ABSTRACT AND REFERENCES

Nutriciology, dietetics, problems of nutrition

PROSPECTS FOR REAL COFFEE ANTIOXIDANT POTENTIAL INCREASE *(P. 3 - 8)*

S.A. Bazhay-Zhezherun

There was examined the raw coffee phenolic compounds basic action in humans, prospects studied of using real coffee to create directed antioxidant action compositions.

There were defined the antioxidant properties of daily demands beverages: real and instant coffee, cocoa, green and black teas, using method based on free radicals, such as α, α-diphenyl - β-picryl hydrazil, neutralization. Content of polyphenolic compounds being the potent antioxidants in beverages under study was determined using spectrophotometric analysis. It was found that real ground coffee extract is the most active antioxidant.

By using the quantum chemistry's semi-empirical methods there was analyzed the ability of natural antioxidants to stabilize free radicals by means of hydrogen atom transfer to the latter. Quantum - chemical calculations were performed at semi empirical version using Hartree Fock successive approximation method. Calculations were performed using Gamess application.

There was analysed number of plants, addition of which will increase the coffee antioxidant activity due to biologically active substance synergistic interaction. There was proposed a phytonutrient form to optimize insoluble coffee drinks production.

Keywords: free radicals, coffee, phenolic compounds, natural antioxidants, antioxidant activity, synergism.

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SUBSTANTINATION REPORT ON PERSPECTIVE USE OF SUGAR SORGHUM IN HEALTHY FERMENTED BEVERAGES TECHNOLOGY *(P. 9 - 13)*

Daria Karputina, Nataliia Frolova, Svitlana Oliinyk

The report provides analysis of the current status of the functional and health-improving products market based on analytical data by international company Euromonitor International.

The report justifies the perspective use of agricultural crop sugar sorghum in many industrial areas due to the unique chemical composition of this crop.

The recommendation is given herein on the optimal hydrolysis mode for high-molecular compounds of sugar sorghum juice – starch, cellulose, haemcellulose assisted by enzymatic agents (EA) Tegamyl FAL and Xylolad. It's stipulated to add into the wort EA Xylolad amounting to 0,5 dm^3/t of the raw material and to add EA Tegamyl FAL amounting to 0,1 dm^3/t of the starch. The following mode of wort fermentation is recommended: main fermentation duration 3 days under the temperature of 12°C, after-fermentation process duration – 2 days under 12 °C temperature. The proposed production modes of the health-improving beverage ensure maximal preservation of all bioactive substances of sugar sorghum juice.

By way of using modern method of capillary electrophoresis the amino-acid and vitamin composition of the wort and ready beverage is determined in this report. Test specimens contained in their composition 18 amino-acids, 7 thereof being essential. The overall content of amino-acids in the wort made up 0,2036 mg/sm^3.

The research determined vitamin composition of the wort and ready beverage. Thus, one glass of beverage made of sugar sorghum juice may provide daily need of a person in biotin (B_7), for 53 % – in vitamin B_6, for 42 % – in vitamin B_1.

Key words: health-improving beverage, sugar sorghum, bioactive substances, enzymatic agents, yeast.

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MARKETING ENVIRONMENT OF THE BREAKFAST CEREAL ENTERPRICES IN UKRAINE *(P. 4 - 18)*

M.R.Mardar, A.Makar, E.A. Golubyonkova, A.I. Yanovskaya

This article presents the marketing environment analysis of the breakfast cereal enterprises in Ukraine. SWOT-analysis which was conducted for the purpose of more depth analysis of breakfast cereal producers and importers marketing environment has identified the environmental factors which have a favorable and adverse effects, as well as internal strengths and weaknesses. Taking into consideration the difference in work conditions and the marketing position, we have identified two sites for the analysis: domestic and foreign manufacturers importing their products to the Ukrainian market.

Considered factors of the enterprises' marketing environment of the breakfast cereal market allowed us to define the development priorities for domestic

manufactures and consequently in future will form the appropriate development programs, improve the competitiveness of domestic producers.

