUNTRARU, D. BELALA, A. NISTOR

The present work aims to describe some new cosmetic products based on rosehip oil in combination with other plant extracts suitable to achieve by synergy, benefic effects of hydration, nourishing, moisturizing and dermal regeneration. Rosehip oil is known for its anti-inflammatory, regenerative effects, acting beneficially on dry skin care, but suitable for all skin types, it is a powerful antioxidant and a considerable anti-aging ally. The association of rosehip oil obtained by cold pressing with other bioactive compounds from indigenous medicinal and aromatic plants, namely: thistle, buckthorn, hemp, elm, blackcurrant, lavender, sage, rosemary, etc., in the form of natural fatty oils, volatile oils, concentrated extracts and gemmoderivates, has led to the elaboration of the following products: Regenerative oil, Restorative cream for mature and sensitive skin and Protective lip balm. For the development of the indicated products, a head importance was given to the quality of raw materials and to testing the products' beneficial dermal effects using MultiSkin MC1000 apparatus. Skin appearance was followed by the MultiSkin MC1000 apparatus before and after applying the elaborated products through determinations of skin hydration, elasticity, sebum, pigmentation and redness degree.

The obtained information confirmed the properties of significant hydration and improvement of skin appearance and quality.

Keywords: rosehip oil, cosmetic product, hydration, anti-aging.

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EFFECTS OF SOME COMBINED TREATMENTS OF PVY INFECTED POTATO PLANTLETS FROM ROMANIAN VARIETY ROCLAS

C. L. BĂDĂRĂU[1], F. STROE, A. NISTOR

Elimination of PVY from potato supply is essential for seed potato production.This is the reason because in this study, the efficiency of some techniques (chemotherapy, electrotherapy) in decreasing the infection level of PVY infected plants and producing virus-free plants was evaluated.

At the same time, the behaviour of the treated plants and their chlorophyll and anthocyanin content were estimated. Plantlets (variety Roclas) obtained from PVY (necrotic strains) infected material (mechanically inoculated) were used in the experiments. Electrotherapy was applied in several variants: the infected plantlets were exposed to either 40, 50 or 100 mA, for 5, 10 and 20 minutes, washed, divided into single node cuttings and multiplied in vitro. Chemotherapy was undertaken with ribavirin (RBV) and oseltamivir (OSMV) (RBV 40 mg l-1 + OSMV 40mg l-1). Solanum tuberosum L. plantlets regenerated were removed from the culture medium, acclimated in green house. The survivor plants were indexed (DAS ELISA). The variant leading to highest rates virus elimination and plant regeneration was estimate using the Therapy Efficiency Index (TEI). This study revealed that applying this combined therapy could have beneficial effects on PVY elimination from potato plant tissues.

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Keywords: Potato virus Y, electrotherapy, chemotherapy.

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INNOVATION IN RURAL TOURISM (INRUTOU) PROJECT - BOTTOM-UP VALORISATION OF THE RURAL DESTINATIONS BASED ON THE ICT APPROACH

A. COCA[1], A. R. REY

Many European rural mountain communities are facing challenges: economic stagnation, out-migration of the local population, exploitation of natural resources by third parties, degradation and loss of natural and cultural resources. The lack of knowledge about valorisation, entrepreneurship, management, promotion of tourism resources, New Media use in tourism development represent crucial challenges.

The ICT approach is fundamental in the development of sustainable rural tourism. The digital revolution has had a fundamental impact on the communication within the tourism industry and mitigating the existing lacks is essential to develop functioning tourism structures, which provide economic revenues and possibilities to diversify rural livelihoods in the long-term.

Withing InRuTou, the ICT tools, were designed and customised to address three components: knowledge (identification of local tourism attractions), skills (management and promotional competences) and attitude (entrepreneurship and hospitality).

The ICT approach, including e-learning (blended learning strategy), online sharing platform and a desktop and mobile application facilitate the integration of knowledge and experience exchange among the given stakeholders on the community level, enabling creation of joint innovative solutions, such as the new local provider networks, formation of new connections between local communities and the international tourism market and development of the rural tourist offers. The InRuTou project targeted six pilot regions in the Carpathian Mountains (RO, PL, UA), Appennines (IT) and Waldviertel (AT), where successful local entrepreneurs, representatives of younger/older local residents, protected area staff and people skilled in the tourism sector were empowered and capacitated with ICT knowledge and e-technologies to further develop and promote their destination on the international tourism market.

