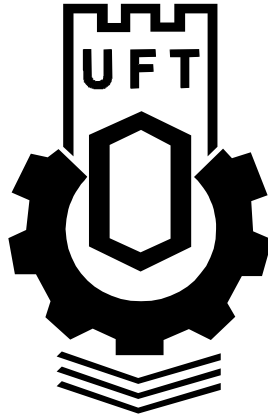


UNIVERSITY OF FOOD TECHNOLOGIES - PLOVDIV



BOOK OF ABSTRACTS

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1.41.

Research on the polyphenol content and volatile compounds of propolis extract

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Abstract

Propolis known as “bee glue” is a resinous hive product collected by honey bees from plant exudates. It is composed of plant resins, bee waxes and pollens. It includes more than 160 constituents. Historically it has been used for various purposes particularly on medical area. It is now used as a health food due to having various biological activities such as antibacterial, antiviral, anti-inflammatory and anaesthetic properties. It is believed that most of these health effects caused by the phenolic compounds and antioxidants in the structure. This study was intended to determine the polyphenol content and volatile compound of propolis extract. In this context, commercial hydroalcoholic propolis extract obtained by using aqueous EtOH with citric acid as the extraction solvent was analyzed by using spectrophotometric and chromatographic methods due to determining phenolic content and volatile compounds. Total polyphenol content of ethanolic extracts of propolis sample were determined.

1.42.

Post-fermentative operations in the technology of non-alcoholic beer

Ho Tuan Anh

University of Economic and Technical Industries, Ha Noi, Vietnam

Abstract

Non-alcoholic beer was the product of the scientific topic ("Research on producing of non-alcoholic beer") implemented by the University of Economics and Technical Industries, Ha Noi, Viet Nam. The beer was produced at an industrial scale 10000 l/batch. During the filtering process, Polyclar®10 as a PVPP preparation was used for separation of the polyphenols to prolong shelf-life of the finished beer. The appropriate proportion of the added Polyclar®10 was identified as 20 g/hl to guarantee the product's colloidal stability. Alcohol is an important flavors component and to improve the tasteless of non-alcoholic beer, fructose syrup was added in beer filtration process as a flavour enhancer. The suitable rate of the fructose syrup was determined to be 0.5% compared with filtered beer. The beer was bottled, pasteurized at same regime with bottles line in Ha Noi Brewery at 25 PU. Determination of the shelf-life of finished beer was based on the experiments of storing.

1.43.

Study of triticale grain hydrothermal processing on the yield and flour quality

N. Ongarbayeva, K. Zhanabayeva

Almaty Technological University, Almaty, Kazakhstan

Abstract

The subject of this paper is the results of change in triticale flour yield and flour ash content depending on binning duration. The research aimed at studying the properties of triticale flour under the influence of moisture necessary for calculating and assigning the mode of preparation and processing equipment. To date, there is evidence on the effect of cold air conditioning regimes on wheat grain characteristics, but similar studies on triticale grain are very few. The hydrothermal treatment modes were established experimentally under cold conditioning of Kazakhstan grade Triticale grains. It has been revealed that the more grain virtuosity is the higher flour yield is, but the colour is lower.

1.44.

Qualitative properties of rainbow trout (*Oncorhynchus mykiss* Walbaum, 1792) from aquaculture facility in Bitola`s region (Macedonia)

D. Blažeković - Dimovska, B. Sivakova

St. Kliment Ohridski University - Ohrid, Bitola, Macedonia

Abstract

The main goal of this research was to determine the qualitative properties of the rainbow trout (*Oncorhynchus mykiss* Walbaum, 1792) from aquaculture facility – cold water fishpond Streževo which is situated in Bitola region, Macedonia. The qualitative properties of the rainbow trout are established by determination of the chemical and the fatty acid composition of the fish meat, the energy value and the microbiological analysis. The main purpose of the research produced additional analyzes that determine the physical - chemical properties and also a microbiological analysis of the water in which the rainbow trout resides, the chemical composition of food used for feeding of the rainbow trout, the condition factor (CF) and the conversion of food. The results obtained during the examination of the chemical composition of the rainbow trout meat from the fishpond Streževo determined the mean value of 74.533% water, 20.600% protein, 3.366% fat and 1.38% ash.

Section IB.

Food Chemistry, Microbiology, Biotechnology and Ecology

1.45.

Determination of seasonal amino acid and proximate composition of Green seaweed (*Ulva rigida*) collected from

Dardanelles, Turkey

N. Berik, H. B. Ormanci

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Abstract

Seaweeds are rich in minerals and nutrients that are important for most of the biochemical reactions and non-nutrient components. *Ulva rigida* is widespread in the coast of Turkish Seas. However, limited information exists in this species as a potential food ingredient. For this purpose, green seaweed samples were collected seasonally from Dardanelles and investigated in terms of proximate and amino composition. According to the results, this species contained limited amounts of lipids, whereas high value of the crude protein. The maximum amounts for total amino acids were determined in spring and the dominant amino acids were detected as aspartic acid+asparagine, glutamic acid+glutamine in all seasons. The results suggest that green seaweed has great nutritional value in terms of high amino acids composition and could be preferred from consumers as excellent food as well as nutritional supplements.

This study were supported by Scientific Research Fund of COMU (Project no 2012/023)

1.46.

