

SEVERAL EFFECTS OF SOME ELECTROTHERAPY TREATMENTS OF PVX AND PVY INFECTED POTATO PLANTLETS CV. ROCLAS

C. L. Badarau¹, F. Damsa, A. Nistor

Introduction The potato quality is strongly influenced by potato virus X and potato virus Y. Using several electrotherapy treatment variants, the virus infection level decreased significantly. The aim of this study was to estimate some biological effects of these treatments.

Material and methods The biological material used in experiments was plants (variety Roclas, virus free biological material) mechanically inoculated with PVX and PVY. Electrotherapy was applied in 9 variants: after washing and sizing explants, potato stems infected were exposed to either 40, 50 or 100 miliampers, for 5, 10 or 20 minutes, followed by sterilization and planting the axillary buds tip in vitro. Physiological indicators were determined after 42 days of vegetation (PVX infected material) and after 36 vegetation days for the other plants. Monitoring the vegetative state of healthy regenerated plant was done by estimation the chlorophyll content of leaf (portable device SPAD 502 Chlorophyll Meter) and the anthocyanin content at leaf (portable device ACM 200 plus, Antocianin Chlorophyll Meter).

Results Within the elimination of viruses PVY and PVX by electrotherapy was noticed a significant decrease of chlorophyll content compared to the control in case of variant V9 (100mA/20minutes). Regarding the content of anthocyanin, there were significant differences between values recorded in the experimental variants. Compared to the negative control, however, it was found small increase of anthocyanin content in case of material initially infected with PVY.

Conclusions As opposed the content of anthocyanin, we remark that monitoring of chlorophyll content indicate some changes in plant physiology, being observed effects of electrotherapy treatments over the biological material regenerated from plantlets infected with PVX and PVY and treated.

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Keywords: *Potato, potato virus X, potato virus Y, electrotherapy, chlorophyll, anthocyanin.*

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Foreword

*The quality of each person's life, as well as the entire evolution of a society, depends on the nutrition and psychical health of the human being. The world is nowadays confronted with a demographic explosion, concomitantly with a planet-wide accentuation of agricultural and food deterioration. This is the reason why we have to be prepared, **in the XXI-th century**, to face the Global and Local Challenges in Food Science and Technology, generated by the the quantitative and qualitative food-related needs.*

Under this thema, more than 200 papers were received on the topics of food production, food processing, food quality and safety, nutrition, engineering and design, innovative technologies.

*The **3rd NEEFOOD Congress** aims to keep the quality of an integrated, multidisciplinary and interconnected international conference on the topic of agri-food fields and it also drawn the interest of numerous specialists who continuously attempt to identify solutions to difficult contemporary problems.*

*The impressive international participation encourages us to believe that the **3rd NEEFOOD Congress** may have positive echoes emerged from the experience and contribution brought by all **international participants** from Austria, Belgium, Bulgaria, Croatia, Czech Republic, Germany, Hungary, Poland, Republic of Moldova, Serbia, Switzerland, Russia, Ukraine and United Kingdom together with researchers from Romania.*

*This book of abstracts contains selected abstracts of papers presented during the **3rd NEEFOOD Congress**.*

*A number of selected papers presented at **3rd NEEFOOD Congress** will be published by Elsevier. This selection will be done by the Congress Chairs, among the papers actually presented at the conference, based on a rigorous review by the Scientific Committee members.*

The program for this conference required the dedicated effort of many people. Firstly, we must thank the authors, whose research efforts are herewith recorded. Secondly, we thank the members of the Scientific Committee and the additional reviewers for their diligent and professional reviewing. Last but not least, we thank the invited speakers for their invaluable contribution and for taking the time to prepare their talks.

