” INTERNATIONAL SCIENTIFIC SYMPOSIUM

“Young Researchers and Scientific Research in Life Sciences for Bachelor, Master and Ph.D. Students“

(Series - Food Engineering)”,

BOOK OF ABSTRACT

Editors
Nicoleta Gabriela Hadaruga, Adrian Riviş,
Corina Iuliana Megyesi

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PROGRAMME

INTERNATIONAL SCIENTIFIC SYMPOSIUM
"Young Researchers and Scientific Research in Life Sciences for Bachelor, Master and Ph.D. Students"

Section: Food Engineering

16-17 November 2023

INTERNATIONAL SCIENTIFIC SYMPOSIUM "Young Researchers and Scientific Research in Life Sciences for Bachelor, Master and Ph.D. Students"

16-17 November 2023, Timisoara

General Programme

Thursday, November 16, 2023

Aula Magna
University of Life Sciences "King Mihai I" from Timișoara,
Calea Aradului 119A, 300645, Romania

09^{30} – 10^{30}	Participant admission
10^{30} – 10^{40}	Welcoming words **Prof. univ. dr. Cosmin Alin Popescu** Rector - *University of Life Sciences "King Mihai I" from Timișoara*
10^{40} – 10^{50}	Symposium opening **Prof. univ. dr. Isidora Radulov** Vicerector - *University of Life Sciences "King Mihai I" from Timișoara*
10^{50} – 11^{30}	**Nikola Čobanović,** Sara Čalović, Nevena Grković, Slobodan Knežević, Marko Pajić Effects of coccidiosis on the welfare, growth performance, carcass and meat quality of broilers
11^{30} – 11^{45}	**Simona Maria Ilie**, Carlo Marius Dragomir, Delia Gabriela Dumbravă, Camelia Moldovan, Diana Nicoleta Raba Health benefit of ancient wheat-based bakery products compared to modern wheat based ones
11^{45} – 12^{00}	**Aisha Adan Jaldesa**, Afiqah Izzati Binti Sundusin, Diksha Mishra, Phoymany Somany Sustainability in small-scale and rural farming
12^{00} – 13^{30}	Lunch
13^{30} – 15^{00}	Presentation of scientific papers by section

15^{00} – 15^{30}	Coffee break
15^{30} – 18^{00}	Presentation of scientific papers by section
18^{00} – 19^{00}	Dinner

Friday, November 17, 2023

10^{00} – 12^{00} **Oportunități de finanțare a proiectelor prin Ministerul Mediului în cadrul Planului Național de Redresare și Reziliență**
Speakeri:
Ionuț Sorin BANCIU
Secretar de Stat, Ministerul Mediului, Apelor și Pădurilor
Alexandru AVRAM
Secretar general, Ministerul Mediului, Apelor și Pădurilor

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Plenary Lecture

10^{50} – 11^{15}	The link between organic and sustainability **Emanuel Popa** SC Pronat SRL Timisoara
11^{15} – 11^{30}	Effects of coccidiosis on the welfare, growth performance, carcass and meat quality of broilers **Nikola Čobanović,** Sara Čalović, Nevena Grković, Slobodan Knežević, Marko Pajić

$11^{30} – 11^{45}$ Health benefit of ancient wheat-based bakery products compared to modern wheat based ones
Simona Maria Ilie, Carlo Marius Dragomir, Delia Gabriela Dumbravă, Camelia Moldovan, Diana Nicoleta Raba

$11^{45} – 12^{00}$ Sustainability in small-scale and rural farming
Aisha Adan Jaldesa, Afiqah Izzati Binti Sundusin, Diksha Mishra, Phoymany Somany

$12^{00} – 13^{30}$ Lunch

$13^{30} – 13^{45}$ **OC_1**: A review on shelf-life extension of fresh fish with the use of black cumin oil (*Nigella sativa* L.) and antimicrobial and antibacterial activity of *Nigella sativa*
Andreea Neacșu-Nițu, Laura-Cătălina Giurea-Dumitra, Mihai-Romeo Dinică, Dimitrie-Vlad Neagu, Ștefania Mariana Raița

$13^{45} – 14^{00}$ **OC_2**: Correlative study regarding the anemic status in the hematuric patient
Maria Roșca, Alexandra Cristian, Mario Codreanu

$14^{00} – 14^{15}$ **OC_3**: Innovations in aquaponic systems for sustainable agriculture: a transnational review
Andra-Ioana Balaur, Alexandru Ioan Călin,