***Keywords**:* rural tourism, ICT tools, mountain areas, mobile application, protected areas, innovation. e-learning, tourism development.

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STARCH CONTENT, TOTAL L-ASCORBIC ACID AND CAROTENOIDS IN 20 VARIETIES OF SOLANUM TUBEROSUM L. GROWN IN ROMANIA

C. L. BĂDĂRĂU[1], L. MIKE, G. MIKE

Potato is a staple food crop and provide basic nutrition to millions of people globally. Although valued as staple carbohydrate crop, tubers with higher levels of health-promoting compounds could have a positive impact on the health of populations.

In this study, 20 varieties of potato, including new Romanian varieties and commercial varieties planted in two sites in Romania were evaluated for carotenoids and L ascorbic acid content.

The highest starch content level was observed to Opal and Roclas varieties. Higher levels of carotenoids were found in a new variety Sarmis showing maxim values 26 and 18 mg Kg-1 dry weight (DW) in skin and flesh, respectively. L Ascorbic acid was analyzed in the flesh only, with variety Hermes and Sarmis showing the highest content at 700mg Kg-1 DW and 640mg Kg-1, respectively. Significant differences in vitamin C and starch content were observed across sites.

This study provides information on level of important micronutrients, L ascorbic acid and potential health-promoting phytochemical such as carotenoids in a range of potato varieties.

***Keywords**:* potato, L ascorbic acid, carotenoids.

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CENTRE FOR MOUNTAIN ECONOMY – CE-MONT

REY RADU[1]

The Centre for Mountain Economy – ”CE-MONT” is new to Romanian science, as an institution of the Romanian Academy, devoted to the knowledge of mountains and its renewable resources in Romania, as well as in other mountain ranges, including the Carpathian Mountains and the Balkans. A prolonged absence of scientific research in the fields of agri-food economy and social economy as well as an educational system unsuited to mountain realities decreased the competencies and the capacity for innovation, resulting a ”weak mountain culture” in the society.

The challenges of climate change and population growth have increased the interest for quality food and renewable energies, biodiversity conservation and the preservation of economic traditions and cultural values, deepening the needs to understand the complex phenomenology which characterizes the relationship between man and nature - in mountainous areas. Specific objectives concerns montanology research and studies, development of methodologies and research methods applicable in mountain areas, development concepts, contributions in the elaboration of legislative acts, with scientific basis, for the economy, population and the mountain environment and society in general.

This paper will present the specific objectives, the structure of the 12 research laboratories, photos of the new building, equipment, human resources. The material basis of CE-MONT project was achieved by POSCCE ID 873 / SMIS - CSNR 14027, worth approx. 7 mln. Euros, co-financed through the European Regional Development Fund. In its development, CE-MONT can become a pillar for scientific research in the Carpathian region and a valuable partner for new development projects.

Keywords: development, mountain economy, montanology, biodiversity, mountain ranges, education, renewable resources.

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RISK ASSESSMENT FOR FOOD ALLERGEN. STUDY CASE-NUTRILAB PROJECT

L. GACEU[1], B.O. OPREA

Over the past two decades, there has been a paradigm shift in the relationships between food, beverage and ingredients processors and their vendors. Years ago, the role of purchasing was to find the necessary ingredients and raw materials at the best price.

Today, processors must ensure what they order is safe, high quality and wholesome, and vendors must be able to prove all of these. In this way, quality and safety demands have been pushed further back in the food chain and are literally becoming a farm-to-fork exercise. The goal is to reduce risks coming into the plant and, therefore, potential liability.

One of the most important risks is related to the food allergen, and the buyer behavior plays a crucial role, connected also with labeling data recognizing.

In this direction, Nutrilab project (http://nutrilab.rosita.ro) provides a series of statistical data from Romania, Bulgaria, Ucraine, Rusia. This data can categorized regarding the level of occurrence and severity of consequences. Based on this data, the risk was evaluated for the main daily food product.

