The objective of the research is to find methods for changing the system of individual balanced nutrition with the change of parameters that characterize healthy patient as a result of applying both pharmaceutical methods and procedures, and non-medicamental.

The authors suggest the following approach. An individual nutrition system is recommended to a patient, i.e. a set of complexes from 15–20 iteration-free single consumption rations of different kinds (for breakfast, lunch, dinner, supper, etc.), and as a conclusion, 15–20 daily rations, which can be repeated after some time. Such individual nutrition system guarantees average daily intake of balanced calcium, e.g. 1000 mg for healthy people of a certain category, or 1200 mg, 1500 mg, 2000 mg, but in some cases even more than 2000 mg.

Depending on the patient’s condition the doctor can recommend an average daily intake of balanced calcium for a certain period, having coordinated it with a nutritionist. A different individual nutrition system can be chosen for some period.

According to this scheme the transition from one nutrition system to the other individual system, which is more adequate to the altered state of the patient can take place in dynamics. It is the management of its individual nutrition.

So, the conception of creating personal management systems of nutrition (PMSN) for medication of diseases caused by calcium deficiency is proposed. PMSN performs dynamical interaction between medical treatment and personal nutrition that is scientifically substantiated.

Keywords: nutrition systems, systems of managing nutrition, bone tissue density
THE FORMATION OF NEW NUTRITIONAL PROPERTIES OF BOILED SAUSAGES

M. Golovko, T. Kolesnyk, I. Yakovlev

The recipe of boiled sausage which is enriched with bioorganic calcium compounds, on the base of the traditional dining sausage (interstate standard 23670) is elaborated. The food bone semi finished product is introduced into the recipe of dining sausage in amount of 7% instead of pork; it allows elaborating new health action product with is aimed at osteoporosis prophylaxis. Optimal ratio of calcium: phosphorus, which is 2.4:1 is obtained, which allows to absorb and assimilate these nutrients from sausage. Vitamin D increases the calcium absorption from the sausage in the human intestine, and also carries out its regulatory functions in the exchange of Ca and forms from it the kidney hormone calcitriol.

Reduction of phosphorus content in two times as compared with the calcium content in the sausage increases the effects of Vitamin D on human bone strengthening. Vitamin C promotes collagen synthesis, and forms transport form of vitamin D in human liver. Boiled enriched with bioorganic compounds of calcium sausage is elaborated on the base of the ratio of calcium: phosphorus and the role of vitamins D and C, allows to extend the assortment of boiled sausages and it is functional food product which promotes the prophylaxis of osteoporosis.

Keywords: osteoporosis, prophylaxis, sausage, recipe, calcium, phosphorus, vitamin D, ratio, sodium ascorbinat, indices.

INVESTIGATION OF UNCONVENTIONAL RAW MATERIAL INFLUENCE FROM BUCKWHEAT COATING ON BISCUIT PROPERTIES

O. Postnova, G. Lysyuk, P. Parish

In the conditions of long-continued influence of various harmful factors of the environment – pesticides, mycotoxins, toxic substances, radionuclides, etc. Special requirements are imposed to the safety of products we consume. This problem may be solved by studying the possibilities of effective and rational use of the cereal crops’ components for the development of new products of preventive and therapeutic action. They can normalize exchange processes and functions of the body, its systems, excrete toxicants, and increase body resistance.
That is why very actual is the development of new food products with high content of biologically active substances, which possess antioxidant and radiation protective properties. They also extend storage terms of the end products. The most useful unconventional raw material that helps solving the named problem is the buckwheat coating powdered by means of cryogenic technology.

The aim of the research is to study the influence of crias-adjunct from the buckwheat coating on organoleptic, physical and chemical qualities of buttery biscuit.

The scientists studied the influence of the chosen adjunct on organoleptic properties of buttery biscuit, change of porosity and specific volume of the biscuit.

**Keywords:** biscuit, buckwheat, shell, dough of good.

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**THE CONCEPT OF FORECASTING QUALITY LEVEL OF CULINARY GERODIETETIC PRODUCT**

K. Svidlo, M. Peresichnyi

The purpose of the article is to define the concept of forecasting quality level of culinary gerodietetic products by estimating competitiveness versatility indicator for the developed gerodietetic desserts.

The analysis of the latest research shows a significant market tendency for competitiveness forecasting while taking into account marketing tools for designing new special-purpose technologies and improvement of the production. The concept criteria of forecasting quality level of culinary gerodietetic products was developed. The use of this forecasting concept can significantly adjust decision-making as to implementation of lately developed technologies for culinary products for the elderly group (over 60) and improve management effectiveness in contemporary restaurant business. The obtained results are aimed at further improving qualitative performances of gerodietetic products.

**Keywords:** quality, competitiveness, dessert, gerodietetics.

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**REDUCTION OF LOSSES DURING STORAGE VEGETABLES SENSITIVE TO LOW TEMPERATURES**

O. Priss, V. Kalitka

Solution of antioxidants complex is proposed in the article in order to reduce losses during heat treatment of cucumber and zucchini. This
treatment involves dipping the legume in a solution of antioxidant complex with ionol, lecithin and chlorofillipt at a temperature of 42 °C for 10 min. The use of this treatment allows extending the duration of cucumber and zucchini storage by 3..4 weeks. Symptoms of chilling injury appear one week later comparing to the check legume. Application of this treatment reduces average weight loss per day by 3,2... 4,7 times depending on the type of antioxidant composition. Using hot pre-storage treatment by antioxidants solutions for zucchini allows reducing weight loss by 1.9... 3.5 times depending on zucchini hybrid and type of antioxidant composition. All this contributes to the increasing commodity products output that makes up 93...95% taking into account weight loss after storage.