Changes in fatty acid and mineral compositions of Rose-shrimp croquettes during production process

E. C. Cankiriligil, N. Berik, H. B. Ormanci

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Abstract

The goals of this paper are to production of croquettes from rose-shrimp meat and to specify occurring changes on fatty acids and mineral contents of them during the production procedure. According to the results, unsaturated fatty acids decreased such as docosahexaenoic, eicosapentaenoic, oleic and palmitoleic acids, whereas saturated ones were increased in the croquette production. After the deep-frying process; saturated fatty acids decreased. However, unsaturated fatty acids especially oleic and linoleic acids increased due to high monounsaturated fatty acid contents of sunflower oil used in frying process. On the other hand, most of the minerals of shrimp meat decreased except sodium, potassium, manganese and zinc throughout the process. While the bromine, boron, copper, manganese and zinc decreased, calcium, magnesium, iron and potassium remained the same statistically after the frying process.

This study was supported Scientific Research Fund of COMU (Project no 2010/142).

1.47.

Determination of organochlorine pesticides in freshwater fish in concern of food safety

T. Stoyanchev, A. Pavlova, T. Yanovska-Stefanova, R. Dimitrova, S. Atanasova, R. Kicjukova, K. Velcheva
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Abstract

The most commonly used in the past organochlorine pesticides (OCP) are DDT, HCH, aldrin and dieldrin. Pesticide residues are present in the soil, water sediment, and in fresh and seawater fishes, as accumulate permanently in the fish meat and their organs, where possess health risk for humans. Methods as Gas chromatography (GC) and mass spectrometry (LC/MS) allow detection of very lower amounts of pesticide in values nanogram per gram meat or extracted fat. Samples from carp, trout, prussian-carp, pike, perch and other freshwater fish species collected from fish farms and dams in different regions of Bulgaria were tested for the purposes of this study. The highest of Σ DDT was 1.47 mg/kg, and the lowest value was 0.003 mg/kg. For γ -HCH calculated contamination was 0.058mg/kg and 0.01mg/kg, respectively. According to European legislation (Regulation EC 396/2005) MRL for Σ DDT is 1 mg/kg, and for γ -HCH is 0.02 mg/kg, but for fish meat and fish fat there are no fixed MRL values yet.

1.48.

Expanding the scope and development of confirmatory chromatographic method for determination of organochlorine pesticides in fish, meat and meat products

R. Dimitrova, R. Stoykova, T. Yanovska-Stefanova

Trakia University, Stara Zagora, Bulgaria

Abstract

Aiming to meet European requirements for monitoring of pesticides residues in food of animal origin the analytical range of existing methods in Bulgaria need to be extended. This paper proposes Expanding the scope and development of a confirmatory method for the analysis of organochlorine pesticides in fish, meat and meat products. Usually, for the purposes of national monitoring programs a total of eight organochlorine pesticides are investigating: Aldrin, Heptachlor epoxide - isomer A, HCH - alpha isomer, HCH - beta isomer , HCH -gamma isomer /Lindane / DDE, DDD, DDT. Using our new method it is possible seven additional pesticide to be determined: Dieldrin, Endosulfan - alpha isomer, Endosulfan - beta isomer, Endosulfan sulphate, HCB, Heptachlor, Heptachlor epoxide -isomer B. In our study we used GC-MS/MS to confirm the above mention compounds in the samples.

1.49.

Investigation of the hygienic status of beverage cans with and without protective cover

G. Gündüz, A. Korkmaz, İ. Emenli, Z. Öztürk

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Abstract

In this study, the microbial profiles of external top surfaces of beverage cans sold in Izmir markets, and the survival of *E. coli* on the top surfaces of cans were investigated through the storage period of 0, 10, 20 and 30 days at 4 and 25 °C. Aerobic mesophilic bacteria (AMB) counts of 100 cans without protective cover and 20 cans with protective cover were examined. The numbers of AMB on the cans without protective cover were in the range of 0.69-4.70 cfu/surface area. Lower bacteria counts in the range of <0.69-2.42 log cfu/surface area were observed on the cans with protective cover. *E. coli* was not detectable on the storage time of 20 days, whereas *E. coli* counts of higher than 2 log units were observed at the 10 days of storage. According to the results obtained by this study, the microbiological profiles of beverage cans are not the same quality; they vary depending on storage conditions and external surfaces of beverage cans that might be potential risk for public health.

1.50.

Immobilization of two newly isolated proteases onto mesoporous silica nanoparticle

I.Hristova, A. Alendarova, Al. Krystanov

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Abstract

Proteases are versatile group of enzymes with indispensable function and diverse application. They are susceptible to inactivation and denaturation which limits their practical application. The immobilization on a suitable surface would enhance their stability in hostile environment and broaden their further application. Two proteases, purified from actinomycete strain *Microbispora aerata* 11A were immobilized on mesoporous silica nanoparticles using APTES - glutaraldehyde method of immobilization. Temperature and pH optimum and stability of both free and immobilized enzymes were assessed as well as their operational stability. The resulted immobilized preparation kept similar biochemical characteristics of the free enzymes (temperature and pH) and at the same time significantly improved their stability. After being subjected to 10 operational cycles (each one with duration of 60 min at 50 °C) the immobilized substance indicated a maximum activity (96%).

1.51.

Biologically active phyto raw materials in technology of acid-forming liquid ferments

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Abstract

The analysis and selection of biologically active phyto raw materials that can be used in the technology of acid-forming liquid ferments. The peculiarities of the chemical composition of the studied phyto raw materials. Studied the ways of its preparation. The effect of the proposed phyto raw materials on the organoleptic, physicochemical, microbiological parameters and baking properties of rye flour. Developed samples of mixtures of rye flour with the introduction of phyto raw materials for use in acid-forming liquid ferments.

1.52.