***Keywords**:* risk assessment, food, Nutrilab

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ELECTROCHEMICAL DETECTION OF MELATONIN FROM FOOD SUPPLEMENTS

A. MICCOLI[1], P. RESTANI, M. BADEA

Melatonin (N-acetyl-5-methoxytryptamin) is a ubiquitous molecule widely distributed in nature. It's a hormone produced by the pineal gland, which plays a role in the body's sleep cycles and it is a powerful oxidant. It is possible to find it in several foods (fruit, rice, corn) and as food supplement.

Screen-printed carbon electrode (DS150) and graphene modified screen-printed electrode (DRP-110GPH) were tested as sensor for the detection of melatonin using electrochemical detection, at different pH values. Quantitative detection of melatonin was possible, with better results when graphene modified screen-printed electrodes were used. Both electrodes have been tested on real samples as food supplement containing melatonin, with good recovery degrees.

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***Keywords**:* melatonin, food, electrochemical detection.

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MICROWAVES – MEDIA INFORMATION AND GENERAL KNOWLEDGES OF PEOPLE

A. JUFA, N. IORDACHE, A. PASCU, L. FLOROIAN, M. BADEA

Since decades people have tried to make life easier. Because of this, the discovery of the microwaves was really helpfull.

This widespread source of energy is used in various fields, from communication (cell phones) to agricultural and forestry related industries, RADAR systems, TV broadcasting via satellites, medicine (both as diagnostic application and therapeutic application), but the most known is thermal heating – with the most popular application- the microwave oven.

During last years there has been increasing public concern on the potential health risks of the food cooked using this form of radiation, and not only the food, but the microwave oven itself.

In order to find a solution, it is important to identify the problem first. Therefore, the aim of this paper is to evaluate the people knowledge about microwaves and their opinion regarding how healthy the food cooked this way is. This study also wants to analyze the most common source of information on this subject – the Internet and to observe its influence on people opinion.

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***Keywords**:* microwaves, energy, healthy, food.

STUDY ON THE LEVEL OF GRAPE SEED FLOUR (%) ADDITION IN WHEAT FLOUR UPON THE RHEOLOGICAL CHARACTERISTICS OF BREAD DOUGH

B. O. OPREA[1] , R. GRUIA

The first research on the use of composite flours in the bakery industry has been recorded even since 1964. Its purpose was to identify the level of the replaced wheat flour commonly used in the bakery industry, and also to find different mixtures of flours which composition combines optimally the nutritional value with the adequate processing properties. Lately, the use of composite flour in bread has become more popular, and different researchers used, for example: apple powder, grape skin, hemp, pumpkin, Helianthus Tuberosus, whey, etc .

The presented paper studies the effect of grape seed flour addition at the levels of 5, 10 and 15 g/100 g on the rheological behavior of the dough obtained from three types of wheat flour. The rheological properties of the dough, substituted, were recorded in the Mixolab device. The substitution has the effect of decreasing the Falling Number index simultaneously with the increase of the substitution level. The results demonstrate the potential of grape seed flour in development of new bakery products.

Keywords: grape seed flour, rheological properties.

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ULTRAVIOLET RADIATION –GENERAL KNOWLEDGE OF PEOPLE AND PROTECTION PRODUCTS

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Ultraviolet radiation is part of the electromagnetic spectrum emitted naturally from the sun or from artificial sources, such as tanning devices. Both with good and damaging effects for the body, ultraviolet radiation is considered one of the main factors that induce skin cancer, when exposed excesively to it, especially with no protection.

On the other side, the vitamin D endogenous production becomes impossible in the absence of the contact with UV radiation, considering the exogenous input of the vitamin is not significant.

The vitamin D deficiency is associated with secondary hyperparathyroidism, osteoporosis, spontaneous fractures, muscle weakness and impaired calcium absorbtion.

One of the purpose of this research was to determine if the questioned population is well informed about general information regarding ultraviolet radiation, the circumstances in wich the exposure becomes dangerous, about the harmful effects and the means of protection, if they are aware about them and if they use any.

The questionnaire was addressed to 2 groups: first one represented by the medicine students in the first year of studying, at the Transilvania University of Brasov (who have a higher level of medical information than the general population), and the second one represented by the people who go to the local swimming pool in Campina town, in Prahova county (who

don’t have medical information more than the general population, but are exposed constantly to natural ultraviolet radiation at the swimming pool).