Key words: marketing environment, breakfast cereal, SWOT analysis, market.

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Biological processes, biotechnology of food products, BAA

THE EFFECT OF CALCIUM SALTS NATURE ON THE TECHNOLOGICAL PROPERTIES OF BIOCHEMICALLY MODIFIED PECTINES *(P. 18 - 22)*

Tatyana Nikitchina, Anatoliy Bezusov

The results of studies of the effect of the calcium salts nature on the solubility and gelation of pectines, modified by vegetation pectin methyl esterase are shown in the work. With an increase in the mass fraction of modified pectin in the solution from 0.55 % to 0.7 % the viscosity increases, at its greater value the brittle gels are formed – from 0.77 % to 0.8 % and durable – from 0.9 % to 1 % of pectin.

It is found that with the introduction of calcium salts to the solution of modified citrus pectin degree of esterification 32 %, with the rate of 50 – 110 mg of calcium ion per 1 g of pectin their different behavior is observed, depending on the nature of the introduced salt.

High concentrations of calcium cause the formation of a brittle gel with a strong tendency to syneresis, and ultimately to salting – calcium pectinate. In the presence of chloride and phosphoric calcium in solutions of citrus pectin the clots are formed and consolidated with time. Denser gels with high dynamic viscosity formed in the presence of gluconate and lactate calcium.

It is shown that low esterificated pectines may give thermoreversible gels. Anions of calcium salts significantly affect the structuring of pectin system, calcium cation allows to receive a variety of gel compositions with a content of pectines in the range of 0.55 – 1.0 g per 100 cm^3, which is important for producing of structured, canned and food products.

Key words: pectines, enzymatic deesterification, degree of esterification, calcium salts, gelation.

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EFFECT OF FUNCTIONAL FIBER ON VIABILITY OF LACTIC ACID BACTERIA AND BIFIDOBACTERIA DURING STORAGE *(P. 22 - 27)*

OksanaPoltavska, Nadezhda Kovalenko

The present work shows the influence of gum arabic (Nexira,France) and oligofructose(Orafti®P95, Belgium) on the growth and viability of starter cultures of lactic acid bacteria and bifidobacteria (Christian Hansen, Denmark) used for the production of dairy products. In the presence of gum arabic at concentrations of 3.1 % after 1day of storage the amount of *L. acidophilus* averaged 5,0x10^8CFU/ml, *S. salivarius subsp. Thermophilus* – 4,7x10^8CFU/ml (for both starters), *L. delbrueckii subsp. bulgaricus* – 4,0x10^8CFU/ml, *Bifidobacterium animalis subsp. lactis* –2,5x10^8CFU/ml. After addition of 2 % oligofructose *L. acidophilus* (4,6h10^8 CFU/ml), *S. salivarius subsp. thermophilus* (4,6x10^8CFU/ml), *L. delbrueckii subsp. bulgaricus* (4,0x10^8CFU/ml) has been shown and at 3%of the prebiotic – a slight growth stimulation of *Bifidobacterium animalis subsp.lactis* (4,4x10^8CFU/ml) was observed. Degree of induced syneresis depended on both the concentration of the prebiotic and the starter. Decrease of induced syneresis 1.5 time sat the end of storage in the case of yogurt ABT-1 was observed by adding1 % gum arabic and 2 % of oligofructose, and in the case of yogurt YC-X 11 – by adding 1 % gum arabic and 1% oligofructose. At presence of gum arabic the titratable acidity of the yogurt was in the normal range but significantly lower than the control one. In contrast to control acidity, its performance just slightly decreased during storage. By adding prebiotics active acidity of yogurt ABT-1 and YC-X11 differed slightly from 4,03 ± 0,02 to 4,24 ± 0,00 on the first day of storage of yogurt, and from 3,90 ± 0,00 to 4,07± 0,02 – on the 21st day of storage. It is shown that gum arabic and oligofructose increase water holding capacity (WHC) of dairy product throughout the period of storage: on the first day of storageWHC was from7 2,33±0,52 to 73,33±1,03 % with the addition of gum arabic, from72,67±0.52 to77,33±0,52 % with the addition of oligofructose, whereas in the control WHC was 64,00±0,00 to 65,67±0,52 %. At the end of the shelf life WHC of yogurt with gum arabic was from 69,00±0,00 to 73,67±0,52 %, with oligofructose – 66,67±0,52 to 75,33±0,52 %, in control – 56,67±0,52 to 59,33±0,52 %. According to the given results, these prebiotics can be recommended as growth promoters for the probiotic cultures studied.