Analysis of biogenic amine production capacity by some bacteria isolated from bonito lakerda

M. Cardak, H. B. Ormanci, M. Ay, F. Arik Çolakoglu
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Abstract

In recent years, there has been increasing interest in an increasing interest for using some bacteria as a starter and adjunct cultures for producing novel foods with particular functional traits. The purpose of this work was to determine the possibilities of formation of biogenic amines by bacteria isolated from bonito lakerda. A total of 46 bacterial strains responsible for BA formation were isolated from lakerda products. The analytical protocol for determine the ability of some strains to form BA using PCR and HPLC techniques are purposed. Histamine-producing strains were belonged to species of the genera *Staphylococcus* and *Bacillus*. Remarkably, fifteen strains gave negative results for histamine production (0.18 mg/L) and were positive for the presence of histidine decarboxylase gene. Three strains gave positive results for tyramine which reached about 1.63 mg/L. It can be concluded that the bacteria used in food production should be screened carefully by PCR for their ability to produce BA.

1.53.

Monitoring of quinolones in bovine milk in Kosovo

V. Gjinovci, A. Musaj, K. Uka, F. Rexhep

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Abstract

The aim of this work is to monitor the usage of quinolones in bovine raw Milk in 2015, and to find out the possible misused this group of antibacterial in order to protect the human health and side effects of veterinary drugs especially the effects Antimicrobials in humans. The Food and Veterinary Agency as Competent Authority are implementing the National Residue Monitoring Program, where the antibacterial substances are part of it. During the analyzed period, the samples were collected by veterinary inspectors in five Kosovo regions, 181 samples were collected, out of 181, 127 or 70.01% of samples showed the presence of veterinary drugs above the maximum residue level (MRLs) established by European Union and Kosovo legislation were in non-compliance and 54 samples or 29.83 % of samples were in compliance. The conclusion was made, the needs to increase significantly the number of official controls in farms and private veterinary practitioners, increase the number of samples and to trace bases.

1.54.

Biosynthesis of 2-phenylethanol by yeast fermentation

A. D. Angelov, A. I. Angelov, V. Gocheva

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Abstract

2-Phenylethanol (2-PE) is a higher alcohol with rose-like fragrance. The compound's high industrial value is determined by its application in cosmetics, perfumery, and food industries. Yeast fermentation has become the focal point of research effort utilizing the Ehrlich pathway wherein the amino acid L-phenylalanine (L-Phe) is converted to 2-PE. Medium optimization is a crucial step in the development of a bioprocess. The first step of the optimization process is the selection of the most appropriate medium ingredients. This study applies Centroid screening design for evaluation of the effect of several carbon sources, L-Phe, yeast extract, and other ingredient on the biosynthesis of 2-PE using *Kluyveromyces marxianus* 3361. The statistical analysis of the results showed that L-Phe and yeast extract have the strongest influence on the biosynthesis of 2-PE increasing its final concentration by 1.208 g/L. Among the carbon sources glycerol, lactose and sucrose were selected for further steps.

1.55.

Determining the amount of nitrate-ions in vegetables and root crops

G. Bila-Ziyalova, N. M. Antrapceva

National University of Food Technologies, Kiev, Ukraine

Abstract

By method of direct potentiometry made measurements of nitrate ions in vegetables and root crops in 2015 and 2016. Calculated the amount of nitrate ions in the analyzed samples of food and compared with similar surveys in previous years. Found that samples of potatoes and carrots are within the maximum allowable concentration. In samples of tomatoes found a slight excess within 30-84 mg/kg for cabbage and beets value exceeded the maximum allowable concentration of 2.25-3.46 and 3.50-3.74 times the yields of 2015-2016 and 2011-2014 respectively.

1.56.

Chemical group as a basis for improving the knowledge and practical skills in the discipline "Analytical Chemistry"

G. Bila-Ziyalova, N. M. Antrapceva

National University of Food Technologies, Kiev, Ukraine

Abstract

A calculation was made based on of the overall performance of students of II course of the Faculty of bakery and confectionery industries for the 2012-2014 academic years. The causes affected on the performance of students and the quality of performance in groups. Calculated performance of the chemical members of the group Nanokrasitel and compared the quality characteristics in terms of performance in the group. Recommendations to improve the assimilation and develop practical skills of students of technical specialties on the subject Analytical chemistry, who were members of a chemical circle, were made.

1.57.

Possibility of bradyrhizobium japonicum 273 str. to degrade 1,2 – dibromoethane

Ts. Pyrvanova-Mancheva, E. Vasileva, V. Beshkov

Institute of Chemical Engineering – Bulgarian Academy of Sciences, Sofia, Bulgaria

Abstract

The reasons for the increased concentration of nitrate ions in natural water sources are excessive use of nitrogen fertilizers in agriculture and poor treatment of wastewater from households and industry. There are known several methods for processing and purifying the nitrate-containing water, one of them is a biological denitrification, whereby nitrates are successively reduced to gaseous nitrogen. The effect of the influence of nitrite ions on the process of denitrification was studied. Established dependency ratio of the initial concentrations of nitrate and nitrite ions in which the process of denitrification is inhibited.

1.58.

Experimental investigation by wet-chemical synthesis of ternary Bi-Cu-X system (X = Sb, Sn, Zn): Part II: Bi-Cu-Sn

V. Gandova, Iv. Petrova, M. Topuzova

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Abstract

Investigation of the Bi-Cu-Sn system by different methods is presented. The experimental results were connected with lead-free solder materials. The Bi is a low melting element and this is reason to include as elements appropriate for investigations of lead free solder materials. The Cu substrate is regularly used in microelectronic industries, but it is also used as a constituent of multi-component lead-free solders. The Sn is element with more good quality and with wide application in lead-free solder materials. The system was investigate using wet-chemical analyze to determined quantity of Bi and electro gravimetric method to determined quantity Cu in the mixture of Bi(III), Cu(II) and Sn(II) hydroxides. The mixtures ware investigated for nanoparticles, but only microparticles ware determined.