$14^{15} – 14^{30}$ **OC_4**: Phytoremediation of land polluted with non-recyclable plastic
Miruna-Magda Morariu, Eugen-Cătălin Zoican, **Andreea Cîrstea**, Maria-Alexandra Ferencz, Aryan Ahmadi-Khoie, Florica Morariu

$14^{30} – 14^{45}$	**OC$_5$**: Evaluation of the antibacterial effect of actinomycetes **F. A. Huiban**, Vasiliki Liaretidou, Sorina Popescu, Aurica Borozan
$14^{45} – 15^{00}$	**OC$_6$**: The opportunity to establish a local gastronomic point in Floresti commune, Cluj County **Mara Jurje**, Francesca Pop, Felix Arion
$15^{00} – 15^{30}$	**Coffee break**
$15^{30} – 15^{45}$	**OC$_7$**: A comparison of the agricultural sector in Romania and Turkey **Bilal Al Benni**, Veronica Sărățeanu
$15^{45} – 16^{00}$	**OC$_8$**: Developing the potential of microbial agents for sustainable plant disease control: insights from recent research **Sundusin Afiqah Izzati Binti**, Zhou Dai, Adrienn Szarvas
$16^{00} – 16^{15}$	**OC$_9$**: Evaluation of somaclonal variability in *Lycium Barbarum* using RAPD markers **Andreea Nistor**, Florin Huiban, Cerasela Petolescu
$16^{15} – 16^{30}$	**OC$_{10}$**: Sizing of a biogas plant in the teaching farm of ULST **Teodora Toader**, Larisa Toader, Dana-Iuliana Neață, Alexandra Schiller, Igori Balta, Marco di Stanislao, Teodor Vintilă
$16^{30} – 16^{45}$	**OC$_{11}$**: Preliminary study on the ecological status of riparian zones of running waters in a Central European urban area (Budapest, Hungary)

Sergei Iarovoi, Urwa Javaid, Orsolya Halmai, Török Liliana, Zsolt Török

$16^{45} – 17^{00}$ **OC$_{12}$**: Assessment of variability for fruit characteristics in five apple varieties from an ecological orchard
Maia Capotescu, S. Capotescu, Adriana Ciulca, Giancarla Velicevici, S. Ciulca

$17^{00} – 17^{15}$ **OC$_{13}$**: Tourism in Ghana, Sierra Leone and China
Martin Gbenda, Salifu Fallalu Rahman Joseph Bonney, Wang Luyao

$17^{15} – 17^{30}$ **OC$_{14}$**: Influence of the marinade and of the thermal treatment on the physical-chemical characteristics of deer meat
Gabriela Ciubotaru[*1], Anca Mihaly Cozmuta[1], Camelia Nicula[1], Leonard Mihaly Cozmuta[1], Malgorzata Korzeniowska[2] and Anca Peter[1],
[1]Technical University of Cluj Napoca, Faculty of Sciences, Victoriei 76, 430072 Baia Mare, Romania;
[2]Wroclaw University of Enviromental and life Sciences, Norwida 25 Wroclaw, Poland

$17^{30} – 17^{45}$ **OC$_{15}$**: The influence of heat treatment conditions on the water vapor barrier properties of polyvinyl alcohol-based films.
Iulia Benko[*1], Anca Mihaly Cozmuta[1], Camelia Nicula[1], Leonard Mihaly Cozmuta[1], Goran Drazic[2] and Anca Peter[1]
[1]Technical University of Cluj Napoca, Faculty of Sciences, Victoriei 76, 430072 Baia Mare, Romania
[2]National Institute of Chemistry, Hajdrihova 19 POBox 660 SI-1001 Ljubljana, Slovenia

$17^{45} – 18^{00}$ **OC$_{16}$**: Determination of Water-Soluble Vitamins from Food Supplements

Ivana Pantea[1*], Alexandru Pahomi[2], Daniela Dascălu[2]
[1]*University of Life Sciences "King Mihai I" from Timișoara, Calea Aradului 119A, 300645, Romania*
[2]*West University of Timișoara, Faculty of Chemistry, Biology, Geography, Department of Biology-Chemistry, J.H. Pestalozzi 16, 300115, Timișoara, Romania*