In addition to this, we have analysed different types of products for UV radiation protection: creams, lotions, sprays, lip balms, coming from different manufacturers. In the analysis are speciffied more characteristics such as SPF factor type (10, 20, 25, 30, 50), protection spectre, pharmaceutical form, package features, instructions/indications for use, action mechanism/properties and other benefits, conditions for re-applying the product, cautions for use, water resistance, texture, other safety tips for sunbathing recommended by the product.

Acknowledgements

This work is partially sustained by funds of UTBV for young researchers - diploma thesis (Andreea Jufa – nr 4/HCA anexa 4-nr 87/24.02.2016)

***Keywords**:* ultraviolet radiation, UV radiation, harmful effects.

ASCORBIC ACID – PAST, PRESENT AND FUTURE KNOWLEDGE AND ADVANTAGES

L. DIMA, C. CRUDU, A. MARCULESCU, M. BADEA

The need to include food plant or meat in the diet for the prevention of diseases has been known by people since ancient times. The health benefits of citrus fruits have been known even since the expedition of Vasco da Gamma in 1497. Some specific manifestations of the scurvy disease are recognized since the early fourth century, by the father of medicine, Hippocrates. Since the mid-eighteenth century it was observed that lemon and lime juice can prevent scurvy in sailors. It was believed that the acid properties bring these advantages. Scurvy, a disease caused by vitamin C deficiency, was observed in the Roman soldiers, as well as in Egypt, being most frequently encountered among the sailors, but also in children. Therapy used by doctors to treat those cases and avoid this disease lies in the consumption of citrus fruits, green vegetables and plants.

Vitamin C is spread into the environment. Animal bodies' richest sources of vitamin C are to be found in the cortex of the adrenal animal tissues in the anterior pituitary and yellow body. In this work we would like to highlight the importance of the ascorbic acid and its role in the human body as well as the way to prevent and treat its deficiency effects. We used a set of questions about the ascorbic acid in order to evaluate the level of knowledge among the students, for example, the sources of it, whether or not they are using it and how many the nurses did and the doctors were involved in informing them about the way to ingest it.

Keywords: ascorbic acid , health, disease, vitamin C.

VITAMIN D – HEALTH BENEFITS FOR DAILY LIFE

C. CRUDU, L. DIMA, B. POPOVICI, E. POZNA, M. BADEA

Vitamin D is a fat-soluble vitamin and plays an essential role in the regulation of metabolism, calcium and phosphorus absorption of bone health. However, the effects of vitamin D are not limited to mineral homeostasis and skeletal health maintenance.

Vitamin D in sufficient quantities will ensure normal growth and development of the body, while a lack of vitamin D can lead to rickets in children and osteomalacia in adults, conditions characterized by demineralization and bone deformity.

Besides maintaining bone health, scientific research lately argue that vitamin D plays a crucial role in a several other physiological functions and associated vitamin D deficiency with many acute and chronic diseases including disorders of calcium metabolism, autoimmune diseases some cancers, type 2 diabetes, cardiovascular disease and infectious diseases.

Using a specific questionnaire, our work intends to identify the knowledge of females concerning the use and importance of vitamin D for the body health (natural sources, benefits, adverse effects, correlation with different pathologies, sources of information).

Differences between groups were studied in order to correlate the knowledge about vitamin D with level of educations (students versus employed people; people with and without medical studies). This study identified the actually need to educate population about vitamin D.

***Keywords**:* vitamin D, health, acute and chronic diseases.

SIMULTANEOUS ELECTROCHEMICAL DETECTION OF DOPAMINE, SEROTONIN AND ASCORBIC ACID

S. CHIPEREA, M. BALAN, I. AGACHE, M. BADEA

Dopamine (DA), is a ubiquitous neurotransmitter found in mammalian brain tissues. According to scientific studies, a diet rich in blueberries and spirulina improved dopamine levels in laboratory animals. Also, it is known that any foods rich in animal protein can help increase dopamine levels in the body.

Serotonin (5-hydroxytryptamine, 5-HT) is a well-known neurotransmitter that regulates mood, sleep, and anxiety in mammals, as well as alcoholism in humans. Its quantities in plants vary greatly among species and tissues, fruits and seeds having the major tissues in which serotonin occur abundantly. Serotonin stimulates the growth of roots, the germination of both radish seeds. It is implicated in the flowering, ion permeability, and present protective role as an antioxidant.