1.59.

Comparative investigation on biologically active water extracts of *Tilia tomentosa* M. and *Matricaria chamomilla* L.

Al. Krastanov, Zl. Dalemska, D. Mihaylova

University of Food Technologies, Plovdiv, Bulgaria

Abstract

Tilia tomentosa M. and *Matricaria chamomilla* L., widely used in the everyday life herbal plants, were the objects of the present research paper. In order to find a more effective method of extraction water extracts of the investigated plants were prepared by applying of three different procedures, namely infusion, decoction and microwave-assisted extraction. The obtained samples were examined and compared for their total phenolic content and antioxidant activity as the antioxidant potential was evaluated by four in vitro assays (DPPH, ABTS, FRAP and CUPRAC). The performed analyses show the prevalence of biological activity in the decoctions referring to the both plant species. The highest TEAC values were established according the CUPRAC assay for the *T. tomentosa* decoct (272.96 ± 6.23 μ MTE/g DW). The results indicate that the total phenolic content correlated well with the evaluated antioxidant potential. The outcomes of the research support the recommendations of frequently intake of

1.60.

Production of fructose and lactic acid from inulin containing chicory flour powder

L. Popova, P. Petrova, K. Petrov

Institute of Chemical Engineering – Bulgarian Academy of Sciences, Sofia, Bulgaria)

Abstract

Over the past decade in biotechnology is an increasing interest in the use of inulin-containing substrates. The interest is linked to the possibility of these substrates can be used as energy sources or by microbial conversion to be used for the preparation of metabolites of wide application. In the case of inulin rich tsikorievo flour is used as a substrate for obtaining fructose and lactic acid. Metabolism is accomplished by having a high inulinase activity isolate *Lb. paracasei* B41, in single-stage process of simultaneous saccharification and fermentation. Depending on the type of ongoing fermentation, the composition of the culture medium and the amount of process parameters tsikorievoto flour can be metabolized completely in the lactic acid or by inhibiting the enzymes of glycolytic chain, lead to the accumulation of fructose. Thus, by tsikorievo flour may be prepared 151 g / l of lactic acid, or 359 g / l fructose.

1.61.

Isolation, purification and characterization of Laccase from the white rot fungus *Trametes versicolor*

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Abstract

Laccases (benzendiol:oxygen oxidoreductases; E.C.1.10.3.2) are copper – containing enzymes, part of the group of so-called blue oxidases. Those enzymes have been reported to exist in different isozymes depending on the laccase-producing fungi, which means they catalyze the same reaction but they have different properties and structure. *Trametes versicolor* produces laccase as extracellular enzyme. In this study different methods for isolation and purification of the enzyme were used. Precipitation with 80% acetone showed optimal results for the enzyme activity. Size-exclusion chromatography (SEC) and ion exchange chromatography (IEC) were used as purification techniques. After the purification phase laccase showed pH optimum 5.0 and temperature optimum at 42.5 °C. Km and Vmax also were determined with values respectively 0.5 mM and 5000 µM/min.

1.62.

**Hydrolysis of casein by novel microbial proteases from
*Microbispora aerata***

Iv. Hristova, Dj. Shukrieva, Al. Krastanov

University of Food Technologies, Plovdiv, Bulgaria

Abstract

Enzymatic hydrolysis is a common method for protein structure modification. That is why the study of proteolytic action of novel proteases on commonly used food proteins is advantageous. In this study, the proteolytic action of two purified proteases from *Microbispora aerata*, on the hydrolysis of casein is studied. Various enzyme -substrate ratios were tested for both proteases. The electrophoretic profile of the resulted fractions was determined and compared to the casein profile obtained after treatment by trypsin. The highest degree of casein hydrolysis with protease H1BT was 16 %, with molecular weight of the hydrolysates from 3-14 kDa. H2BT was able to hydrolyse only 5%, generating protein fraction ranging from 5-20 kDa. The electrophoretic profile of both hydrolysates was clearly distinct from those made by trypsin. These results suggest the potential of proteases H1BT and H2BT to generate peptide fractions with various molecular weights that may be biologically active.

1. 63.

The effect of *Lactobacillus plantarum* on epithelial barrier permeability and adhesion capacity to gut epithelium

D. Kışla, Ç. Çelen, R. Cholakov, A. Nalbantsoy

Ege University, Izmir, Turkey

Abstract

In this study, the effect of probiotic bacteria on epithelial barrier permeability was studied using in vitro cell culture models. CaCo-2 cells were used to determine the resistance and permeability effects of bacteria on epithelial barrier by transepithelial resistance (TEER) assay. Standard probiotic culture *Lactobacillus plantarum*, *Lactobacillus plantarum* BG24 and *Lactobacillus plantarum* BG25 cultures isolated from naturally fermented boza were tested on monolayer CaCo-2 cells. TEER was measured before the addition of bacteria and after 1, 2, 3, 4, 5, 6 and 24 h incubation with *Lb. plantarum* cells. Furthermore, adhesion capacity of *Lb. plantarum* cells was determined on CaCo-2 cells. The results showed that *L. plantarum* exhibited a tendency to increase the ratio of TEER and an ability to adhere to intestinal surfaces in the ratio of 11.88% for standard *Lb. plantarum*, 19.15% for *Lb. plantarum* BG25 and 40.95% for *Lb. plantarum* BG24 with the highest adhesion capacity.