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Content

IPS 1	Hubertus Lelieveld: Food safety regulations based on real science	17
IPS 2	Geoffrey Campbell-Platt: IUFoST role in Food Safety, Education and Food Security	18
IPS 3	Brian M McKenna: The future of food processing research	19
IPS 4	Dumitru Tucu: Foodstuff – Nourishment, Energy, Information, Life	20
IPS 5	Susanne Braun: Trafoon: improving knowledge transfer in traditional food sector	21
IPS 6	Johannes Pucher: Freshwater aquaculture in Central and Eastern Europe: Challenges and Potentials	22
<hr/>		
BTN 1	Helena McMahon, J. Lockyer, C. Halbert, B. O’ Dwyer, P. Coughlan, J. Knol, B. McKenna: Facilitating innovation, knowledge and technology transfer with traditional food producing enterprises	23
BTN 2	Laurentiu M. Palade, D. Duta, C. Popescu, C. Croitoru, M. E. Popa: Differentiation of three grape varieties by means of sensory analysis and characterization of the volatile compounds profile of their musts	24
BTN 3	Marijana Blazic, C. A. Zalazar, S. Bernal, Perotti M. C., Vénica C.: Lactose-reduced yogurt with additions	25
BTN 4	Flavia Dumitrescu, M. E. Popa, A. Dobre, M. Cucu, N. Belc: Determination of antioxidant capacity and health benefits of different types of tea: a review	26
BTN 5	Camelia Iurciuc (Tincu), A. Savin, Marcel Popa, P. Martin: Immobilized brewers yeast in ionically cross-linked gellan particles: preparation, characterization and applications	27
BTN 6	Carmen Violeta Popescu, Manea S., M. Fotescu, M. Ciolea, C. Popescu: Clening validation - compulsory measure required for quality and safety of hofigal dietary supplements	28
BTN 7	Cristina Maria Canja, A. Mazarel, M. I. Lupu, V. Padureanu, C. L. Badarau: The Effect of the Addition of Dietary Fiber in White Bean Over the Technological and Sensory Qualities of White Bread	29
BTN 8	Radu Roxana Cliniciu, V. Onofrei, T. Robu, M. C. Druțu: Considerations on the presence of species of the genus artemisia in moldova and opportunities for their use	30
BTN 9	Vasilica Onofrei, C. A. Druțu, R. Al. Cliniciu-Radu, T. Robu: OcimumbasilicumL. - presence, influence and evolution in human concernsever	30
BTN 10	Ovidiu Tita, M. Tita: Influence of technological factors on the quality of red wine sat the maceration-fermentation process	31
BTN 11	Mihaela Tita, E. R. Tufeanu, O. Tita: The use of instructive-educational methods for teaching the chapter"Determination of milk quality"	32
BTN 12	Mihaela Tita, E. R. Tufeanu, O. Tita: Research on obtaining yogurt with carrot	33
BTN 13	Carmen Liliana Badarau, M. C. Canja, F. Damșa, A. Margean: Effects of Several Purple Potato Paste Additions on Bread Quality	34
BTN 14	Sandra Zavadlav, I. Simić, M. Blažić, N. Mustapić: Differences in the Amount of Cholesterol and Total Carotenoids as a Quality Parameter of Table Eggs in Industrialand Domestic Cultivation Method	35
BTN 15	Andrey Bratsikhin, K. Kostenko, M. Shpak: Recombination of dry whey by cavitation disintegration	36
BTN 16	A. Belščak-Cvitanović, S. Lević, V. Đorđević, A. Vojvodić, K. Trifković, D.	37

	Komes, B. Bugarski, Viktor Nedović: Green teapolyphenols-mediated cross-linking of water soluble cellulose derivatives for encapsulation of proteins, methylxanthines and colourants in hydrogel microstructures	
BTN 17	Andreea Cozea, V. Tamas, C. Nica, S. Alexandru A. Marculescu: Plant enzymes used in the dietary supplement industry	38
BTN 18	Andreea Cozea, R. Gruia, M. Neagu: Applications of popular medicine in the actual context of scientific knowledge and health care	39
BTN 19	Oana Cioanca, M. Hancianu, L. Hritcu: Effects of inhaled Foeniculum vulgare volatile oil in amyloid beta (1-42)-induced anxiety and depression in laboratory rats	40
<hr/>		
ETN 1	Daniela Hanganu, I. Bedecan, I. Marcus, D. Benedec, B. Sevastre: Effect protective of Rosmarinus officinalis L. extract against CCl4 - induced hepatitis in mice	41
ETN 2	Nina Ciocarlan, V. Ghendov: Ethnobotanical and ecological studies of wild edible plants from bugeac steppe, Republic of Moldova	42
ETN 3	Veaceslav Ghendov, N. Ciocarlan, T. Izverscaia: Medicinal Flora and Conservation Issues of Plant Resources of “Țâpova” Reservation in Republic of Moldova	43
ETN 4	Lilia Chisnicean: Introducing and promoting condimentar-aromatic species Verbena triphylla L'Her. in the climatic conditions of Republic of Moldova	44
ETN 5	Madalina Tudorache (Sandulescu), A. Gheorghe, P. Barzan, V.I. Parvulescu: Biocatalytic conversion of α-pinene into value-added products	45
ETN 6	Anca Daniela Raiciu, I. Burghiu-Hobeanu, St. Manea: Natural Remedies and Gemmoderivates used in Dyslipidemia Andfatty Liver	47
ETN 7	Luminita Alexandru: A successful project for learning proper nutrition at an early age	48
ETN 8	Cristina Cimpean, C. Hoțiu: The role of nutrition in phytotherapy of menorrhagia	49
ETN 9	Agota Abran: What Is Good Food?	50
ETN 10	Cristina Luntraru, V. Tamas, St. Manea, M. Neagu, C. Nica: Practical Application of the Phytotherapeutic Potential of some Indigenous Fruits in Dietary Supplements Able to Ameliorate Specific Intestinal Affections	51
ETN 11	Cristina Nica, A. Suciu, V. Staicu, V. Tamas: Smallflower Hairy Willowherb (Epilobium parviflorum) known in folk medicine and resumed in modern studies for beneficial effects in prostate diseases	52
ETN 12	Alexandru Suciu, V. Tamas, A. Mărculescu: A study on the content of phytotherapeutic Compounds from indigenous Urtica dioica root that may have a Beneficial effect in treating benign prostatic hyperplazia	53
ETN 13	Daniela Ileana Vasile: Case Study: The favorable evolution of a Upper Respiratory Tract Infections treated with apitherapy and phytotherapy	54
<hr/>		
FCT 1	Simona Gavrilas, M. D. Stănescu: Enzymatic treatments used to improve polyphenol stability and content in fruit juices	55
FCT 2	Mihaela Badea, L. Floroian, P. Restani, A. Vasilescu, C.S.A. Cobzac, M. Moga: New Impedimetric Sensor for Ochratoxin Detection	56
FCT 3	G. Badalyan, Karina Grigoryan, M. Sargsyan: Antibacterial activity of Geotrichum candidum metabolites against pathogenic bacteria	57
FCT 4	Gabriel Mustatea, M. Negoitș, M. E. Popa: Research Regarding the Influence of Flour Extraction Degree on Acrylamide Formation in Biscuits	58
FCT 5	Daniela Benedec, L. Vlase, B. Sevastre, N. Fit, A. C. Mot, R. Silaghi-Dumitrescu, G. Damian, N. K. Olah, D. Hanganu: Screening of phenolic	59