Series: Food Engineering

Posters

P1 Perspectives in meat processing
Dan Gîrjoabă, Călin Jianu, Ioan David, Dorin Otiman, Cristina Mitroi, Ducu Sandu Ștef, Alexandru Rinovetz, Teofil Nedelcu, Adrian Riviș, Gabriel Bujancă
Faculty of Food Engineering, University of Life Sciences "King Mihai I" from Timisoara Calea Aradului 119, Timișoara, 300645 Romania

P2 Dietary fibre and phytochemical characteristics of fruit and vegetable by-products and their recent applications as novel ingredients in food products
Dorin Otiman, Adrian Riviș, Ducu Sandu Ștef, Laura Rădulescu, Călin Jianu, Ioan David, Alexandru Rinovetz, Ariana Velciov, Corina Megyesi, Gabriel Bujancă
Faculty of Food Engineering, University of Life Sciences "King Mihai I" from Timisoara Calea Aradului 119, Timișoara, 300645 Romania

P3 Extrusion processing of raw food materials and by-products
Teofil Nedelcu, Laura Rădulescu, Corina Megyesi, Călin Jianu, Adrian Riviș, Alexandru Rinovetz, Ariana Velciov, Ducu Sandu Ștef, Ioan David, Gabriel Bujancă
Faculty of Food Engineering, University of Life Sciences "King Mihai I" from Timisoara Calea Aradului 119, Timișoara, 300645 Romania

P4 The influence of the valerian tincture addition on the functional butter production
Monica Moldovan, Anca Dumuța, Cristina Mihali, Zorica Voșgan, Lucia Mihălescu - *Technical University of Cluj Napoca, North University Center of Baia Mare, no.76 Victoriei Street, Romania*

P5 Food waste in the case of bakery products
Cristina-Alina Pintescu (Hurjui), Steluța Radu - *University of Life Sciences „Ion Ionescu de la Brad" Iași, Romania*

P6 Citrus waste and food waste reduction strategies
Iulian Andriesei Brândușa, Livia Bărbuță, Steluța Radu
University of Life Sciences „Ion Ionescu de la Brad" Iași, Romania

P7 Evaluation of the triterpenoid glycoside content of the horse chestnut (*Aesculus hippocastanum* L.) extracts and their cyclodextrin complexation behavior
Laurenţiu Răzvan Drăghici[1], Agnes Cupin[2], Anişoara Radosavlevici (Georgevici)[1], Mihaela Simescu[3], Florina Baluta[3], Camelia Moldovan[3], Delia Gabriela Dumbravă[3], Nicoleta Gabriela Hădărugă[1,3,*], Daniel Ioan Hădărugă[1,2]
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[3]Faculty of Food Engineering, University of Life Sciences "King Mihai I" from Timişoara, Calea Aradului 119, 300645 – Timişoara, Romania

P8 Evaluation of the similarity/dissimilarity of some autochthonous fruit extracts rich in anthocyanins and the main antioxidant compound classes by FTIR-PCA

Marinela Fiţoiu (Voin)[1], Claudia Izabela Oprinescu[1], Anamaria Pop[1], Adrian Kis[1,2], Mariana-Raluca Boţoagă[3], Gabriela-Ionela Gherghinoiu[4], Roxanda-Elena Simescu[4], Daniel Ioan Hădărugă[1,3], Nicoleta Gabriela Hădărugă[1,4,*]

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P9 Antioxidant and sensorial properties of flavored sesame oil

Daniela-Florina Socaci, Rebeca-Estera Bulvanescu, Razvan Rafan, Mariana-Atena Poiana, Liana-Maria Alda, Laura Radulescu, Diana Moigradean

Faculty of Food Engineering, University of Life Sciences "King Mihai I" from Timisoara Calea Aradului 119, Timişoara, 300645 Romania

P10 Obtaining and characterization of a new variety of buffalo brined cheese with mint

Beatrice Mihalescu, Zorica Vosgan, Lucia Mihalescu

Technical University of Cluj-Napoca, North Universitary Center of Baia Mare, Faculty of Sciences, Department of Chemistry and Biology, 76 Victoriei Street, 430122 Baia Mare, Romania

P11 Antioxidant activity and kinetics of raspberry (*Rubus idaeus* L.) extracts in the presence of β-cyclodextrin

Adrian Kis[1,2], Marinela Fiţoiu (Voin)[1], Claudia Izabela Oprinescu[1], Anamaria Pop[1], Lavinia-Alexandra Toporîşte[3], Cristina Liliana Mitroi[4], Nicoleta Gabriela Hădărugă[1,4,*], Daniel Ioan Hădărugă[1,3]