1.64.

Effect of different carbon and nitrogen sources on the growth and butyric acid production of new isolated clostridium

S. Hristoskova, L. Yocheva, D.Yankov

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Abstract

In the recent years, there is a growing interest in the fermentative production of butyric acid because of its wide applications to chemical, food, pharmaceutical, and fuel industries. In this paper, effect of different carbon sources, including glucose, arabinose, sucrose, xylose, starch, glycerol and glycerol + glucose, on to increase the yield of butyric acid by 14 new isolated bacteria of the genus *Clostridium* was studied by batch fermentation. Similarly, peptones, yeast extract, meat extract, tripton, NH_4HPO_4 , NH_4Cl , were added to the basic medium with optimal carbon source so that the best nitrogen sources were determined. The results of this study showed that temperature of 37°C, initial pH 7.5, glucose 2% (w/v) and yeast extract 0,6% (w/v) are the optimum conditions for obtaining the target product.

1.65.

Antiviral activity of lactobacilli against herpes simplex viruse

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Abstract

The emergence of antiviral drug resistance to a variety of viruses makes researchers all over the world to look for new methods to treat these infections. Probiotic lactic acid bacteria (LAB) who can exert their antiviral activity by attending direct probiotic–virus interactions and/or stimulating immune responses play a central role in health improving interactions. The aim of the present study was to investigate the antiviral activity of 8 *Lactobacillus* strains isolated from different traditional for Bulgaria dairy products (white-brined and yellow cheeses). The investigated lactobacilli did not cause any radical changes on the survival and morphology of the treated host cells. Supplied in maximal non-toxic concentration (MNC) and $\frac{1}{2}$ MNC, strains S7 and S8 showed higher activity against Herpes simplex virus (HSV)-1 than strains S7 and S9 – against HSV-2. For this reason, these three strains were determined as promising candidate probiotic strains with antiviral qualities.

1.66.

Influence of nitrate ions on the process of denitrification

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*Institute of Chemical Engineering – Bulgarian Academy of Sciences, Sofia,
Bulgaria*

Abstract

The reasons for the increased concentration of nitrate ions in natural water sources are excessive use of nitrogen fertilizers in agriculture and poor treatment of wastewater from households and industry. There are known several methods for processing and purifying the nitrate-containing water, one of them is a biological denitrification, whereby nitrates are successively reduced to gaseous nitrogen. The effect of the influence of nitrite ions on the process of denitrification was studied. Established dependency ratio of the initial concentrations of nitrate and nitrite ions in which the process of denitrification is inhibited.

1.67.

Production of platform chemicals from inulin

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Bulgaria*

Abstract

Inulin is a polyfructan, consisting of linear β -2,1-linked D-fructofuranose molecules terminated by a glucose residue through a sucrose type linkage at the reducing end. As second abundant reserve carbohydrates in the nature, inulin is a promising substrate for production of many valuable polymers and platform chemicals. Inulin hydrolysis liberates fructose, glucose and oligosugars, which could be further converted into ethanol, lactic acid and other useful products of the microbial metabolism. The present review summarized the wide applications of inulin in industrial biotechnology for producing of fructooligosaccharides, fructose, high fructose syrups, bio fuels or organic acids.

1.68.

Determination of benzimidazoles residues in milk by liquid chromatography with mass spectrometry

T. Ianovska-Stefanova, M. Peicheva, M. Kamburov

University of Chemical Technology and Metallurgy, Sofia, Bulgaria

Abstract

Benzimidazoles, such anthelmintics are used in veterinary medicine for the treatment and control of parasitic infections. Under Regulation of the European Union No 2377/1990 their use is regulated in animals producing milk for human consumption. Developed a fast, sensitive and selective method for the determination of trace residues 15 benzimidazoles in milk matrix by LC/MS-MS. Benzimidazoles were analyzed with a liquid chromatography column Kinetex RP-PFP (50 x 2.1mm) with 2.6 µm by applying a gradient program for the elution 0.01% formic acid and acetonitrile. The scope of the method includes concentration ranges from 5 to 200 µg/kg for different groups . The proposed analytical procedure is validated using the following criteria: linearity, selectivity, recovery, operating range, repeatability, reproducibility, limit non-compliance, the possibility of opening and measurement uncertainty. The method is incorporated into the routine practice of CLVSEE.

1.69.

Antioxidant activity and phenolic profile of extracts of basil –

M. Chulova, R. Vrancheva, M. Stoyanova, At. Pavlov

University of Food Technologies, Plovdiv, Bulgaria

Abstract

The aim of current study was to investigate the antioxidant activity and phenolic profile of different extracts (water, 70 % and 96 % ethanolic (v/v) extracts) of commercially available basil. Provided HPLC analysis of phenolic acids revealed that the rosmarinic acid is the major compound in the investigated extracts (between 3,76 and 13,59 mg/g extract), followed by p-cumaric and chlorogenic acids. Antioxidant activity of the extracts was determined by four spectrophotometric methods differ in mechanism and reaction conditions, namely DPPH, ABTS, FRAP и CUPRAC. The highest antioxidant activity, defined by all tested methods, represented for g dry weight (DW) was determined in the water extracts (162,16 mM TE/g DW, 193,95 mM TE/g DW, 141,69 mM TE/g DW, 238,83 mM TE/g DW, respectively). The observed strong antioxidant activity of investigated extracts is a base for their possibly application as antioxidants in different food systems. Key words: HPLC, basil, DPPH, ABTS, FRAP, CUPRAC

1.70.

