

Contents Vestnik MGUP, 2016 №1(20)

Contents

INFLUENCE OF WASHING APPLES POMACE DRIED IN VIBROBOILING LAYER ON THE QUALITY OF PECTIN AND ON THE STRUCTURE OF ITS MOLECULES

Z. V. Vasilenko, V.I.Nikulin, L. V.Lazovikova

Combined effect of the basic technological parameters of washing granular apple pomace dried in a vibroboiling layer on pectin quality indices and on the structure of its molecule was studied. It is found that washing of dried apple pomace does not result in an increase in yield and basic quality indices of the pectin obtained.

STUDY OF THE INFLUENCE OF PIGMENT-LIPID COMPLEX ON THE VOLATILE CONSTITUENTS OF SPICY-AROMATIC RAW MATERIALS

O.I. Melnyk

The article reports about the relationship between pigment-lipid complex and aromatic constituents of spicy-aromatic raw materials. Color retention and aroma richness relation is shown. It is found out that microwave treatment may become a fast and reliable way for quantitative conservation of chlorophyll in dehydrating plant raw materials. Microwave field results in the smallest destructive changes of chlorophyll-lipid complex of spicy-aromatic raw material leaves.

DEVELOPMENT OF THE TECHNOLOGY FOR THE PRODUCTION OF BIOETHANOL FROM LIGNIN-CELLULOSE RAW MATERIALS

M.A. Kirkor, E.A Tsed, S. V.Volkova, V.I.Nikulin

A study was made into the fermentation of lignin-cellulose raw materials in the production of bioethanol. Enzyme preparations that are optimal for fermentation process were determined. It is shown that there may be a new method for the technology of producing bioethanol from non-wood plant raw materials. The method does not require prior acid and alkaline cellulose hydrolysis in wort production, which makes it possible to facilitate significantly the technology for the production of non-food ethyl alcohol.

MINERAL AND VITAMIN COMPOSITION OF BERRY POMACE

Z. V. Vasilenko, N.A. Mogilevchik

Qualitative composition of minerals and vitamins in chokeberry, black currant, cranberry pomace and their quantitative content were studied. Atomic emission spectroscopy was applied to determine micro and macro elements such as potassium, calcium, magnesium in berry pomace as well as molybdenum, boron and other elements in chokeberry pomace. B1, B2, PP, E, C vitamins, pantothenic acid, folic acid as well as qualitative and quantitative differences in mineral and vitamin content in pomace obtained from various berries were determined.

PROSPECTS FOR THE USE OF MAIZE GROWN IN THE REPUBLIC OF BELARUS IN FOOD PRODUCTION

O.D.Tsedik, V.I.Kravtsov

Physico-chemical and technological properties as well as chemical composition of ten varieties of Belarusian selection maize hybrids were studied. Comparative analysis of their quality was carried out. The hybrids with the best characteristics of the properties under investigation that are characterized by the highest quantitative and qualitative indicators of grinding corn into finely ground flour were determined. Four varieties of corn hybrids to be grown for further processing into maize flour were proposed.

STUDY OF THE EFFECT OF LINSEED CAKE INTRODUCTION METHOD ON THE QUALITY INDICES OF COOKED SAUSAGES

Z. V. Vasilenko, E.N.Kucherova

A study was made into organoleptic and technological quality indices of linseed cake. Effect of linseed cake introduction method on quality indices of cooked sausages was revealed. Physico-chemical and organoleptic indices of the cooked sausages to which linseed cake was introduced as an additive that enhances (modifies) their nutritional value and technological properties were studied.

CHANGES OF PROTEIC SUBSTANCES IN SHEEP'S MILK CHEESE CAUSED BY PARTIAL SUBSTITUTION OF COMMON SALT FOR POTASSIUM CHLORIDE

I.V.Skul'skaya, O.I.Tsisaryk

The article highlights the results of the studies on proteic substances in sheep's milk cheese caused by partial substitution of common salt for potassium chloride in the amount of 20 and 30%. Bacterial preparation RSF-742 combined with microbial preparation Fresh-Q (Chr. Hansen, Denmark) was used. Substitution and use of Fresh-Q preparation have been shown to have positive effect on proteolytic processes. It has been found that the content of free amino acids and the number of essential amino acids increase. Nitrogen content of soluble proteic substances, which determines dietetic properties of cheese, increases in the samples with 20 and 30 % salt substitute.

