

8th Central European Congress on Food

Food Science for Well-being 23-26 May 2016, Kyiv, Ukraine









EFFoST







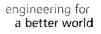
BOOK OF ABSTRACTS

SPONSORED BY:



Techinservice®

















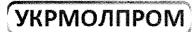


НАЦІОНАЛЬНА АСОЦІАЦІЯ ВИРОБНИКІВ ДИТЯЧОГО ХАРЧУВАННЯ, МОЛОЧНОКОНСЕРВНОЇ ТА СОКОВОЇ ПРОДУКЦІЇ "УКРКОНСЕРВМОЛОКО"



INTERNATIONAL FOUNDATION FOR SCIENCE

Національна асоціація



молочників України





Kyiv, 2016

8th Central European Congress on Food 2016 — Food Science for Well-being (CEFood 2016): Book of Abstracts. — 23-26 May 2016. — K.: NUFT, 2016. — 314 p.

ISBN 978-966-612-181-6

Collection of abstracts by leading scientists, specialists and young researchers in the field of food science, technology, chemistry, economics and management presented to the Congress

The congress addressed the following topics: FOOD EXPERTISE, SAFETY AND TECHNOLOGIES

- Food Expertise and Safety
- Food Technologies

ENERGY SYSTEMS FOR FOOD CHAIN

- Energy Efficiency
- Machine Building for Food Chain
- Intelligent Control Systems

NATURAL BIOACTIVE COMPOUNDS, FUNCTIONAL AND NATIONAL FOOD PRODUCTS, PACKING, STORING AND PROCESSING

- Natural Bioactive Compounds, Functional and Local Food Products
- Packaging, Storing and Processing
- Food Processing

MODERN CHALLENGES AND COMPETITIVENESS

YOUNG FOOD SCIENTISTS — OUR HORIZON

Recommended for teaching staff, engineering and technological personnel, managers of food industry

Published in authors' edition Recommended by the Academic Council of National University of Food Technologies

Minutes № 12, 19.04.2016

ISBN 978-966-612-181-6

UDK 664

© NUFT, 2016

Ludmyla PESHUK, Oleksandra HASCHUK	
ANALYSIS OF ALTERNATIVE PROTEIN SOURCES FROM	150
THE SECOND RESOURCES OF FOOD INDUSTRY	. 158
PATES OF NEW GENERATION WITH MUSHROOM RAW MATERIAL	. 158
Tamara KORZH, Marina PEREPELAK	
FLAX SEEDS ARE THE FLOUR COMPONENT MIXTURES OF A HEALTHY DIET	. 159
Oleksandra HASCHUK, Olga CHERNYUSHOK, Oksana MOSKALYUK, Lyudmila PESHUK	1.50
PROSPECTS FOR THE USE OF NATIVE WHEY DAIRY IN THE PRODUCTION OF MEAT PATES	
Yevgen HARCHENKO, Andriy SHARAN, Mikola PEREHUDA THE TECHNOLOGY OF THE REDUCED GRINDING OF WHEAT	160
Igor GAPONYUK	. 100
DIFFERENT SPEED OF DIFFUSION OF MOISTURE IN CAPILLARIES OF GRAIN	
AS FACTOR OF VARIABLE ENERGY OF DRYING	160
Igor GAPONYUK	
THE GROUNDING OF VACUUM-THERMAL MECHANISM OF MOISTURE DIFFUSION OF CAPILLARY-POROUS BODIES	161
Antonella DOROHOVYCH, Viktoriia DOROHOVYCH, Mykola PETRENKO	. 101
MODEL OF PERFECT CHEMICAL COMPOSITION OF THE PRODUCT ACCORDING	
TO THE REQUIREMENTS OF NUTRICIOLOGY	. 161
Darya BASIUK, Valerii KUZNETSOV	
THE ADVANTAGES OF THE CUSTOMER RELATIONSHIP MANAGEMENT SYSTEM	160
IN TOURISM BUSINESS	. 102
STUDY OF TERROIRS FOR THE PRODUCTION OF ROSE WINES IN UKRAINE	. 162
Viktor GOOTS Olga KOVAI	
THE MOVEMENT MODELLING BY GRAVITATIONAL ATTRACTIONS	. 163
Mykola BONDAR, Petro SHIYAN, Anatoly KUTS	
METHOD OF ANTISEPTION OF RIPEN BREW IN TECHNOLOGY OF ETHYL ALCOHOL FROM STARCH RAW	162
Galyna POLISCHUK, Oksana BASS	. 103
ADJUSTMENT OF RELATIVE SWEETNESS OF ICE CREAM WITH STARCH SYRUP	. 164
Oleksandr BESSARAB. Anatoliv BEZUSOV. Tatiana NIKITCHINA	
OUTLOOK OF UTILIZATION OF PECTIN METHYL ESTERASE OF PLANT RAW MATERIALS	. 164
Petro BOYKO, Anatoliy FISCHENKO	
THE DEPENDENCE OF THE RATE OF MASS TRANSFER AND GROWTH OF MICRO ORGANISMS IN THE CULTURAL MEDIUM FROM THE ACTION METHOD DISCRETE-PULSE INPUT OF ENERGY	165
Petro BOYKO, Anatoliy FISCHENKO	105
THE INTENSIFICATION OF THE OXIDATION OF GROUND WATER WITH OXYGEN	
FOR WATER TREATMENT TECHNOLOGIES	165
Anatoliy UKRAINETS, Oksana KOCHUBEI-LYTVYNENKO, Vyacheslav MYKHAILYK	
DEFINITION OF GLASS TRANSITION TEMPERATURE TO ASSESS THE STORAGE STABILITY OF DRY MILK WHEY	166
Olena KOKHAN, Olga VAYSERO, Nazar SALIKH	100
WAYS OF PROLONGATION OF STORAG EUNGLAZEDS WEETS	. 166
Valery MAKHYNKO, Ludmyla CHERNYSH, Oksana BEREZNA	
INFLUENCE OF VEGETABLE PROTEIN ISOLATES ON STRUCTURAL	
AND MECHANICAL PROPERTIES OF WHEAT DOUGH	167
Valentine KOSHOVA, Roman MUKOID, Andriy USACH THE INFLUENCE OF WATER TEMPERATURE ON THE SOAKING OF BUCKWHEAT	167
Svitlana OLIINYK, Vitalii PRYBYLSKII, Natalia CHUPRYNA, Iryna DOVGUN	107
IMPROVEMENT OF WATER TREATMENT TECHNOLOGY FOR THE PREPARATION	
OF HONEY-BASED FERMENTED BEVERAGES	168
Vitaly PICHKUR, Volodymyr KOVBASA, Andriy SHARAN	
FORTIFICATION OF FOOD CONCENTRATES BY USING	1.60
FREEZE DRIED FRUIT AND VEGETABLES	168
SCIENTIFIC JUSTIFICATION OF OAT MALT FLOUR USING	
AND GUM ARABIC «FIBREGUM» IN BISCUIT TECHNOLOGY	169
Maria LABZHYNSKA. Olena SUPRUN-KRESTOVA	
CREATING OF THE CEREAL'S COMPOSITE MIXTURE OF INCREASED NUTRITIONAL VALUE	169
Raisa PAVLYUK, Victoria POGARSKA, Alexander BESSARAB,	
Tatiana KOTYUK, Tatiana MATSIPURA NANOTECHNOLOGIES OF PROTEIN HERBAL ADDITIVES	
WITH PREBIOTIC PROPERTIES OBTAINED WITH THE USE	
OF NON-ENZYMATIC BIOCATALYSIS — MECHANOLISYS	170