Keywords: gum arabic, oligofructose, lactic acid bacteria, bifidobacteria, vitality.

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GROUNDING OF FERMENT PARAMETERS OF MILK-VEGETATIVE CREAM IN PROTEIN PASTE BIOTECHNOLOGY FOR BABY FOODS *(P. 28 - 36)*

N.A. Tkachenko, Yu. S. Ukraintseva, E.I. Grosu

In this work the analysis of Ukrainian baby food market was carried out; there were reflected the prospects of development of protein paste technologies for baby food with the use of bacterial concentrates of lacto- and bifidobacteria of direct insertion with increased probiotic and proteolytic properties; there were shown the prospects of protein paste production by separation method with the use of thermal acid or thermal calcium method of protein separation from skim milk; the parameters of milk-vegetative cream fermentation enriched with fructose as a bifidogenic factor, starter composition made of bacterial concentrates of direct insertion of milk adapted *bifidobacterium animalis bb-12* (*fd dvs bb-12*) and bacterial concentrates of mesophilic lactococcus (*lac. lactis ssp. lactis*, *lac. lactis ssp. cremoris*, *lac. lactis ssp. diacetilactis* і *leu. mesenteroides*), were proved; recommendations concerning the fermentation regimen of enriched milk-vegetative cream: temperature (37±1) °C, duration 11,5 – 12,0 hours were presented.

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Chemistry of food products and materials. New raw materials

RESEARCH OF BIOLOGICAL VALUE OF ALBUMIN URDA CHEESE *(P. 36 - 40)*

Oksana Bilyk, Hrygoriy Dronyk

The aim of our research was to determine and compare the biological value of Urda cheese made from whey of sheep and cow milk and as well as their mixtures. To produce albumin Urda cheese the mixture was composed in three ratios – sheep whey : cow whey: 1:3, 1:1, 3:1. From the mixtures of whey in these proportions the cheese was made and the obtained samples compared with cheese made exclusively from sheep whey, selected for control.

Biological value of albumin Urda cheese was investigated by amino acid composition and digestibility of proteins under conditions in vitro.

Amino acid composition of proteins was determined by an automatic analyzer LC-6001 BIOTRONIK after grinding cheese mass, fat removing and deposition of protein compounds by 10% three chlorine acetic acid. Study of amino acid composition of cheese proteins was performed after their hydrolysis by mixture of 6 N hydrochloric and 4% tyoglycogen acid at temperature 105 – 110 °C for 48 hours in CO_2 environment and subsequent evaporation under vacuum at temperature 45 °C. To assess the balance of Urda cheese proteins for the content of essential amino acids, the method of amino acid swift was used to compare the amino acid composition of albumin cheese according to amino acid ideal protein scale recommended by FAO / WHO.

Protein digestibility was determined by the method of A. Pokrovsky-I.D. Yertanova. In terms in vitro enzymatic hydrolysis of Urda cheese samples was performed by complex proteinase pepsin - chymotrypsin. The efficiency of digestion has been concluded by the accumulation of hydrolysis products in the dialysate, which was determined by the method of Lowry, expressed in milligrams of tyrosine and transferred to 1 g of dry matter of albumin Urda cheese.

Due to the specific features, the combination of wheys from sheep and cow milk for production of Urda cheese made it possible to improve its biological value.