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P12 Characterization of some vegetable fillings for puff pastry

Ionuț Alexandru Gui, Bianca Moldovan, Delia-Gabriela Dumbrava, Viorica-Mirela Popa, Diana Nicoleta Raba, Corina-Dana Mișcă, Mitroi Cristina, Diana Moigrădean, Poiana Mariana Atena, Camelia Moldovan, *Faculty of Food Engineering, University of Life Sciences "King Mihai I" from Timisoara Calea Aradului 119, Timișoara, 300645 Romania*

P13 Effect of fortification with vegetable purees on sensory and physicochemical properties of wheat flour pasta

Flavia Pop, Zorica Voşgan, Alexia Finta, *Technical University of Cluj-Napoca, North University Center of Baia Mare, Chemistry and Biology Department, 76A Victoriei Str., 430122, Baia Mare, Romania,*

P14 Characterization of some appetizers obtained from scalded dough
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Faculty of Food Engineering, University of Life Sciences "King Mihai I" from Timisoara Calea Aradului 119, Timișoara, 300645 Romania

P15 Preliminary quality/price analysis for some green and black tea types
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Faculty of Food Engineering, University of Life Sciences "King Mihai I" from Timişoara, Calea Aradului 119A, 300645, Romania

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Cristina Mitroi, Corina Iuliana Megyesi, Ariana-Bianca Velciov, Adrian Riviș, Laura Rădulescu, Gabriel Bujancă, Alexandru Rinovetz, Camelia Moldovan, Delia Dumbravă
Faculty of Food Engineering, University of Life Sciences "King Mihai I" from Timișoara, Romania

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Sebastian Orbulescu[1], Andrei Serban[1], Camelia Moldovan[1], Nicoleta Gabriela Hadaruga[1], Diana Nicoleta Raba[2], Viorica Mirela Popa[1], Corina Dana Misca[1], Delia Gabriela Dumbrava[1]
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Diana Moigradean, Liana-Maria Alda, Camelia Moldovan, Daniela Stoin, Mariana-Atena Poiana
Faculty of Food Engineering, University of Life Sciences "King Mihai I" from Timisoara, Timisoara, Calea Aradului, nr. 119, Romania

P25 Exploiting the bioactive potential of sea buckthorn to obtain products with improved functionality

Anamaria Tobica, Diana Moigradean, Daniela Stoin, Camelia Moldovan, Mirela Popa, Delia Dumbrava, Nicoleta Hadaruga, Adrian Rivis, Mariana-Atena Poiana
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Sebastian Vesa[1], Diana Moigradean[1], Daniela Stoin[1], Camelia Moldovan[1], Mirela Popa[1], Delia Dumbrava[1], Diana Raba[2], Adrian Rivis[1], Mariana-Atena Poiana[1]
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P28 Quality assessment of bread produced from rice flour, tamarind flour and elderflower powder blends
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Bogdan Rădoi, Alexandru Rinovetz, Oana Prasacu, Corina Mișcă, Mihaela Cazacu, Florina Radu, Teodor Ioan Trașcă
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P33 Study on the nutritional value of traditional sausages compared to industrial sausages

Bogdan Rădoi, Alexandru Rinovetz, Ariana Roșca, Mirela Popa, Florina Radu Gabriel Hegheduș-Mîndru, Ileana Cocan, Teodor Ioan Trașcă
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P34 Obtaining and characterizing soy yogurt with the addition of avocado paste

Andreea Ghițulecu, Sebastian Stoica, Maria-Ionela Spafiu, Camelia-Elena Stoianovici, Georgeta-Sofia Popescu, Florina Radu
Faculty of Food Engineering, University of Life Sciences „King Mihai I" from Timisoara, Calea Aradului 119, Timisoara, 300645 Romania

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B. Vaipan[1,2], Mihaela-Gianina Fraiu[1,2], Oana-Alina Marcu [1,2], Ioana Teodora Iosivuț[1,2], B. Mario[1,2], A. Rinovetz[1,2], T.I. Trașcă[1,2], A.Riviș[1,2], Nicoleta Hădărugă[1,2], Corina Mișcă[1,2], Ariana Velciov[1,2], G. Hegheduș-Mîndru[1,2], Delia Dumbravă[1,2], P.B. Rădoi[1,2], Corina Megyesi[1,2], Laura Rădulescu[1,2]
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P36 Tomatoes - food as medicine