The importance of ascorbic acid (vitamin C) in several biological processes, and during the last years as active compounds used in several pesticides (L-ascorbic acid is used as a fungicide on potato, glasshouse tomato and field and glasshouse flower bulbs) determined groups of researchers to develop new, rapid and sensitive method for its detection. Ascorbic acid can be found in citrus fruits, non-citrus fruits (papaya, strawberries, pineapple, etc) and vegetables.

Simultaneous measurements of DA, ascorbic acid and 5-HT is important, since them often occur together in different matrices and because of their antioxidant capacities.

Material and methods: Several electrochemical methods were studied in order to detect biological active species. Differential pulse voltammetry (DPV) was chose as an optimum and rapid method for detection of dopamine, serotonin

and ascorbic acid. There were studied the possibilities of detection using DPV performed on different pH: 5.8; 7 and 7.4 (phosphate buffer).

Results and discussions: Each compound was analysed specifically at the potential indicated by the maximum signal appeared during the electrochemical study. Calibration curves were obtained for each reference samples, for the three buffer media.

The compounds were studies separately (standard samples) and in combination (mixture of two or three substances). There were studied the interferences due to simultaneous presence of two or three analytes.

Conclusions: Based on these electrochemical studies, new rapid and sensitive methods for detection of dopamine, serotonin and ascorbic acid could be recommended.

Acknowledgment: The research leading to these results has received partial funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 245199. It has been carried out within the PlantLIBRA project (website: www.plantlibra.eu). This report does not necessarily reflect the Commission views or its future policy on this area.

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***Keywords**:* dopamine, serotonin, ascorbic acid.

ENVIRONMENTAL FACTORS INFLUENCING THE ACTIVITY OF ACETYLCHONESTERASE

K. MOLCHANOVA, M. BADEA, L. GACEU, G. NIANIKOVA

Environmental factors influence the physiological function of different organs and tissues.

Changes in pH could appear as effect of acidosis or alkalosis, associated with changes of environmental factors. Organophosphate pesticides (OP) are widely used to protect plants.

All kinds of food products are controlled for the presence of residues of these substances. However, these compounds have a higher toxicity for mammals. One of the prospective methods for the detection of OP pesticides is the using of different enzymatic methods using free enzyme or enzyme-based biosensors.

This article describes the changes of kinetics parameters of enzymatic reaction catalyzed by acetylcholinesterase (Ellman method) in different conditions (pH, presence of ethyl-paraoxon pesticide).

Keywords: acetylchonesterase, paraxon, pesticides, biosensors.

THE EVOLUTION OF ACCOMMODATION FACILITIES FROM BRASOV COUNTY BETWEEN 2005 AND 2014

L. GACEU, R. SAMOILA, L. VOICILA

This paper is about a study on the number and the characteristics of the touristical checkins from Brasov County.

The analyze has been done between 2005 and 2014, considering the distribution of them in the rurals and urbans areas. Also, this paper presents the principal tipes of touristical checkins: hotels, motels, hostels, youth hostels, villas, swiss chalets, bungalows, holiday villages, campgrounds, tourist cabins, camps for students and preschoolers, boarding houses and rural locations.

The result of the study show us an asceding general evolution in all the areas, but the one standing out is the total variation between the places and the number of days in 2013, which reach the point of 8916532. Also, it stad out a stagnation of the evolution for the youth hostels between 2009 till present.

***Keywords**:* touristical checkins, rurals ad urbans areas, ascending evolution, stagnation evolution.

RESEARCH REGARDING THE LEVEL OF PESTICIDES FROM FRUITS AND VEGETABLES FROM ROMANIA, BULGARIA AND REPUBLIC OF MOLDOVA

H. CEAPRAZ, R. GRUIA

The EU has one of the highest food safety standards in the world – largely thanks to the solid set of EU legislation in place, which ensures that food is safe for consumers. A key tool to ensure the cross-border follow of information to swiftly react when risks to public health are detected in the food chain is RASFF – the Rapid Alert System for Food and Feed.

Last meetings show an increasing number of red situations overlapping the limits, especially regarding mycotoxins and pesticides. The paper presents a statistical situation regarding the statement from Bulgaria, Romania and Republic of Moldova.