	compounds, antioxidant and antimicrobial potential of Romanian origanum vulgare	
FCT 6	Bohuslav Cermak, M. Podsedníček, T. Paradovský, M. Šoch, L. Zábranský, M. Ingvortová, K. Pejchová, D. Mnerie, D.Tucu, D. Jirotková: The effect of chosen food oils to supplementation of last fattening pig prerioid on fatty acids structure in pig muscle fat and the consumption preference	60
FCT 7	Jelka Pleadin, D. Kovačević, Ana Vulić, T. Barbir, Mladenka Malenica Staver, Nada Vahčić: Fat content and fatty acid composition of traditional dry-fermented sausages coming from Croatian households	61
FCT 8	Jelka Pleadin, D. Kovačević, A. Vulić: Investigation into the nitrate and nitrite content in Croatian industrial meat products	62
FCT 9	Jelka Pleadin, D. Kovačević, N. Kudumija: The impact of ripening length and casing damaging on mycotoxin contamination of dry-fermented sausages	63
FCT 10	Gheorghe Goran, L. Tudoreanu, Rotaru E., V. Crivineanu: Comparative study of the mineral composition of beef steak and pork chops depending on the thermal preparation method	64
FCT 11	Gheorghe Goran, L. Tudoreanu, Rotaru E., V. Crivineanu: Comparative study of the mineral composition of lamb liver and kidney depending on the thermal preparation method	65
FCT 12	Martin Polovka, B. Tobolková, E. Belajová, Ján Durec: Effect of modified atmosphere on selected qualitative aspects of commercial fruit juices	66
FCT 13	Zuzana Ciesarova, K. Kukurová, J. Sádecká, Ján Durec: Sensory profile of fruit and vegetable juices – attributes related to shelf-life	67
FCT 14	Vasilica Savu, A. Şapcaliu, C. Mateescu, I. Radoi: The impact of contamination with Nosema ssp. spores on honey obtained by Apis mellifera carpathica	68
FCT 15	Natalita Ionescu (Bordei), M. Popescu, V. Tamas: Vegetable Oils And Oily Extracts Characterisation With Performant Techniques	69
FCT 16	Ioan C-tin Enache, R. Gruia: Understanding the restaurants customers food choices and business implications	70
FCT 17	Solvita Kampuse, L. Ozola, E. Straumīte, R. Galoburda: Quality parameters of wheat bread enriched with pumpkin (Cucurbita moschata Duchesne ex Poiret) by-products	71
FCT 18	Cristina Cimpean, C. Hoţiu: Evaluation of the informational quality of food by sensitive crystallization	72
FCT 19	Camelia Papuc, I. Chera, C. Predescu, V. Nicorescu, I. Gâjâilă, Ghe. V. Goran: The influence of cookware on the concentration of trace metals and lipid peroxidation in pork muscle	73
FCT 20	Irina Smeu, D. Martinet, Christoph Ellert, M. Beyrer: Cold atmospheric plasma (CAP) treatment as an inactivation method of different spores: Inactivation kinetics and food application	74
FCT 21	M. Sedaghati, H. Ezzatpanah, M. Mashhadi Akbar Boojari, M. Tajabadi Ebrahimi: Plasmin digest of αs-casein as a sources of antibacterial peptides	75
FCT 22	Gheorghe Puchianu, Dogaru I. A., Mărculescu A.: Research on detection of PAHs in samples of meat and smoked meat products, the values obtained, their presence and significance on human health	76
FCT 23	Gheorghe Puchianu, Pădureanu V., Enache D. V., Necula V.: Research on microbiological quality and physico - chemical Azuga spring water and exploitation of results obtained by identifying potential health benefits to consumers	77
FCT 24	Sonia Spandole, L. M. Berca, M. Adascălului, O. Niculae, S. Cristea, G. Mihăescu, D. Cimponeriu: Misidentification of Torque teno virus in meat food products from Romania using different sets of primers	78