Key words: urda cheese, biological value, essential amino acids, amino acid fast, digestibility, enzyme.

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OXIDATIVE STABILITY OF CULTURED BUTTER DURING STORAGE *(P. 41 - 47)*

Lubov Musiy, Orysia Tsisaryk

The aim of study was to investigate the stability of the cultured butter to oxidation during storage. Starter composition DVS (Chr. Hansen, Denmark) *Flora Danica* (*FD*) and *Lactobacillus acidophilus La-5* (*La-5*) were used for fermenting cream. Four groups cultured butter were produced : Group I (samples KW1, KW2, KW3 using *FD; FD+La-5; La-5*) - fer-

mentation at 30 ºC; Group II (KW4, KW5, KW6 using *FD; FD+La-5; La-5*) - fermentation at 37 ºC; Group III (KW7, KW8, KW9 using *FD; FD+La-5; La-5*) – physical maturation at 8 ºC (2 hours) → biological maturation at 20 ºC (8 hours) → 12 ºC (10 hours); Group IV (KW10, KW11, KW12 using *FD; FD+La-5; La-5*) - introduction starter compositions in butter seed. Sweet butter (CW) saved as Control. Fermented butter packed in polystyrene cups capacity of 200 ml and stored in a refrigerator at a temperature of 4 °C for 35 days. On the 1 st, 10 th, 20 th, 30 th and 35 th days of storage peroxide and acid value were determined. A sample of butter were placed in the condition at a temperature +102±2 °C during the days for the determinate the peroxide number in the accelerated oxidation terms, tests were performed at 24, 48 and 72 hours of storage.

Cultured butter, made in the application of *Flora Danica*, consisting of *Lactococcus lactis ssp. cremoris*, *Lactococcus lactis ssp. lactis, Lactococcus lactis ssp. diacetylactis, Leuconostoc mesenteroides ssp. cremoris* alone and the combination of probiotic culture *Lactobacillus acidophilus* strain *La-5* and fermentation of cream at a temperature of 30 °C was characterized by higher resistance to oxidation.

Keywords: cultured butter, acid value, peroxide value, *Flora Danica, Lactobacillus acidophilus La-5*

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MEAT CONTAINING PRODUCTS WITH BEETROOT COLOUR *(P. 47 - 51)*

Vasil Pasichny, Irina Tymoshenko, Igor Dubkovetsky

In the presented work the attention is paid to the problem of removal, selection and production management of the red natural food colour, received on the basis of natural pigments of table beet for application in meat and meat containing products. It has been proved that it is possible to stabilize beetroot juice with mixture of food acid and salt for increasing of thermal resistance of pigments with the subsequent use in minced meat systems, active acidity of which approximates to neutral. Derivation of dry beetroot colourant in the form of complex mixture with rice flour enables to apply it as a food additive for improvement of structural and colour-forming properties for meat-containing boiled sausages that require additional colouring of non-meat products. The optimal degree of hydration of rice flour and beetroot colour mixture, duration and temperature of drying, their influence on the mixture technological parameters have been determined. A convection method combined with infrared radiation was used for drying, that allows to reduce the amount of energy consumption. It has been determined that the colourant in the form of a coloured powder has a better colouring property compared to liquid stabilized juice. This is caused by better stability of betanin in the dry form.

Keywords: beet juice, stabilization, natural dye, a complex mixture, recipe, meat-containing products.