Denisa-Iuliana Mura[1], Ariana-Bianca Velciov[1], Maria-Ionela Spafiu[1], Camelia-Elena Stoianovici[1], Antoanela Cozma[2], Georgeta-Sofia Popescu[1*]

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Maria-Ionela Spafiu, Camelia-Elena Stoianovici, Denisa-Iuliana Mura, Nicoleta Scoarță, Andreea Ghițulescu, Daniela –Florentina Marcu, Ariana-Bianca Velciov, Florina Radu, Despina-Maria Bordean, Georgeta-Sofia Popescu

Department of Food Science, Faculty of Food Engineering, University of Life Sciences "King Mihai I" from Timisoara, 300645, Timisoara, Romania

P38 Phytobiochemical valorization of matcha powder used as an additive in homemade chocolate

Camelia-Elena Stoianovici, Maria-Ionela Spafiu, Nicoleta Scoarță, Andreea Ghițulescu, Denisa-Iuliana Mura, Mihaela-Maria Stanciugelu, Elisabeth Spataro, Florina Radu, Ariana-Bianca Velciov, Georgeta-Sofia Popescu

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P39 Sensory appreciation of some assortments of chicken liver pate
D. Crăcea, A. Riviș, N. Hădărugă, G. Hegheduș-Mîndru, D. Bordean, D. Dumbravă, C. Moldovan, M. Popa, C. Mișcă, L. Ştef, G. Bujancă, R. Boutiuc, D. Ştef
University of Life Sciences „King Mihai I" from Timisoara, Calea Aradului 119, Timisoara, 300645 Romania

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University of Life Sciences „Ion Ionescu de la Brad" Iași, Romania

P45 Fast and cheap evaluation of the adulteration of non-conventional seed oils by classical vegetable oils using FTIR-PCA technique

Anamaria Pop[1], Marinela Fiţoiu (Voin)[1], Irina-Georgiana Boţoagă[2], Corina Iuliana Megyesi[3], Ariana Bianca Velciov[3], Daniela Stoin[3], Nicoleta Gabriela Hădărugă[1,3,*], Daniel Ioan Hădărugă [1,2]

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Andra – Mara Achim[1], Timeea – Maria Borcilă – Ciarnău[1], Raul – Iosif Avram[1], Miruna Magda Morariu[2], Georgeta – Sofia Popescu[1], Corina – Iuliana Megyesi[1], Daniela Stoin[1], Laura Rădulescu[1], Iasmina – Mădălina Anghel[3], Nicoleta Hădărugă[1], Ariana – Bianca Velciov[1*]

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P47 Obtaining and characterizing an artisan assortment of keto cookies

Timeea – Maria Borcilă – Ciarnău, Andra – Mara Achim, Milan Ciusdic, Daniela Stoin, Corina – Iuliana Megyesi, Laura Rădulescu, Antoanela Cozma, Georgeta – Sofia Popescu, Alexandru Rinovetz, Adrian Riviș, Ariana – Bianca Velciov

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P48 lipids. Utility carriers. Short communication

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OC$_{14}$

Influence of the marinade and of the thermal treatment on the physical-chemical characteristics of deer meat

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The research aims to study the influence of the marinade composition and of the vacuum heat treatment (Sous Vide procedure) on the physical-chemical properties of six types of deer meat. Six meat samples represented by the back muscles from six red deer (samples 13, 14, 15, 16, 19 and 20), males, raised under controlled conditions, except for sample 20 which came from a wild deer, were analyzed. The meat samples were purchased from a deer farm in Olsztyn, northeastern Poland. Three types of marinades made up of ingredients with different properties have been prepared. Unmodified deer meat was analyzed as reference. The packets of marinated meat vacuumed and sealed were subjected to the Sous Vide technique (thermal treatment at 60 °C, for 4 hours). The characterization was performed both on crude and cooked marinated samples and consisted of colorimetric analysis by using the Minolta Chroma Meter CR-400 Colorimeter, textural analysis using Texture Analyzer Zwick / Roell model Z010, determination of hardness, elasticity, pH and mass loss. The results showed that the M3

marinade containing the ingredients: pickled red beet juice, anise, cinnamon, cloves, ground ginger, junibahar, honey, colored pepper, chilli powder and salt, showed the more efficient imporvement of the deer meat, best retained its elasticity and induced the lowest change of the deer meat natural color, strogly vascularized by the cherry red. In conclusion, the M3 marinade is a promising solution for preparing deer meat in order to obtain an attractive culinary preparation.