ENG 1	Dumitru Mnerie, G. V. Mnerie, D. Tucu, Bohuslav Čermák: Some Considerations on the Milk's Behavior in the Lyophilization Process	79
ENG 2	A.-M. Nuñez Vega, S. Arendt, , W. Speckle, W. Hofacker: Thermal Load As A Characteristic Value For Quality Changes Of Air Dried Food	80
ENG 3	S. Arendt, , W. Speckle, W. Hofacker: Quality analysis of fresh and dried tomatoes	81
ENG 4	Jan Thomas Rosnes, L. Shinde, M. Sivertsvik, G. Tishchenko, , M.B. Coltelli, P. Cinelli, A. Lazzeri, P. Morganti: Antimicrobial Effect of chitin nano-fibrils in innovative formulations for food packaging materials	82
ENG 5	Dumitru Tucu, A. Iancu, C. Crisan: Optimizing of Manufacturing Process of Pasta from Rice Flour	83
ENG 6	Laurentiu Moldovan, Pantea G.: Development of innovative biodegradable packaging system to improve shelf life, quality and safety of fresh products	84
ENG 7	Elena Parparita, C. N. Yilmaz, O. Yilmaz, G. M. Pricope, C. Vasile: Poly(vinyl alcohol)/chitosan nanocomposites for food packaging applications	85
ENG 8	Elena Stoleru, B. S. Munteanu, R. N. Darie-Niț ,ăG. M. Pricope, Emil G. Ioanid, C. Vasile, A.C. Mitelut, M. E. Popa, E. E. Tanase, A. L. Mihai, M. C. Draghici: Food Packaging Material Based On Chitosan / Poly (Lactic Acid)	86
ENG 9	Cornelia Vasile, B.S. Munteanu, M. Brebu, E. Stoleru, R. N. Darie-Nita, A.C. Mitelut, M. E. Popa, E. E. Tanase, A. L. Mihai, M. C. Draghici, J. T. Rosnes, M. Sivertsvik, T. Lovdal, B.T. Rotabakk: Chitosan/natural oils as components in innovative formulations for food packaging	87
ENG 10	Gheorghe Voicu, E. M. Stefan, G. A. Constantin, P. Voicu, A. Lupu: Evaluation of Resistance Characteristics of some Biscuits Assortment using Cone Pentrometer	88
ENG 11	Predrag Dasic, Marina Karić: The selection of regression models kinetics of drying apples "red delicious" for different temperature drying	90
ENG 12	Vesna Marinković, S. Spaić, V. Milanko, B.Škrbić: Food or fuel: A review	91
ENG 13	Marko Malićanin, D. Lončarević, Vladislav Rac, V. Rakić: The morphology and anatomy of different varieties of red grapes seeds; content and physico-chemical characteristics of their oils obtained by cold pressing	92
ENG 14	Dana Jirotkova, M. Šoch, Naděžda Kernerová, L. Záborský, P. Tejml, K. Volfová, K. Hyšplerová: Electrochemically activated disinfection solutions in agriculture	93
ENG 15	Abdymanap A. Ospanov, N.Zh. Muslimov, A.K. Timurbekova, G.B. Dzhumabekova: Method For Manufacturing Of Extruded Poly-Cereal Products Of High Degree Of Preparation	94
ENG 16	Valerii Sukmanov, Petrova Y., Gaceu L., Birca A., Zavialov V., Popovici C., Lagovskiy I.: Influence of Parameters of Subcritical Water Extraction over Yield of Target Components from Grape Pomace	95
ENG 17	Valerii Sukmanov, Petrova Y. , Birca A., Gaceu L., Zavialov V., Golubev A., Lagovskiy I.: Preparation of ethyl alcohol from grape pomace extracted by subcritical water	96
ENG 18	A.T.Bezysov, H.E. Dubova, N.V. Rogova: New Aspects in the Technology of Aromatic Components Formation	97
ENG 19	A. Stratan, V. Moroz, A. Ignat, E. Lucasenco: Development of the Food Sector in the Republic of Moldova	98
ENG 20	Stefan Stefanov, N. Arabadzhieva W. Hadzhiiski: Determination of the Opening Force of Cardboard Boxes by Specially Designed Experimental Device	99
ENG 21	Nikola Simunik, N. Mustapić, A. Fudurić: Rapid prototyping technology in personalized chocolate products	100