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INFLUENCE OF PROTECTION VINEYARD OF DISEASE ON QUALITY RED WINES IN SOUTHERN UKRAINE *(P. 51 - 55)*

Oksana Tkachenko, Tetiana Lozovska, Yuriy Shelehov

The main danger in the vineyard are diseases such as frost, mildew, gray mold, the presence of which in a given amount, reduces the intensity of the sugar content of the berries, and the degradation of phenolic complex nitrogenous substances, accumulation of oxidative enzymes. The paper presents the results of a study in the grapes - wine, aimed at identifying the relationship between the protection of the vineyard from disease and the qualitative characteristics of

red table wines. The experiment was conducted in two phases: the first phase involved the processing of traditional vineyard and biological protection systems, the second phase involved the preparation and analysis of the wine on the physico-chemical and organoleptic characteristics. The obtained results of physico-chemical composition and organoleptic characteristics showed that the biological shield does not introduce changes in the quality of the wine, that is, biotechnology can get wine quality consistent with the traditional, but the obvious advantage is a more gentle impact on the ecological environment and intervention in biocenosis.

Keywords: disease of grapes, the protection of vineyards, wine quality, oxidative processes, phenol substances.

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FEATURES OF MINERAL COMPLEX THE WHITE WINE AGROCLIMATIC REGION SHABO *(P. 55 - 59)*

Oksana Tkachenko, Vaga Iukuridze

To determine valid criteria of wine origin, one should start with studying conditions of growing grapes as a material for winemaking, including mineral composition in soil-wine system. The paper dwells on results of studying mineral composition of wine materials of SHABO Industrial and Commercial Company Ltd, as an element of criteria system for identification of zone patterns (terroir). Cation-anion balance analysis of wine materials and their ratios showed low level of sodium and chloride ions. In tested samples of wine materials free sodium content by weight varied within the limits not exceeding the established values. Sodium and chloride ion content by weight was within the range typical for wine materials of SHABO ICC Ltd. Such ratio ranges as “chlorides/buffering capacity”, “chlorides/viscosity”, “chlorides/electric conductivity”, “cation sum/buffering capacity” are typical for wine materials in the given wine growing zone.

Keywords: cation-anion composition, the terroir, the identification of the origin of the system of criteria.

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Technology and safety of food products

NUTRITIONAL VALUE AND SAFETY NOODLES WITH SPROUTED WHEAT *(P. 59 - 63)*

A.V.Antonenko

The results of research of the chemical content of flour «Zdorovja» made of wheat germinated in sea salt solution, are given in this article. On the basis of the results of the research the chemical content of flour «Zdorovja» and rational concentration of carrageenan (2 %) in the flour mixture are determined. The technology of noodles «Kolosok» made of flour «Zdorovja» is developed, and the results of studying its chemical content are given. The use of carrageenan and all parts of the grain in the technology of noodles made it possible to increase the total content of dietary fibers to 3.8 g. The mineral content of the product has improved due to the increase of content of potassium, magnesium, phosphorus, iron and zinc by 1.7 – 4 times, respectively. The content of vitamins B_1, B_2, B_3, B_6, B_9, E increased respectively by 2.3, 2.6, 4.2, 2.9, 1.9 and 1.8 times, respectively.

In comparison of developed noodles with the standard the biological value profiles were made. The conventional food product containing macro-, microelements and vitamins 30 % of the daily requirement was accepted as a standard, which complies with requirements to functional foods. The area of the described profile surface of noodles «Kolosok» is higher compared with the control by 7.3 times and is close to standard values.

It is proved that the safety indexes of the developed product within the fixed shelf life comply with acceptable health standards. Flour «Zdorovja» can be used in production technologies of floury culinary products with higher nutritional value. Social impact of the production of noodles is to provide population of Ukraine with flour possessing increased biological value that can be recommended in the diets of all segments of the population.

Keywords: germination, sea salt, flour, carrageenan, semi-finished product, quality, safety

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MODERN METHODOLOGIES TO IDENTIFY WINES, WINE MATERIALS AND SOFT DRINKS *(P. 64 - 69)*