OC$_{15}$

The influence of heat treatment conditions on the water vapor barrier properties of polyvinyl alcohol-based films.

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The purpose of this study was to develop polyvinyl alcohol (PVA)-based formulations with low water vapor permeability, comparable to that of polyethylene (PE). A total of 17 samples were prepared using polyvinyl alcohol modified with beeswax, citric acid and surfactant in different conditions of heat treatment time and temperature. The characterization of the obtained films consisted in determining their morphology through optical and electron microscopy, elemental analysis, water vapor permeability (WVP) and biodegradability. The film with the lowest mass increase (15.5%) and the lowest WVP value (0.673 x 10^-10 g/s m Pa) was sample B9 containing citric acid 3 %(wt), being heat-treated at 125°C for 30 minutes and it was introduced into the oven already brought to the heat treatment temperature. The role of citric acid and surfactant was to combine with the hydroxyl groups in PVA, resulting a more compact structure that has limited the penetration of water vapors. Subsequently, sample B9 was tested as a packaging material for bread preservation and the crust hardness

and dry matter were monitored. The results showed that, after 1 day of storage, sample B9 exhibited the same packaging behavior as PE in terms of crust hardness. The hardness of the bread crust in B9 was 26.4% higher than that of PVA after 4 days of storage. Sample B9 exhibited the same packaging behavior as PE in terms of the dry matter content of the buns after 2 days of storage. Through modification (adding citric acid, heat treatment conditions), a reduction of water vapor permeability of PVA by 88% compared to unmodified PVA was achieved.

OC16

Determination of Water-Soluble Vitamins from Food Supplements

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Water-soluble vitamins include the B-group vitamins and vitamin C. In order to monitor water-soluble vitamin content in food supplements an accurate and precise analytical method is necessary. UV-Vis spectrometry is one of the analytical methods that can be used to determine water-soluble vitamins due to the simplicity and accuracy of the results.
Niacin is one of the most important water-soluble vitamins, being a form of vitamin B3 [1]. Niacin facilitates the metabolic processes of the human body, because it serves as a cofactor in many biochemical reactions and it is present in the structure of the coenzyme NAD widespread in all living cells. Among the most important sources of niacin are poultry, beef and fish, legumes, fruits and vegetables [2]. Niacin is well known as one of the most effective agents for the prevention of cerebrovascular accident and heart attacks associated with atherosclerosis [3], but the discovery of this vitamin was crucial for the treatment of pellagra, taking the name of vitamin PP- pellagra preventive [4]. The administration of food supplements compensates for the vitamin deficiency [5].

In this study the concentration of niacin in food supplements was determined by UV-Vis spectrometry. Pure niacin was solubilised in ethanol and the linearity curve was obtained at 262 nm. The niacin content of three food supplements in tablet form was analysed. The obtained results were in accordance with the leaflet of the food supplements and the method was validated.

Keywords: water-soluble vitamins, niacin, food supplements, UV-Spectroscopy.

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P1

Perspectives in meat processing

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Meat technology includes all steps from animal handling and slaughtering to production of different meat products. During animal handling, special attention is paid to animal welfare,not only to protect animals from suffering but also beause of animal welfare's importance for meat quality.The oldest processing methods (chilling, freezing, salting,

smoking and drying) are being readjusted with respect to equipment and consumer's health issues.Special attention is given to preservation of meat's nutritive value (milder heat treatment) and health promoting properties of the products (functional foods). Novel methods (irradiation, high pressure, pulsed electric field, pulsed light and cold plasma) struggle with some issues such as acceptance by consumers, expensive equipment and effects on food's sensory properties.Along with novel products, demand for traditional meat products is still increasing which requires the the uniqueness and quality of these products to be preserved, along with increased production capacity.

Key words: animal welfare, meat processing, meat nutritional value

P$_2$

Dietary fibre and phytochemical characteristics of fruit and vegetable by-products and their recent applications as novel ingredients in food products

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Presently, producers are striving to create products which contain a value added factor, such as dietary fibre or in more recent times, phytochemicals. The production and addition of such nutrients can be quite costly for the producer. In the fruit and vegetable industry, the preparation and processing procedures can lead to one third of the product being discarded. This can be costly for the manufacturer and also may have a negative impact on the environment. Research has shown that these by-products can have a high nutritional value. It has also been suggested, that they could be used as a food ingredient due to their functional abilities such as gelling and water binding. The focus of this review is on the nutritional and functional properties of the by-products of food processing and their potential applications as nutritional new ingredients in foods.