ENG 22	Mihaela Botis: Purification of the waste water from milk industry	101
ENG 23	Romulus Gruia, Alexandru T. Bogdan, E. Tuluca, G. Florea Tobă: Food Biodiversity And Action Directions In Health Generating Gastronomy Research	102
ENG 24	Vasile Padureanu, L. Costiuc, M. I. Lupu, I. Pantea, G. Paraschiv: Researches Regarding the Modeling of Heat Transfer During Wine-Making Fermentation	103
ENG 25	Aliona-Mihaela Sava: The Richness of Specific Populations of the Pure Beech Forests Mixed with Conifers from the Ciucas Massif	103
ENG 26	Alexe Nicolae Ormenisan, S. Popescu, C. Csatos: Mathematical model for analysis the influence of virtual point position on the stability and dynamics of plowing units	104
ENG 27	Alexe Nicolae Ormenisan: Influence factors on the temperature variation of raw materials during the pressing oil process	104
ENG 28	Gheorghe Bratucu, A. Marin, D. D. Păunescu: Control drying process fruits and vegetables using solar energy	105
ENG 29	Mirabela Ioana Lupu, V. Pădureanu, C. M. Canja, I. Pantea: The effect of moisture content on grinding process of wheat and maize single kernel	106
ENG 30	Badarau C. L. Damsa F., Nistor A.: Several Effects of some Electrotherapy Treatments of PVX and PVY Infected Potato Plantlets cv. Roclas	107
ENG 31	Florentina Damsa, A. Woinaroschy, Ghe. Olteanu, C. L. Bădărău, A. Mărculescu: Total monomeric anthocyanin and total Flavonoid content of processed purple potato	108
ENG 32	Daniel Calin Ola, L. Gaceu, H.-J. Gusovius, J. Budde: Infrared Thermovision Method for Assesment of Ripeness for Hemp (Cannabis Sativa L.) Fiber Seeds	109
ENG 33	Dan Dorian Paunescu, C. C. Păunescu, Gh. Brătucu: Analysis of the Distribution Variation of the Decontaminating Uv-C Doses on the Berries' Surface	110
ENG 34	Florin Nechita: Brand communication strategy: the finest ingredient of the Romanian beer	110
ENG 35	Laura Manea, Label of organic products - means of promoting. European and national regulatory framework	111
<hr/>		
NUT 1	Adriana Birca, L. Gaceu, D. Mnerie, I. Petrova, M. Shamtsyan, V. Dororgan, I. Iatco: Consumer Perceptions of Nutrition and Health Claims in The Republic of Moldova	112
NUT 2	Dumitru Mnerie, Z. Gârban, M. Shamtsyan, L. Gaceu, Y. Petrova, A. Bîrcă: Study About the Xenobiotics in Food Labeling Applied in the Countries from the Black Sea region	113
<hr/>		
POS 1	Livia Apostol, M. E. Popa, N. Belc, L. Gaceu: Helianthus tuberosus L. flour A potential source of bioactive compounds in bakery product	114
POS 2	Nicolae Georgescu , L. Apostol, I. Vatuiu, L. Gaceu: Egg surface decontamination by using high voltage pulsed, cold atmospheric plasma jets	115
POS 3	Amalia Carmen Mitelut, E. E. Tănase, M. E. Popa, V. I. Popa: Chitosan as a Biopolymer for Food Packaging Applications - A Review	117
POS 4	Amalia Carmen Mitelut, A. L. Mihai, E. E. Tănase, M. E. Popa, M. Drăghici, C. P. Cornea, M. E. Popa, M. Draghici, M. A. Brebu, C. Vasile, E. Stoleru, A. Irimia: Assessment of the Antifungal Activity of Essential Oils for New Food Packaging Materials Design	118
POS 5	Galyna Khomych, V. Ishchenko: The impact of recycling process of wild	119

	berries on the content of phenolic compounds	
POS 6	Galyna Khomych, Y. Levchenko, A. Gorobets: The use of chaenomeles in the production of foodstuffs	120
POS 7	Natalia Dibrivska, I. Kibalnyk: Influence of fine powders of viburnum and sea buckthorn on structural and mechanical properties of sponge cakes	121
POS 8	Yaroslav Bychkov, V. Oberemok, T. Dmitryuk: Use of microwave-vacuum spray drying in food technology	122
POS 9	Oleksandr Cherevko, V. Skrypnik, N. Molchanova: Using physical and electrical methods in conductive meat frying	123
POS 10	Oana Maria Stanciu, R. Banc, A. Cozma, L. Filip, D. Miere, J. Mañes, F. Loghin: Occurrence of Fusarium mycotoxins in cereals in Europe – A review	124
POS 11	Inna Tiurikova, M. Peresichnyi: Prospects of using walnut in technologies of drinks	125
POS 12	Camelia Papuc, L. Tudoreanu, C. Predescu, V. Nicorescu, C. Petcu: The effect of hawthorn (<i>Crataegus monogyna</i>) polyphenols on refrigerated minced beef	126
POS 13	Andreea Stan, M. E. Popa: Pretreatment and freezing storage effect on antioxidant capacity of sour cherries and correlation with color changes	127
POS 14	Cecilia Georgescu, I. Crăciun, M. Mironescu, F. G. Gligor: Chemical composition and antimicrobial activity of flavonoid constituents of the flowers of <i>Rhododendron kotschy</i> Smik	128
POS 15	Elisabeta Elena Tanase, M. E. Popa, O. Popa, M. Rapa: Food Packaging Materials: Current Trends and Future Opportunities	129
POS 16	Daniela Hanganu, N. K. Olah, R. F. Câmpean, F. R. Furtuna, O. Raita, A. Mărculescu, D. Benedec: Polyphenols evaluation of some <i>Rosmarinus officinalis</i> L. extracts with potential use in food industry	130
POS 17	Daniela Hanganu, D. Benedec, S. Socaci, C. C. Toma, C. Morgovan, N. K. Olah: GC-MS analysis of some <i>Rosmarinus officinalis</i> L. extracts used as food supplements	131
POS 18	Mirabela Lupu, V. Pădureanu, I. Pantea, C.M.Canja: The Influence of Wheat Properties on the Grinding Process: A Review	132
POS 19	Carmen Liliana Bădărău, F. Damșa, Ghe. Olteanu, S. Chiru: Behavior of Several Potato (<i>Solanum Tuberosum</i> L.) Varieties with different Starch Content to Potato Tuber Necrotic Ringspot Disease	133
POS 20	Valentin Ionescu, F. Manolache, Cr. Todasca: Nmr Quantification of the Major Components of the Romanian Basil Essential Oils	134
POS 21	Ioana Roman, C-tin Puică: Action of Galium Verum Extract on the Hypothalamic - Pituitary – Adrenal Axis Morphology under Anakinetic Stress Conditions, in Rats	135
POS 22	Cornea Calina Petruta, O. A. Siciuia, C. Voaides, M. Zamfir: Biosurfactant producing lactobacillus spp. Strains isolated from Romanian traditional food products	136
POS 23	Daniela Sabina Vatuiu, M. E. Popa: Impact of LAB against Staphylococcus aureus in dairy products	137
POS 24	Adriana Laura Mihai, M. E. Popa: Comparative In Vitro Study of the Chitosan Application Method Effect on Aspergillus Brasiliensis Growth	138
POS 25	Creola Brezeanu, T. Robu, P. M. Brezeanu, S. Ambarus, A. Dobrescu: Genetic diversity of jerusalem artichoke (<i>helianthus tuberosus</i>) and use of genetic resources in breeding for food and health security	139
POS 26	Petre Marian Brezeanu, C. Brezeanu, T. Robu, S. Ambarus, T. Stan: Investigations on antioxidant capacity and potential use of hot pepper fruit <i>Capsicum Annuum</i> l	140
POS 27	Varvara Lazarevic, F. Maletić: Supermarket Trade Mark as Truth or	141