HPLC analysis of terpenoids content of lavender flowers

M. Stoyanova, Radka Vrancheva, Al. Stoyanova

University of Food Technologies, Plovdiv, Bulgaria

Abstract

In recent years, there is an increasing interest in plant extracts, because of their valuable biological and pharmaceutical activities. So the purpose of this study was to investigate oleanolic acid (OA), ursolic acid (UA), betulinic acid (BA), betulin and carnosic acid (CA) in the flowers of *Lavender angustifolia* Mill., naturally grown in Bulgaria. Terpenoids profile of investigated species was determined by a simple, precise and accurate HPLC method. All samples were with high concentration of triterpenic acids-oleanolic and ursolic acids (between 20.26-82.36 mg/g extract) and low content of carnosic acid and betulin. The presence of high quantity of triterpens (oleanolic and ursolic acids) in lavender flowers permit their possible application in pharmacy and cosmetics with improved health benefits for human health. Key words: HPLC, lavender flowers, oleanolic, ursolic acids.

1.71.

Antimicrobial effect of SiO₂/hydroxypropyl cellulose hybrid materials doped with zinc ions

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Abstract

The purpose of the present study was the investigation of antimicrobial potential of hybrid materials based on silica, cellulose derivate and zinc ions. The experiments were focused on the formation of inhibition zones of *Aspergillus niger* 371 and *Penicillium chrysogenum* 2303 around the materials. The hybrids were synthesized by sol-gel method from tetraethylorthosilicate (TEOS), hydroxypropyl cellulose (HPC) and different sources of zinc ions - ZnSO₄.7H₂O or Zn(NO₃)₂.6H₂O. The quantity of organic substance was 5 wt. % and the zinc concentration varied from 0,5 to 5 wt. %. It was examined that the size of inhibition zones is dependent on the amount of zinc ions. The results reveal that the longer cultivation of strains leads to decrease of size of zones but although it was monitored clear free of growth zones after 120 h incubation. The zinc ions from Zn (NO₃)₂.6H₂O demonstrate high antimicrobial effect against both fungi strains in comparison to ions from ZnSO₄.7H₂O.

1.72.

Antimicrobial activity of *Lactobacillus plantarum* strains against *Escherichia coli* strains

D. Teneva, B. Goranov, R. Denkova, Z. Denkova, G. Kostov

University of Food Technologies, Plovdiv, Bulgaria

Abstract

The antimicrobial activity of *Lactobacillus plantarum* BZ1 and *Lactobacillus plantarum* BZ2 against *Escherichia coli* ATCC 25922 and *Escherichia coli* ATCC 8739 in co-culture and at single strain culture at a temperature of $37\pm 1^{\circ}\text{C}$ was examined. During co-cultivation an increase in the concentration of viable lactobacilli cells by the 24th h was established and it reached above $1.1013\text{cfu}/\text{cm}^3$, and then remained relatively constant. The concentration of viable pathogenic cells was reduced in a strain-specific manner and by the 36nd h no living pathogen cells were detected. The observed antimicrobial activity was due to a great extent to the acidification of the medium because of the production and accumulation of lactic acid and other organic acids. The demonstrated antimicrobial activity is a prerequisite for further research on the probiotic potential of the two *Lactobacillus plantarum* strains for their inclusion in the composition of probiotic preparations.

1.73.

Antimicrobial activity of phytosterol ester against saprophytic and pathogenic microorganisms

D. Teneva, B. Goranov, R. Denkova, Z. Denkova, G. Kostov, G. Dobrev, Yu. Tumbarski

University of Food Technologies, Plovdiv, Bulgaria

Abstract

Phytosterols, phytostanols and their esters have proven health beneficial effects on the human body – they lower the serum cholesterol levels and have potential in inhibiting cancers. The antimicrobial activity of the phytosterol ester against pathogenic and saprophytic microorganisms at different pH values was determined using the well-diffusion method. The phytosterol ester demonstrated antimicrobial activity against the pathogens *Staphylococcus aureus*, *Listeria monocytogenes* and *Escherichia coli* and against the saprophytes *Aspergillus niger*, *Aspergillus awamori*, *Fusarium moniliforme*, *Rhizopus* sp. and *Penicillium chrysogenum*, the highest antimicrobial activity against the saprophytes being in the pH range between pH = 6.0 and pH = 7.5. The obtained results opened up the possibilities for phytosterol ester application in the composition of different kinds of food, thus obtaining its proven health benefits and serving as a bio preservative.

1.74.

Determination of enrofloxacin residue in chicken eggs using ELISA methods

S. Heta

Food and Veterinary Agency, Tirana, Albania

Abstract

Enrofloxacin is an important antibiotic in poultry industry in Kosovo. The screening of antimicrobial residues in eggs is an especially important subject. The aim of present study is detection of enrofloxacin residue in chicken eggs from five regions of Kosovo: Pristina, Prizren, Ferizaj, Peja and Gjilan. The ELISA method showed that 60/110 (54.5%) samples were positive for enrofloxacin. Of these 33/110 (30%) belong to the Peja region, 18/110 (16.3%) belong to the Pristina region and 9/110 (8.2%) in the region of Prizren. Samples from Gjilan and Ferizaj proved to be negative. Currently, the National Agency of Food and Veterinary in Kosovo is monitoring antibiotic residues in eggs, through a new national plan for monitoring residues in eggs.

1.75.