Nadezhda Aristova

This research deals with a systemic approach to the procedure of identifying wines, wine materials and soft drinks that should be applied with account taken of using a set of criterial quality indicators methodologies, and also with development, affirmation and testing of Methodological recommendations (MR) of

methodologies for measuring (MM) nine major anthocyanins in red and pink wines and wine materials by HPLC (Guidance Document 00334 830.08), organic acids -malic, tartaric, citric, shikimic, acetic, lactic, succinic, fumaric by HPLC (Guidance Document 00334830.088), by HPLC (Guidance Document 00334830.088), coloring agents -(E102, E104, E110, E111, E122, E127, E130, E131, E132, E133) in wines and wine materials, alcohol and soft drinks by HPLC (Guidance Document 00334830.086), preservatives - sorbic, benzoic, salycilic acids in wines and soft drinks by HPLC (Guidance Document 00334830.087) with the use of a liquid chromatograph (Agilent 1100, Agilent Technologies, USA), as well as Methodological recommendations (MR) of methodologies for measuring (MM) cations -K^+, Na^+, Ca^{2+}, Mg^{2+}, NH_4^+ (Guidance Document 00334830.083and anions -Cl^-, SO_4^{2-}, NO_3^- (Guidance Document 00334830.082) by a system of capillary electrophoresis (Agilent CE, Agilent Technologies, USA) equipped with a diode-array detector.

Keywords: wines, soft drinks, HPLC, CE, coloring agents, sweeteners, organic acids, criterial indicators, preservatives, anthocyanins, mineral substances.

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İMPROVERS FOR ELASİCİTY LOWERİNGS AND TENSİLİTY STEP-UPING OF GLUTEN AND DOUGH *(P. 70 - 76)*

Eldaniz Bayramov

For steady work bread of baking industry must be decided problem of raw material, quality of that, as a rule, abandons to wish the best. Prosperity and stability in any country are determined by sufficiency of flour and breads of high quality, providing of that in a great deal depends on quality of feedstock and observance of requirements and regulations of production. For providing of stable quality of flour and bread grain conforming to the requirements of standard is needed.

The most thorny problem is that in difficult economic terms producers appeared grains that is unable to provide stable deliveries on the flour-miller enterprises of grain of the required quality and necessary amount.

The effective use of inprovers envisages clear determination of reasons of unsatisfactory quality of flour that must be improved firstly. For this purpose it is necessary to conduct the thorough enough analysis of her features to educe, in which one direction it is necessary to affect her components for the receipt of dough, and to mean breads of normal quality. The second essential moment is determination of optimal dosages of inprovers, because many of them at exceeding of doses can render sharply negative influence on properties of gluten and dough, and in the total on quality of bread. Otherwise speaking, the carefully thought out and strictly specialized use of chemical inprovers, based on the study of features of both object of improvement and inprover, is needed.

Flour acting on bakery enterprises sometimes falls short of to the requirements of standard that from it a gluten and dough turn out with enhanceable elasticity and lowered tensility. In such cases before a technologist there is difficulty on the choice of inprover, that must provide lowering of elasticity and increase of tensility of gluten and dough. Operative events application of that depends on experience of technologist must be undertaken thus. Researches show that presently there are not clear and operative events, modern bakery inprovers providing lowering of elasticity and increase of tensility of gluten and dough only is generalized in that and systematized. All of it requires the study of influence of bakery inprovers on реологические properties, i.e. on elasticity and tensility of gluten and dough, their generalization and systematization, that is very actual.

In the presented work generalized and systematized the feature of influence of wide-spread bakery improvers, lowerings elasticity and step-up tensility of gluten and dough. Results of researches and information, resulted in a table allow technologists after the analysis of flour with lightness to pick up improvers and expose, in which one direction it is necessary to affect its komponenty, and also render on the stage of premix affecting reological properties of gluten and dough in desirable direction, that it is been to provide lowering of elasticity and increase of tensility them depending on properties of flour.

Keywords: flour, dough, improver, gluten, elasticity, tensility.

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ECONOMIC EVALUATION AND COMMODITY WINTER VARIETIES OF APPLESN *(P. 76 - 81)*

Koltunov V.A., MetelskayaN.S., Brovenko T.V.