Keywords: mycotoxine, pesticide, Romania, Bulgaria, Republic of Moldavia;

EFFECT OF (1–3)(1–6) MUSHROOMS ß-GLUCAN ON THE RHEOLOGICAL CHARACTERISTICS OF BREAD DOUGH

M. FRIOUI

β-Glucan is one of the most studied soluble dietary fibres, and is known for its positive effects on human health such as lowering glycemic responses and reducing serum cholesterol levels. (Kinnari J. Shelat et al, 2011), antitumor agent, and many other important health benefits.

In this study we will have studied the effect of (1–3)(1–6) β-Glucan extracted from Pleurotus Ostreatus mushrooms, in the rheological characteristics, the consistence of bread dough and the appearance of bread in all steps of baking, after baking and after several days of storage.

Keywords : β-Glucan - rheological characteristics – dough consistence

STUDY REGARDING THE AVERAGE LENGTH OF STAY OF TURISTS ROMANIAN / FOREIGN FROM THE RURAL/URBAN AREA OF BRASOV COUNTY BETWEEN 2005-2014

B. O. OPREA[1], N. ŢINEA, A. APARASCHIVEI

The paper presents a statistical study regarding the length of tourists stay in the area of Brasov County in the period of 2005-2014.

Data were collected by specialized services from Brasov mayor tourist office and were categorized on the type of tourists (Romanian/foreign). Also, the statistic was accomplished separately on urban area and rural area. The graphics shows the increasing length of stay before 2008 and the effect of financial crises during 2008-2009.

***Keywords**:* tourists average length of stay, Brasov county

STUDY REGARDING THE EVOLUTION OF THE OCCUPANCY LEVEL BETWEEN 2005 AND 2014, IN BRASOV COUNTY

B. O. OPREA, R. MICU. B. DENES

The paper presents the evolution of the touristic occupancy level in the area of Brasov County in the period of 2005-2014.

Data were collected by specialized services from Brasov mayor turist office and were categorized on the type of tourists (Romanian/foreign) and separately on urban area and rural area.

The graphics shows the increasing of occupancy level before 2008 and the effect of financial crises during 2008-2009.

Keywords: tourist occupancy level, Brasov County

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VARIATION OF THE ARRIVALS/OVERNIGHTS NUMBER REGARDING THE TYPE OF TOURISTS (ROMANIAN/ FOREIGN) AND DESTINATION (URBAN, RURAL), BETWEEN 2005-2014 IN BRASOV COUNTY

L. GACEU, C. RUSU, A. ADAM

The 2005-2014 period was a challenge for tour operators especially due to the fluctuation of arrivals and overnights. Brasov, as a business lider in tourism also had a varying development especially during the economic crisis from 2007 to 2009. The work shows a synthetic analysis of statistical values involved in the description of these phenomena. This analysis was structured on recorded values of arrivals and overnights from rural area, respectively urban area (explicit for each locality).

Statistics highlight significant differences between Romanian and foreign tourists.

Keywords: arrival, overnights, Brasov County.

RESEARCH ON THE INFLUENCE OF THE USE OF ULTRASOUND IN THE MATURATION PROCESS OF NATURAL BEVERAGES WHICH ARE DISTILLED FROM FRUIT TO DIRECT FIRED BOILERS

I.R. ŞUGAR, L. GIURGIULESCU, I. VAGELAS, M. BANICA

The maturation process of distillated products has a great importance in the development of high quality products. Sometimes, the maturation process has almost equal importance as the production process itself. The use of ultrasounds could be a solution to shorten the maturation time.

Keywords: ultrasounds, maturation, distillated, products.

USING CHITOSAN AS A SORBENT OF ASPIRIN AND PARACETAMOL

A. BELIAEVA, A. FRUM, G. NIANIKOVA, C. GEORGESCU

Chitosan is able to sorb heavy metals, synthetic dyes, radionuclides, pesticides. Many biological effects of chitosan are revealed by now: hypolipidemic, cholesterol-lowering, hepatoprotective, antioxidant, antibacterial, regenerating and others.

Currently chitosan is used in medicine as a part of therapeutic preparations, ointments, wound covering; as a drug delivery system; for surgical suture manufacturing; for treating obesity, atherosclerosis, and as enterosorbent. Being a naturally occurring polymer, chitosan is compatible with the tissues of mammals, has a high biological activity and is non-toxic.