Monitoring of trenbolone as growth promotion residues in bovine meat on Kosovo in 2015

F. Rexhepi¹, B. Bijo¹, A. Musaj², V. Gjinovci², K. Uka³

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²University of Agriculture, Tirana, Albania

³Public University of Mitrovica, Mitrovicë, Kosovo

Abstract

The use of substances with anabolic activity in stock farming poses a serious food safety risk. The lack of a unique policy framework and standards among different countries represents an enormous drawback regarding the prevention of human exposure to growth-promoting substances. Kosovo Competent Authority adopted the National Plan for Official Control and Residue Monitoring Plan, in compliance with European Community, which strictly prohibits the use of Group A substances in animals used for food production, as well as consumption of meat containing Group A residues, according to the Directive 96/22/EC. The purpose is to present Group A3 substances, so as to detect the Trenbolone parameter in these substances. In order to assess the occurrence of residue levels in the above-mentioned parameter of fresh bovine meat, samples from 25 animals were collected in five different regions in Kosovo, in various slaughterhouses. Samples were tested so far by means of competitive ELISA.

II. Thematic Field. New Aspects of the Tourism Industry, Education, Economics and Management of Food and Biotechnological Industry

Plenary report

The research activity of the Department of Agriculture, Food and Environment of the University of Catania, Italy

Prof. Dr. Salvatore L. Cosentino

University of Catania, Catania, Italy

Summary

This paper presented the past, nowadays and the future of the research activity of the Department of Agriculture, Food and Environment of the University of Catania, Italy. The Department of Agricultural, Food and Environment carries out high quality educational and scientific research activities aiming at improving the social, economic and environmental issues in the field of agricultural and food production. Highly innovative regional, national and international projects on food science and technology; agricultural science, technology, biotechnology, planning, protection of the territory and landscape have been developed to meet the current needs of the society and the labour market. The opportunities for closer collaboration between business and science were discussed. The successful approaches to attracting business partners in joint European and other scientific research projects were demonstrated. The ways to improve the efficiency of scientific research activity and to achieve significant for science and country scientific outcomes that could be easily transferred into practice were mentioned. The relationship farming food and the environment was clearly defined. Science-based approach to ensure financial security research was discussed.

2.1.

Dietary Intake and Exposure assessment from Italian Citrus Products

B. Fallico

University of Catania, Catania, Italy

Abstract

The presentation gives the results of research projects concerning the safety and quality evaluation of Italian Citrus Products.

Using a probabilistic approach, quantitative risk assessments have been performed in order to evaluate the risk of assuming pesticides from fresh blood oranges or colorants from red juices based beverages.

The same approach was used to evaluate the intake of bioactive compounds consuming Blood oranges.

2.2.

The greenhouse vegetable crops in Mediterranean environment

Ch. Leonardi

University of Catania, Catania, Italy

Abstract

Thanks to the mild winter climatic conditions and to the possibility of adopting very simple protective shelters, the Mediterranean Region has gained more and more importance, representing now one of the most important areas in the world.

Due to the increasing attention to environmental impact and to the consumer's demand in terms of good quality and safe produce, growers are adapting production process.

The protected cultivation industry in Mediterranean region, the main strategies to adapt the production process toward its sustainability and to increase produce quality will be discussed.

2.3.

The connection between the business-education by developing mutual projects

E. Maccarrone

Gal Etha, Biankavilla, Italy

Abstract

The presentation looks at the activities of GAL ETNA with special reference to the evaluation of the resources of the territory and the effect on the development of food processing and tourism. Highlighting the particular fertility of the land around the volcano Etna and characterizing the typical agricultural products, it gives an example of the development of the potential of the territory through EC sponsored projects, available within Sicily Rural Development Plan 2007/2013. Some successful cases are presented. They are seen as a good practice in building cooperation between local administration, education and businesses within the territory of GAL ETNA, which is a primary factor in the development of the "knowledge economy", designated as a main priority in European Community economic policy.

2.4.

Comparative price analysis of selected organic and conventional food products at the Bulgarian food market

M. Kovacheva, T. Pancheva

University of Food Technologies, Plovdiv, Bulgaria

Abstract

The paper aims to explore the price differences between some selected organic processed foods and their conventional counterparts, as well as the different price levels and margins of organic foods offered by different producers and distributors at the Bulgarian food market. For this purpose a price study has been conducted, comparing the cost of a market basket of chosen organic goods to their conventional counterparts at different national, regional, and online grocers. The analysis involves four main elements:

1. Analysis of margins in different distributional channels – online shops, supermarkets and specialized healthy food stores;
2. Price analysis of different producers and competitors of organic food market;
3. Analysis of price margin between organic and conventional products made by the same producers.
4. Comparative price analysis of organic foods produced in Bulgaria and of some imported ones of a similar type.

2.5.

Pectin-containing powder of dietary fiber from apple pomace – scientifically reasonable and necessary element of daily food intake of modern human being

Z. Vasilenko, Vl. Redko-Bodmer

Mogilev State University of Food Technology, Mogilev, Belarus

Abstract

In modern society, food began to be carriers of more than 70% of potentially harmful chemicals entering the human body in the course of life. Particular danger and cause early chronic serious illness are heavy metals (including Lead). Lead poisoning is entirely preventable. Sorption ability of Pectin-containing powder of dietary fiber from apple pomace with Lead ions was investigated. There were established processing conditions, created by certain values of pH, temperature and concentration of monovalent cations, when sorption ability of Pectin-containing powder of dietary fiber from apple pomace increases from baseline in 1,7 times (several times more than toxic dose of Lead ions, causing chronic poisoning of human being organism).

2.6.