	Delusion	
POS 28	Oksana Lugovska: Aromatic emulsions based starch and gumarabic in food production	142
POS 29	Dmitry Kulev: Modeling of Processes for Food Shelf Life Determination	143
POS 30	Codruta Cobzac, M. Badea: Food synthetic colorants determination from roe fish by HPTLC	145
POS 31	Mihaela Tociu, M. C. Todasca, V. Artem, M. Mihalache, N. A. Chira, F. Manolache, M. D. Stanescu: Compositional Changes in Grape Seed Oils from Traditional and local Romanian Red Varieties	146
POS 32	Marcin Kidon, J. Grabowska, D. Walkowiak-Tomczak, E. Radziejewska-Kubzdela, R. Biegańska-Marecik, K. Młynarczyk: A comparison of bioactive compounds in drying purple-fleshed apples	147
POS 33	Georgiana-Aurora Ștefănoiu, E. E. Tănase, A. C. Miteluț, M. E. Popa: The effects of Radiofrequency Treatment on Microorganisms Involved in Food Spoilage	148
POS 34	Florentina Damsa, A. Woinaroschy, Ghe. Olteanu, R. Gruia: Influence of ultrasound frequency on anthocyanin pigments extraction from purple potato tuber	149
POS 35	Elisabeta Irina Geana, R. Popescu, D. Costinel, O. R. Dinca, I. Stefanescu, R. E. Ionete, C. Bala: Verifying the red wines adulteration throught isotopic and chromatographyc investigations coupled with multivariate statistic interpretation of the data	150
POS 36	Angela Marculescu, M. Badea: Medicinal and Aromatic Herbs and their Implications in Food Supplements and Functional Foods	151
POS 37	Violeta Niculescu, D. Stegarus, R. Ionete, R. Zgavarogea: An overview on the analysis methods for Tebuconazole residue in plant matrices	152
POS 38	Boris Kolesnikov, O. B. Oprea, L. Gaceu, V. Konusova, M. Shamtsyan: Immunomodulating Polysaccharides from Oyster Mushroom Fruit Bodies and Submerged Mycelium	153
POS 39	Boris Kolesnikov, I. Larionov, I. Dubinina, M. Shamtsyan: Hydrophobins And Milk-Clotting Enzymes From Submerge Fungal Culture Coprinus Lagopides	154
POS 40	Oana Romina Dinca, D. Costinel, R. Popescu, M. Ghe. Miricioiu, I. Stefanescu, G. L. Radu, R. E. Ionete: Progress in discrimination of honey botanical origin by $\delta^{13}C$ and $\delta^{15}N$ stable isotopes	156
POS 41	Angela Marculescu, Stoian C. E.: Queen Mary's flowers and floral therapy	157
POS 42	Felicia G. Gligor, C. Dobrea, C. Georgescu, M. Totan, A. L. Vonica Gligor: Challenges in developing new formulations for food supplements containing vegetal extracts	158
POS 43	Adriana Aurelia Chis, B. Szaniszlo, S. Simionescu, A. Moisei, F. G. Gligor: Gastrorezistent coating for food supplements in accordance to european legislation	159
POS 44	Yasin Orhan, O. Ozden: Gelatine Production Obtained From Aquaculture Fish Waste And The Quality Of Gelatine	160
POS 45	Nuray Erkan, B. Tepik: The Effect of Oxygen Absorber on the Shelf Life and Quality of Traditional Salted Dried Fish "Çiroz"	161
POS 46	Mioara Negoita, A. Adascalului, G. Spadaro, G. Mustatea, E. Iorga, M. Catana, A. Stan: Investigation regarding influence of different food ingredients addition on the acrylamide level in bread	162
POS 47	Ileana Pantea, V. Padureanu, I. Brezean: Drinking water and its effects on health	163
POS 48	Ileana Pantea, V. Padureanu, I. Brezean: Iodized salt between myth and reality	164