In this investigation was examined the ability chitosan to interact with 2 drugs: aspirin and paracetamol. During the research chitosan was taken in 5 different concentrations (0.5; 1.0; 1.5; 2.0; 2.5 g/l) and in two different types (powder and flakes). Experiment was proceeded during one hour, in stationary mode, at pH=6.5. The initial concentrations of paracetamol and aspirin were 1 g/l. Prepared samples were analyzed with HPLC method.

It was determined that chitosan sorbs more than 99.9% of paracetamol even if the concentration of chitosan is 0.5 g/l in both flake and powder. At the concentration of 2.5 g/l in flakes chitosan sorbs up to 41.5% of aspirin, in powder chitosan sorbs up to 54.0% of aspirin.

Keywords: chitosan, aspirin, paracetamol, sorption, HPLC method.

PHYSICO-CHEMICAL AND RHEOLOGICAL PROPERTIES OF YOGURT WITH ADDED PLEUROTUS OSTREATUS ETHANOL EXTRACT

S. SOROKIN, R. TUFEANU, M. SHAMTSYAN, I. D. MIRONESCU, E. ANTONCEVA, O. TIȚA

Fruiting bodies and mycelia extracts of fungus, made usually as commercial food product, became increasingly involved as useful additives. They are used due to their ability to increase quality of food product and because of their own beneficial properties. Recent studies, conducted with using extracts of mushroom polysaccharides as additives for yogurt, showed an improvement of rheological parameters in the final product as compared to the initial data. *Pleurotus ostreatus* is the third for the production of edible mushrooms in the world, and extracts of polysaccharides, derived therefrom, were examined for a plurality of medical activities, include antibacterial and hypoglycemic activity.

In this study ethanol extract of polysaccharides, isolated from fruiting bodies of *P. ostreatus*, was used in different concentrations to produce low-fat yogurt. During investigation were measured pH, dry matter, water activity, titratable acidity, syneresis volume and rheological properties of yogurt samples. For comparison, control samples were produced with 0,1% and 1,5% fat content. All parameters were analysed at 1st day, 7th day and 14th day. It was determined, that ethanol polysaccharide extract, incorporated into yogurt, modifies physico-chemical and rheological properties of the product. It is shown, that addition of extract increases the dry matter content and viscosity of the low-fat yogurt. The main physico-chemical parameters of the product have remained in the admissible limits during the entire course of the experiment. By adding the *Pleurotus ostreatus* extract can obtain a fermented milk product with improved functional properties.

Keywords: *Pleurotus ostreatus*, β-glucan, low-fat yogurt, rheological properties, functional food.

STUDY CONCERNING INHIBITORY EFFECT OF CINNAMOMUM CASSIA ESSENTIAL OIL AND HIS COMPONENTS

A. ANDRIȘ, R. GRUIA, L. GACEU

The antibacterial and antifungal potentials of cinnamon essential oil and two of his compounds (cinnamaldehyde and eugenol) were investigated in this study. For the antibacterial study were used two strains of bacteria Escherichia coli and Proteus mirabilis and for the antifungal study a yeast strain Saccharomyces cerevisiae.

The disk diffusion assay showed that Cinnamomum cassia oil and his major compound, cinnamaldehyde, have an important antibacterial and antifungal effect. We observed that this two have a major inhibitory effect against E. coli and S. cerevisiae while against P. mirabilis the inhibitory effect is less important.

The eugenol has a low inhibitory effect against all three microorganisms. In summary the study argues the idea that C. cassia oil has an effectively inhibition effect over E. coli and S. cerevisiae. The preliminary results suggest that C. cassia oil can be used as a natural antimicrobial agent in the areas of food.

Keywords: Antibacterial, Antifugal, Chinese cinnamon, Cinnamaldehyde, Eugenol, Essential oil.

ANTI-URILITHIATIC ACTIVITY OF SOME ESSENTIAL OILS DILUTED IN VEGETABLE OILS

M. NEAGU[1], A. SUCIU G. ALEXANDRU, V. TAMAS, M. POPESCU

The purpose of this study is to compare the potential dissolution of experimentally kidney stones of some essential oils obtained from plants grown in Eco crops versus well known products, such as Urinex, Rowatinex, by an in-vitro model.