The article is dedicated to the problem study on supply of high-quality winter sorts of apples to the domestic and foreign market. The estimation of apples' competitiveness was carried out according to the complex of economic and commodity expert descriptions. For this purpose the method of complex estimation developed by V. Koltunov was used, based on the rank scale of basic indicators and their transfer into dimensionless values. This method allows to consider all apples' indicators of the most importance for the manufacturer, consumer and trade network, in particular: harvesting capacity, chemical composition, organoleptic indicators, resistance to diseases etc.

Obtained research findings have shown that winter sorts of apples have a considerable difference in harvesting capacity, marketability, keeping property, resistance to diseases, taste, size, form, colour and chemical composition. According to the results of determining competitiveness of each sort of apples thought estimation of rank marks as a whole, and according to the sum of certain indicators ranking it was determined that the first place is taken by "Crimean Aurora" sort, the second place – by "Renet Simirenko", and the third one – by "Crimean".

Keywords: apples winter varieties, yield, chemical composition, a comprehensive assessment of competitiveness, the total index ranks of quality indicators

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PRESERVATION THE QUALITY OF PROLONGED COOKIES DEPENDING ON THE TYPE OF PAPER PACKAGING MATERIALS *(P. 82 - 87)*

Victor Osyka, Kostiantyn Mostyka

The use of new packaging materials with enhanced barrier properties is a key issue for enterprises of the confectionery industry. The purpose of research was proving effective use of waterproof paper packing materials when storing cookies prolonged.

Contained in the developed packaging material polyvinyl alcohol is inert to the action of fats and fat-tightness research paper packaging material showed a relatively high figure. This allows you to use such material for packaging cookies are low in fat.

Cookies, packaged in various kinds of paper packaging materials investigated during storage for sensoring properties, indicators of moisture content and fat, microbiological properties. Research of quality changes during storage of cookies lingering indicate that when using waterproof paper packaging shelf life hygroscopic confectionery extended by almost half.

Keywords: prolonged cookies, paper packaging materials, waterproof.

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USING OF MARINADES IN COOKING TECHNOLOGIES OF MAIN-COURSE DISHES *(P. 87 - 92)*

Olexiy Tatsenko, Tatjana Golikova, Jelyzaveta Smirnova

The objective of this study is to investigate technological properties of grilled meat steakes. The thermal losses and cooking duration of beef, pork, mutton, and veal steakes until done were evaluated. The vinegar- and oil-based marinades were used before cooking. The formula of marinade with kefir and kiwi fruit was proposed. Kiwi contains food organic acid that leads to softening of meat and kefir is a probiotic product that increases the nutritional value of ready meals. It has been found out that such a marinade has the highest degree of absorption by the product. After

previous marinating the thermal losses decrease by 1.9 – 4.9 % and duration of cooking – by 0.6 – 4.8 %. The most significant effect is peculiar to cooking of veal and mutton meat. The most positive technological effect after using of kefir and kiwi-based marinade for the veal steakes has been observed.

Keywords: meat dishes, marinade, thermal losses, duration of cooking.

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CHARACTERISTIC OF FORTIFICATION OF BLENDED VEGETABLE OILS *(P. 93 - 97)*

Oksana Topchiy, Ievgenii Kotliar, Irina Kyshenko

An oxidation resistance ability of the plant oil samples namely blended and vitamin fortified was investigate. It has been found that blended oils have similar oxidative stability to the raw plant oils. It was shown that injection of the blends of antioxidant vitamins namely vitamin E and β-carotene can help stabilize an oxidation process and rise an induction period by 1,5-2 times. The chemical and sensory analysis of content of blended and vitamin fortified has been done. The most effective and health useful equilibrium of ω-6 and ω-3 fatty acids in common foods is 10:1 and in the new functional foods it is 5:1. An introduction of vitamin E and β-carotene in blended have a great opportunity to increase physiological value and antioxidant capacity of investigated blended oils.

Keywords: mixtures, vitamins, tocopherol, beta-keratin, anti-oxidants, the induction period.

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