Organizational culture and theory

S. Panagiotis, S. Fotis

Western Macedonia University of Applied Sciences, Kozani, Greece

Abstract

In this article we will try to make critical analysis the models undertaking the corporate concepts focusing on their strong and weak points. We believe that the decision with regard to the course that will follow an organization for the growth career of workers it constitutes fundamental component of its culture and if it is applied suitably it can constitute one competitive advantage. To reach a conclusion as far as the corporate culture is concerned we make use of related theories and their tools to be able to have a solid view as possible close to the truth.

2.7.

A survey on respondents for consumption of coffee drinks and their impact on human health

Sn. Ivanova, D. Kuzmanova

University of Food Technologies, Plovdiv, Bulgaria

Abstract

We did research on the ingredients of coffee and most - already the impact of caffeine on the condition of the human body. The active ingredient in coffee is stimulant caffeine. Caffeine enters quickly into the bloodstream through the walls of the stomach and small intestine. Most absorbed 4-5 minutes after consumption of the coffee beverage. We have made an overview of research on the effects of caffeine on human health for its positive and negative effects. We looked at some coffee substitutes such as chicory, barley, topinambour (helianthus tuberoses), and their ingredients. We conducted a survey to determine the extent to which consumers of coffee are familiar with the history, characteristics of coffee to determine what their preferences regarding the consumption of coffee drinks to examine to what extent are interested in the product itself, coffee and how their affects their health Respondents are people of different age and gender and with different monthly income.

2.8.

Survey of food preferences of children and teenagers in Southern Bulgaria

E. Zlatanova-Pazheva

University of Food Technologies, Plovdiv, Bulgaria

Abstract

The article sets out the main points of the methodology for the study of food preferences of children and teenagers in Southern Bulgaria. Presented is the definition of a representative sample as technology development and displaying the results. An characterization and comparative analysis of the empirical data as the number of participating schools and students with pre-defined in the sample. Presented are the results of food preferences of children and teenagers to certain types of foods derived based on the statistical analysis Pierson's method.

2.9.

Geographical indications, practical application as intangible assets of companies

Y. Andreeva

University of Food Technologies, Plovdiv, Bulgaria

Abstract

Intangible arise with their creation, a exclusive right to them arises in the legally stipulated time with their recognition accordingly as objects of industrial property rights and compliance with a number of formal conditions, deposit description in a particular form, payment of fees and etc. All the objects of intellectual property have certain spatial coordinates. They can be used at the same time in different places and from different users, without prejudice to the rights of creators. That capacity is called ubikvitet. As such assets of companies intangible should bring future economic benefit to be gained as a result of past events and are controlled by the enterprise. Typical of them is that they are usually carriers of many possible occurrence on its cash flows, but are often indistinguishable from goodwill. The right of intellectual property is subject to protection HEM

2.10.

Historiographical problems of Kazakhstan home front in the years of the Great Patriotic War scientific literature of the second half of XX c.

Z. Tastanova, G. Baimuratova

Kazakh National Agricultural University, Almaty, Kazakhstan

Abstract

The study of history of the Great Patriotic War 1941-1945 is highly relevant to the contemporary world. Today, as well as more than seventy years ago, the international community actively resists to unleashing of a new global war. The Great Patriotic War, being a part of World War II, taught humankind the harsh lessons which won't lose its importance throughout all further history. Implementation of these lessons depends on how they are generalized and how fully the priorities are set.

The role of historiography is undoubted in that. The historiographical review of scientific literature of the 60-80^s of the XX century devoted to problems of the Kazakhstan home front is given in this article.

2.11.

Sources of terminological variation in English and Bulgarian

K. Choroleeva

University of Food Technologies, Plovdiv, Bulgaria

Abstract

The paper discusses some sources of terminological variation in English and Bulgarian. The corpus of examples is excerpted from English and Bulgarian scientific texts on the Technology of Milk and Dairy Products and the Technology of Grain and Baked Products. The paper mentions some problems related to term formation emphasizing that they actually arise in general language.

2.12.

Term formation via secondary nomination: English terms derived from general lexis denoting of the body

K. Choroleeva

University of Food Technologies, Plovdiv, Bulgaria

Abstract

The paper discusses term formation via secondary nomination as exemplified by English terms derived from the general lexis denoting parts of the body. The terminology under study has been excerpted from terminological dictionaries. The aim of the paper is to illustrate how general lexis undergoes terminologisation with the help of metaphor. It also discusses the motivating features which terminological metaphor is based upon as well as some English-Bulgarian correspondences between the terms.

2.13.

Saturation of subjectivity (based on material from local dialects)

T. Derekyuvliev

University of Food Technologies, Plovdiv, Bulgaria

Abstract

The study presents and analyses dialectal material from territorial speech varieties where the personal pronoun I (Az) appears in a form modified by the postfixal morphemes -ка (-ка) and -на (-на): azka (азка), yazka (язка), azkana (азкана), yazkana (язкана), azeka (азека), yazeka (язека), azekana (азекана), yazekana (язекана). Their function is to thicken the meaning of the first-person pronominal personal form. It is regarded within the pragmatics context and an analysis has been offered of the speaker's figure, the explication of subjectivity expressed through the I (Az) pronominal form, and the contextual occurrences of the modified personal pronouns. The modified variants are a saturated manifestation of the speaker's reception and the coordinates of his/her egocentric space; they signal the ethnopsychological dimensions in speech, the local community egocentrism and the territorial groundedness of the speaker's pragmatic expressions.

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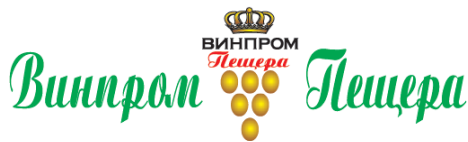
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