Urolithiasis is a complex process that occurs from a series of physicochemical events including super-saturation, nucleation, growth, aggregation and retention within the kidneys.

A kidney stone is a solid piece of material, such as calcium (the most common type), magnesium and ammonia (called a struvite stone), uric acid, or very rarely, cystine (a crystalline amino acid that occurs in most proteins).

Essential oils may play a key role in maintaining healthy, busy kidneys. The increasing popularity of herbal medicines may be explained by the tendency of herbs to work slowly, usually with minimal toxic side effects.

There were selected a few essential oils from organically grown plants: Peppermint (*Mentha piperita*), Rosemary (*Rosmarinus officinalis*), Silver Fir (*Abies alba*), Eucalyptus (*Eucaliptus globulus*), fennel (*Foeniculum vulgaris*) which are dissolved in vetetable oils from Milk Thistle (*Silybum marianum*), Safflower (*Carthamus tinctorius*), Black Cumin (*Nigella Sativa*), Hemp (*Cannabis sativa*) to streamline the action of the final product.

As in vitro experimental model was used a method given in literature

Essential oils studied had a comparable effect with reference products Urinex and Rowatinex .

Keywords: Essential oils, Kidney Stones, Urolithiatic, Calcium Oxalate.

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IT TOOLS USED TO PROMOTE LOCAL FOOD PRODUCERS

C. A. MANEA[1], L. MANEA[2]

When is talking about promoting a product invariably we think of the publicity and advertising. In today's society, an information society, traditional advertising is competed by online advertising, the last one favored by increasing consumer access to Internet, virtual space that becomes part of everyday life. Online advertising involves the use by economic operators of specific tools of the Internet to promote the company's image and the food products, combining visual and auditory stimuli as in classic advertising.

Besides providing traditional ads in the virtual environment, online advertising offers other tools such as achieving and promoting a representative site for trader/manufacturer, so the consumers can find information's about product and its composition, about processing technologies, information about the business management and partners, which are using and promote the product. The information for the consumers eager to be informed about the products they intend to buy, are more complex than the information provided by the product label and presentation from the classic ads, because by visiting the web and by receiving consciously the information that consumer seeks it, has been increased the confidence in the agri-food product.

And because the e-commerce is experiencing a unprecedented growth, given the peculiarities of the food products (perishable goods, validity period, packaging conditions) the websites of the producers and of the traders may be with selling, so the informed consumer and eager to buy, placed an order online and received the products at home, or may be without sale, case in which there is offered the information on how to purchase and to contact.

In this study we propose an analysis of the websites and of the online platforms about food in Romania, starting from the assumption that these online promotional IT tools are used by Romanian consumers and had an impact on consumer behavior.

Keywords: promotion, the platform, site, food, consumer, certification, registration.

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CURRENT IT APPLICATIONS IN ROMANIA TO PROMOTE LOCAL FOOD PRODUCERS

L. MANEA[1], C. A. MANEA[2]

Whether we refer to the websites of local food producers, either to the websites of some type events festivals, fairs or exhibitions tasting, online promotion is developing more and more in recent years even regarding the food. The use of IT tools in promoting foodstuffs is imposed, on the one hand, by the current information society, the Internet being the medium in which information spreads most quickly, on the other hand, through the IT applications the information can be accessed by any consumer, less children, so the manufacturer does not have to organize their presentation based on the category of consumers.

Even if in Romania the local producers require the traditional markets for food, so the consumer can meet face to face with the manufacturer, and accuse the trading system of supermarkets purchasing and selling mainly the import food products so this system is eliminating from the market the Romanian producers, the development and use of specific IT applications as presentation platforms, websites of local producers or events to promote local food products are becoming a necessity felt by local producers.

Analyzing the benefits of IT applications in promoting local food products, noting disadvantages of using these instruments in the medium and long term, we intend to realize a study of existing IT applications on the market in Romania, starting from the assumption that the development of IT application to provide consumers with the necessary information on local food products, it will ensure and will promote, in the same time, the product and the local producers thereby increasing the consumption of local food. Also, our study will provide proposals for improving or developing new IT applications, based on the type of information sought in particular by consumers about local and ecological food.

Keywords: food, local producers, platform, website, information, consumption.

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