POS 49	Tamara Nosenko, Valeriy Mank Anastasiya Lebid: The content of phenolic substances and sunflower protein functionality	165
POS 50	Alexandru Filipovici, D. Tucu, M. Adam: Potential of Using Biomass Resources on Pyrolysis Systems to Obtain Heating in Rural Communities from Romania	166
POS 51	Nich Oseiko, I. Levchuk, T. Romanovska, V. Olishevsky, A. Marinin: Ecologic and Economic Efficiency Comparison of Lanolin Extraction Methods	167
POS 52	Nich Oseiko, I. Levchuk, T. Romanovska, V. Olishevsky, A. Marinin: The Properties Of Wool Grease	168
POS 53	Marius Popescu: Touristic Resources with Gastronomic Profile from Southern Dobrogea Region	169
POS 54	Loredana Luca, Gruia R.: Consideration regarding food texture analysis and new contribution to the methodological bases on food microstructure analysis	170
POS 55	Viktor Goots, O. Koval, O. Gubenia: Movement load modeling in technological equipment	171
POS 56	Viktor Goots, O. Koval, O. Gubenia: Competition and technological level of technological process	172
POS 57	Gheorghe Puchianu, V. Necula, D. V. Enache: Research on the microbiological quality of drinking water used in some establishments slaughtering and processing of foods of animal origin from Brasov County	173
POS 58	Jan Thomas Rosnes, L. Shinde, Vasile, M. A. Brebu: Antimicrobial Resistance of Staphylococcus aureus and E. coli to Essential Oils	174
POS 59	Gitman Silvia Stefania, D. P. Iga: ¹H and ¹³C Nmr Characteristics of some Natural Constituents of Food: Sphingosine, Ceramide, Galactocerebroside, Sphingomyelin, and their Lysoderivatives	175
POS 60	Dumitru Iga: Using of some food constituents as precursors for the synthesis of antigenic, antiallergic and antiinflammatory compounds of fatty glycosides class	176
POS 61	Mihaela Magdalena Mitache, C. Curutiu, C. M. Chifiriuc, I. Gheorghe, L. Mateescu, A. Neagu, L. M. Ditu, A. M. Holban, V. Lazar: Phenotypic and genotypic characterisation of some factors involved in the virulence and survival of bacteria isolated from food and food processing surfaces	177
POS 62	Mihaela Magdalena Mitache, M. Pruna, P. Covic, C. Spirchez, L. Gaceu, C. Curutiu, C. M. Chifiriuc: Influence of Microwave Sterilization on the Lignocellulosic Biowaste Streams Conversion Process Using Pleurotus Sp.	178
POS 63	Mark Shamtsyan, T. Dmitrieva, B. Kolesnikov, N. Denisova: Cerrena unicolor mushroom – a novel producer of milk-clotting enzyme	179
POS 64	Mark Shamtsyan, B. Kolesnikov, L. Gaceu, O. B. Oprea, A. Birca, I. Iatco, D. Mnerie, D. Tucu, G. V. Mnerie, O. Tita, C. Georgescu, M. Mironescu, S. Stefanov, S. Damianova: Study of Awareness of Food Labeling among Consumers in North-West Russia	180
POS 65	Gaceu Liviu, V. Sukmanov, M. Shamtsyan, A. Birca, B. Kolesnikov, D. Mnerie, D. Tucu: Study about perception of Food Labeling among Consumers in Romania	181
POS 66	Gj. Nakov, V. Stamatovska, Lj. Necinova, N. Ivanova, S. Damyanova, M. Petrova, I. Kostova: Opinion surveys of consumers for manner of labeling the food productin the Republic of Macedonia	182
POS 67	Valerii Sukmanov, Kiiko V.: Innovative Approaches to Solving the Problem of Increasing the Biological Value of Drinking Milk	183
POS 68	Mihaela Rotaru, R. Savescu: The SEUROP Pig Carcasses Grading System – A value-based payment framework	184
POS 69	Ioan Eugen Popa, D. V. Enache, Ghe. Puchianu, M. Babii: Study regarding the	185