COMPARATIVE CHARACTERISTICS OF FUNCTIONAL AND TECHNOLOGICAL PROPERTIES OF PEA FLOUR "PEATEX" AND FLOUR FROM PEA VARIETY "PHARAOH"

Z.V.Vasilenko, P.A.Romashihin, O.A.Vetoshkina

Basic functional and technological properties of flour from pea variety "Pharaoh" and pea flour "PEATEX" produced by extrusion were studied. It is found that organoleptic quality indices of the test samples are about the same. Water binding capacity of pea flour "PEATEX" is shown to be much higher than that of flour produced from pea variety "Pharaoh". The effect of the salt solutions as well as time and temperature of hydration on water-holding capacity of pea flour was determined.

INFLUENCE OF ORGANIC ACID SALTS AND POLYHYDRIC ALCOHOLS ON WATER-HOLDING CAPACITY OF CONNECTIVE TISSUE PROTEINS CONCENTRATE "BELPRO"

Z. V. Vasilenko, E.N.Rogova, O.A. Vetoshkina

The influence of organic acid salts and polyhydric alcohols of different molar concentration on water-holding capacity of connective tissue proteins concentrate "BELPRO" was studied. Efficient molar concentrations of organic acid salts and polyhydric alcohols were determined. Organic acid salts and polyhydric alcohols are found to increase water-holding capacity of connective tissue proteins concentrate "BELPRO".

CORRELATION OF THE MOLAR VOLUME OF LIQUID NORMAL PARAFFINS AND THEIR MIXTURES

T.S. Khasanshin, A.P. Shchemelev, V.S. Samuylov, O.G. Poddubsky

Molar volumes of liquid paraffins from n-pentane to n-tetrahexacontane and their mixtures at the atmospheric pressure and on the saturation curve over the temperature range from 143 to 573 K were analyzed. The equation describing dependence of molar volume on the number of carbon atoms in the paraffin molecule or on the average number of carbon atoms in the molecules of paraffin mixtures was obtained. It is found that experimental data available are in a good agreement with the results of molar volume calculation by means of the equation obtained. The possibility of predicting bulk properties of experimentally uninvestigated liquid paraffins and their mixtures is shown.

VISCOSITY CONTROLLER FOR LIQUID MEDIUM

G.M. Ayrapetiants, N.I. Ulyanov, S.N. Adamov, E.G. Rudenok

Existing means for controlling the viscosity of liquid media are considered and analyzed. The requirements for the development of monitoring systems for liquid media based on the automatic viscometer are stated. An automatic scheme for flow viscosity control based on microprocessor technology applied in food and chemical industries is proposed. Economic efficiency of manufacturing application of viscosity regulator is calculated.

DESIGN AND THEORETICAL STUDIES ON THE PNEUMATIC LOADING OF THE HOPPER THROUGH A DISTRIBUTING LINE

V.P. Chirkin, M.A. Kirkor, S.V. Boguslov

The article provides an overview of analysis and description of the existing systems for grain material pneumatic loading and unloading as well as active ventilation in hoppers. New facilities for investigating the processes of active ventilation and pneumatic handling of grain materials in hoppers are suggested. The processes of pneumatic loading of the hopper through the distributing line were studied theoretically.

ANALYSIS OF SOME INDICATORS OF NEW VALVE DISK OPERATION

D.N. Maitam

The operation of a valve disk of a new design, which enables to increase the efficiency of mass transfer processes in terms of liquid carry-over from one disk to the other is analyzed. The results of the study of a new valve disk in the effectiveness of airflow saturation with moisture are reported.

TERNARY GROUPS OF CUBIC MATRICES

A.M. Gal'mak, G.N. Vorobiov

The article deals with ternary operations on the sets of cubic matrices.

RESEARCH AND DEVELOPMENT WORK AS A MAJOR FORM OF INNOVATION ACTIVITIES, EVALUATION OF ITS PERFORMANCE

T.I. Sushko, E.E. Bantsevich

Theoretical and methodological bases for determining the value of intellectual property as well as those for the experience assessment both in national and international practice are suggested. It is concluded that the purpose of the assessment is determined by the adequate costs. Relationship between the costs is analyzed. Scientific approaches to the classification of the principles of

evaluation of research and development workresults are considered. More comprehensive classification of the principles as a methodological basis for the cost estimation and calculation of the costs of scientific and technical activities is proposed.

PEDAGOGICAL ISSUE OF JUNIOR STUDENTS' THESAURUS FORMING

E.N. Voronova

The relation between students' performance of mastering scientific concepts and level of development of thesaurus is considered. The problem of the formation of students' thesaurus at the present stage is studied. Methods for forming thesaurus at junior students are suggested.