Oleksandr BESSARAB¹, Anatoliy BEZUSOV², Tatiana NIKITCHINA²
a_bessarab@i.ua

¹National University of Food Technologies, Kyiv

²Odessa National Academy of Food Technologies, Odessa

UKRAINE

OUTLOOK OF UTILIZATION OF PECTIN METHYL ESTERASE OF PLANT RAW MATERIALS

Pectins are the main component of cell membranes of plant raw materials. Pectines change their form being effected by pectinolytic enzymes of plant raw materials: polygalacturonase and pectin methyl esterase (PME). One of transformations of high-ester pectin (HEP) into low-ester pectin (LEP) occurs under the effect of genuine PME of plant raw materials. The enzymic system of the natural raw materials contains highly active PME. The simplest example is exfoliation of the tomato pulp due to transformation of HEP into LEP. PME was found in plantain, clover, celandine leaves, its activity has the highest importance in the period of biological ripeness of the cultures. Studies of PME activity in fruit and vegetable raw material have shown that the activity is the lowest in beet and quince, medium in potato, pumpkin, green pepper, and the highest in tomatoes and turnip. Plant esterases show the optimal activity close to the neutral and alkaline isoelectric point and are bound to the cell wall with electrostatic couplings. PME activity depends to the certain extent on presence of cations in the medium. Thus, heavy metal cations decelerate the enzymic degredation of pectin molecules. Chlorine salts Ba, Hg, Zn, Mg in concentrations 0.001 M inhibit PME activity, while bivalent cations — Cd⁺, Mn²⁺, Co²⁺, Ca²⁺ in the same concentration increase enzyme activity. Optimal pH of plant esterases is 4.5 to 8, if they effect the natural pectins of the raw material itself. Optimal temperature is about 40 °C. Technologies if structured canned products were developed which include the raw material with high PME activity as part of the recipe. The second area of our developments is isolation of PME from potato processing wastes — vegetable water and utilization in manufacture of jellified products- fruit jams, sugar free and low sugar jelly.

KEY WORDS: high-ester pectin, low-ester pectin, plant esterases, pectin methyl esterase, canned products