	efficiency of the gf 3xo-101 equipment, in ozone decontamination of turkey carcasses	
POS 70	Necula Valentin, Ghe. Puchianu, D. V. Enache: Criteria for Safety and Control the Meat Game Bird Hunting Funds of Brasov Country	186
POS 71	Valentin Necula, Puchianu Ghe., Enache D. V., Macri A.: The Impact of Ultraviolet Radiation on Fungal Load of Certain Spices, used in Meat Industry	186
POS 72	Anca Mariana Toma: Using the Method Mass Service Maintenance in the Tourism Industry to avoid the Riskof bankruptcy a Business Project	187
POS 73	Viorica Carabela, St. Manea , V. Tamas, N. Ionescu (Bordei), G. Alexandru: New Cosmetics Based on Vegetable Active Compounds for Skin Care	188
POS 74	Mihaela Cristina Draghici, Tănase E. E., Popa M. E., Miteluț A. C.: Research regarding consumer behavior towards organic food products in Romania	189
POS 75	Fulvia Manolache, V. Ionescu, C. Todasca, D. I. Marin: Fast Method for Quantification of Fatty Acids from Complex Food Mixtures Based on Nmr	190
POS 76	Róża Biegańska-Marecik, E. Radziejewska-Kubzdela, M. Kidoń, D. Walkowiak-Tomczak: The content of phenolic compounds and glucosinolates in novel beverages with the addition of red curly kale and blackcurrant juice	191
POS 77	Karolina Młynarczyk, D. Walkowiak–Tomczak, M. Kidoń, R. Biegańska-Marecik, E. Radziejewska-Kubzdela: Evaluation of colour and anthocyanins content in commercial elderberry juices	192
POS 78	Cornel Naidin, R. Gruia, E. Țuluca, L. Gaceu: Highlighting Certain Bioactive Compounds of Mono Numerical type from Walnut Resources in the Carpathian Areal	193
POS 79	Dajana Poleksik, M. Demin, V. Rac, S. Raičević, B. Filipčev, V. Rakić: Functional Characteristics and Digestibility of Rusks made from Wheat Flour with the Addition of Millet (Panicum Miliaceum L.)	194
POS 80	Tudor A. Strutinsky, V.V. Fedash, V.N. Strokova: Anogenic Meals as Nutritional Algorithm Health. Basic Principles	195
POS 81	Dorota Walkowiak–Tomczak, M. Kidoń, K. Młynarczyk, R. Biegańska-Marecik, E. Radziejewska-Kubzdela: The effect of plant additives and spices on sensory and chemical properties of chokeberry sweetened juices and drinks	196
POS 82	TetyanaVoloshchenko, T. Nosenko: Estimation of biological value of low erucic and low glucosinolates rape seed proteins	197
POS 83	V. Zavyalov, V. Bodrov, T. Misyura, N. Popova, Yu. Zaporozhets, V. Dekanskiy: Mathematical and physical modeling of the efficiency of vibroextraction from plant raw materials and their wastes	198
POS 84	Vladimir Sorokopudov, N. I. Myachikova: Federal state budgetary scientific institutions of Moscow "All Selection and Technological Institute of Horticulture and Nursery" (FGBNU VSTISP)	199
POS 85	Veska G. Lasheva, D. A. Todorova, S. A. Kotlarova: Using The Active Packaging	199
POS 86	Tetiana Mostenska, O. Ralko: Directions of improving training programs for modern requirements of food enterprises	200
POS 87	Abdymanap A. Ospanov, N.Zh. Muslimov, A.K. Timurbekova, G.B. Dzhumabekova: About The New Production Technology of Bread and Bakery Products with the Long Period of Storage	201
POS 88	Abdymanap A. Ospanov, N.Zh. Muslimov, A.K. Timurbekova, G.B. Dzhumabekova: Effect of Humidity of Poly-Cereal Flour Mixture and Screw Rotation Rate on Efficiency of Extrusion Process	201
POS 89	Victor Zepca, M. Tarcea, A. Jucov, A. Zaporojan: Eating Unhealthy Food to	202

	Children from Rural Localities from the Republic of Moldova	
POS 90	Cosmin Spirchez, L. Gaceu: Considerations for Ecological Construction and Organization of Construction	203
POS 91	Garabadzhiu A.V., Pushkarev M.A., Kozlov G.V., Sataev M.I., Saipov A.A: Combination of enzymatic ethanolsis and urea fractionation for utilization of waste fish oil with concentrate of polyunsaturated fatty acid ethyl esters and biodiesel production	204
POS 92	Volodymyr Telychkun, Y. Telychkun, M. Desyk, O. Kravchenko: Decline of material and power resources in bread production	205
POS 93	R.V. Gryshchenko, A.V. Forsiuk, Y.I. Zasyadko, O.Y. Pylypenko: Experimental studies into the regularities of ice formation on vertical pipes	206
POS 94	Deinychenko G.V., Byelyayeva I.M.: Comparative Characteristics of Antioxidant Activity of Carotene-Containing Vegetable Supplements in Ice Cream	207
POS 95	Florentina Duica, D. P. Iga: Synthesis and Characterization of new Enzymatic Substrates for Quantification of Exoglycosidases involved in the Metabolism of Carbohydrate Constituents of Food	208