**Keywords:** storage, post-harvest treatment, antioxidants, cucumbers, zucchini, chilling injury, commodity quality.

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**CHANGES IN QUALITY INDEXES OF HEALTH-IMPROVING MUFFINS DURING STORAGE**

O. Samokhvalova, K. Kasabova

The influence of the extraction cakes of wheat germ and beet fibers on quality indexes during storage is investigated. Use of these adjuncts with large amount of dietary fibers, polyphenol compounds and vitamin E reduces the loss of moisture by muffins, and improves their structural-mechanical properties due to the inhibition of hardening with beet fibers and extraction cakes of wheat germ possessing high hydrophilic qualities.

Besides, accumulation of free fatty acids and peroxide compounds occurs due to the presence of polyphenol compounds and vitamin E in the adjuncts. Use of beet fibers and extraction cakes of wheat germ helps to improve quality and dietary value as well as increase the storage time of muffins. No microbiological spoilage is noticed in muffins with the adjuncts under research during the whole storage time.

**Keywords:** muffins, beet fibers; wheat germ meal, quality indexes, storage.
THE RESEARCH OF THE INFLUENCE OF TECHNOLOGICAL FACTORS ON THE FUNCTIONAL AND TECHNOLOGICAL PROPERTIES OF ANIMAL PROTEINS OF SCANFLAVOUR COMPANY

N. Kamsulina, O. Dromenko, D. Gorodazhev

The article describes the study materials on the market of animal proteins used in the manufacture of various meat products.

The expediency of the use of different types of animal proteins in the prescription composition of meat products. Based on the literature review, it was concluded that the subject of research relating to the study of functional and technological properties of animal proteins such as animal protein of Scanflavour company, which is a leading manufacturer of animal protein in the world market, is important. Also the results of research of functional and technological properties of animal proteins of Scanflavour company under the different affect of technological factors underlying recommendations for their practical application in the technologies of various kinds of meat, is presented. The conclusion of the feasibility and cost effectiveness of the use of these types of proteins in the meat products technologies.

Keywords: animal proteins, functional and technological properties, meat products.

INFLUENCE OF WATER STEVIA EXTRACT ON THE KINETIC OF AGAR SWELLING

G. Dyukareva, O. Sokolovska

The prospects of using water extraction of stevia in the process of manufacturing pastille products as a dissolving polymer – agar, namely its influence on the kinetics of agar swelling, are considered in the article. The possibilities of introducing it into the recipe will allow reduce sugar mass content and receive pastille products with its reduced amount. At the same time organoleptic, physical-chemical and rheological parameters of the products will not be spoiled.

The investigations were carried out by means of the method of comparing masses before and after swelling and dispersed composition of agar. The starting point for the formation of pastille products’ quality is agar swelling, which is the first stage of polymers dissolving. The solubility of agar molecules in the dissolvent depends on the level of its swelling that increases general concentration and stipulates formation of harder gels.
Based on the obtained results the authors made a conclusion that water extraction from stevia positively influenced the swelling process and time for the achievement of its required level reduced.

**Keywords**: stevia, extract, agar, polymer, calves-foot, swelling

### QUALITATIVE INDEXES OF PARSLEY DURING STORAGE WITH THE USE OF HYDROGEL AND ANTIOXIDANTS

**O. Priss, A. Kulik**

Effect of usage of hydrogel and antioxidants for green vegetables storage is considered in the article. The use of this method allows extending the duration of parsley storage by 40...55 days, it enables reduction of wastes in average by 2,48%, level of non-standard produce by 8,99% and increase of post-storage marketable outcome of parsley by 26,72%.

The influence of temperature and rainfall on commodity quality after storage was investigated. It was shown, that strong influence on marketability of parsley has the sum of active temperatures and rainfall, as the coefficient of correlation makes from -0,71 to 0,99. It was found that the use of the given method of storage with cooling allows detaining the processes of chlorophyll destruction and vitamin C and saving the maximum biological value of parsley after storage.

**Keywords**: storage, parsley, hydrogel, antioxidants, marketable quality, rainfall, chlorophyll, vitamin C, sum of active temperatures

### FORECASTING QUALITY TECHNICAL INDICATORS OF APPLE FRUITS DEPENDING ON STRESS ABIOTIC FACTORS

**M. Serdyuk, S. Bayberova**

The estimation of the influence of weather factors on the apple fruits quality technical indicators in the south of Ukraine steppe zone is presented. It has been found that the main factorial of an apples quality indicator should be considered an average weight of the fruit. The correlation analysis results have revealed the main stress weather factors in the region, having the greatest impact on the weight of apples. These included: the amount of active temperatures during the last month of the fruit ripening and the yearly quantity of days with precipitation greater than 1 mm. Methods of variation statistic were used for the analysis of the
experimental data and the end result forecasting. The function of linear dependence: \( Y = a_0 + a_1X_1 + a_2X_2 + \ldots + a_nX_n \) was used for a multifactor model forming. As a result a multi-factor model that allowed forecasting the mass of apple fruit depending on the influence of abiotic stress factors has been developed.

**Keywords:** marketability, mass, diameter, shape, apples, temperature, precipitation, humidity.