Key words: fruit and vegetables, dietary fiber, nutitional value

P3

Extrusion processing of raw food materials and by-products

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Extrusion technology has rapidly transformed the food industry with its numerous advantages over other processing methods. It offers a platform for processing different products from various food groups by modifying minor or major ingredients and processing conditions. Although cereals occupy a large portion of the extruded foods market, several other types of raw materials have been used. Extrusion processing of various food groups, including cereals and pseudo cereals, roots and tubers, pulses and oilseeds, fruits and vegetables, and animal products, as well as structural and nutritional changes in these food matrices are reviewed. Value addition by extrusion to food processing wastes and by-products from fruits and vegetables, dairy, meat and seafood, cereals and residues from starch, syrup and alcohol production, and oilseed processing are also discussed. Extrusion presents an economical technology for incorporating food processing residues and by-products back into the food stream. In contemporary scenarios, rising demand for extruded products with functional ingredients, attributed to evolving lifestyles and preferences, have led to innovations in the form, texture, color and content of extruded

products. Information presented in this review would be of importance to processors and researchers as they seek to enhance nutritional quality and delivery of extruded products.

Key words: by-products, nutritional changes, food groups, value addition, waste utilization

P4

The influence of the valerian tincture addition on the functional butter production

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The purpose of this research was to evaluate the possibility of improving standard butter by adding different proportions of valerian tincture. Thus, the following types of butter were produced: UVM - control butter, UV1 - butter with 0.1% valerian tincture, UV2 - butter with 0.5% valerian tincture and UV3 - butter with 1% valerian tincture which were analyzed at the time of obtaining - day 1, after 5 days of refrigeration - day 5, after 15 days of refrigeration - day 15 and after one month of freezing. The functional butters were sensorially and physical-chemical investigated for: humidity (drying method), pH (pH meter), refractive index (refractometer), peroxide index (spectrophotometer at a wavelength of 500 nm). Following the experimental results, it can be concluded that the most pronounced antioxidant role of the valerian tincture can be observed for UV3 butter, characterized by the highest content in this tincture.

P5

Food waste in the case of bakery products

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The More Green Association made a short film about how food waste can be prevented in Romania. It even runs a project to inform and raise awareness among Romanians. According to the association, in the post on Facebook - Food Waste Romania, a consumer throws around 130 kilograms of food in the trash year. These are divided into: 24% cooked food, 22% fruit, 21% vegetables, 20% bread and bakery products, 11% milk and dairy products, 1% meat products, 1% other foods. „Franzela" is the favourite bread of Romanians. Due to the overproduction and short shelf life inherent in the bakery product category, consumers most often throw away bread because it has gone stale or mouldy. Thus, 10% of the bread produced is wasted along the supply chain before reaching the consumer. From the current information in the case of bread named franzela, 78% is wasted in the urban environment and 77% in the rural environment. In the case of the round bread 48% in the urban environment and 27% in the rural environment, in the case of bakery, the wastes in the urban environment are 39-48%, while in the rural environment it are 13-14%. For rye bread, 36% in urban areas and 24% in rural areas.

That's why in this article we set out to identify the fastest methods to reduce the waste of bread assortments. As an application, I envision techniques for

using stale bread as breadcrumbs, which together with other ingredients, used flour and starch, can form biodegradable materials, croutons, bruschetta, friganelles and animal feed.

Keywords: food waste and recycling in biodegradable materials.

P6

Citrus waste and food waste reduction strategies

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Food waste is all the food produced for human consumption that is lost or thrown away along the route from the place of production to the plate. The causes of food waste are multiple. Among them are: improper storage, overproduction, overripe or non-conforming vegetables and fruits, beaten, excessive shopping, oversized food portions. The food waste registered in Romania today shows us that: 49% of the waste is given by households, 37% waste results from the food industry, 7% is registered by retail, 5% by restaurants, pizzerias, confectioneries, patisseries and 2% by the agricultural sector. In this situation, different strategies have been created to reduce food waste, such as: buy intelligently - only as much as necessary, buy less attractive products, check the expiration date, consume small portions, donate, macerate leftovers as compost food. Using the compost later in the garden, where the plants will be happy.

Regarding the waste recorded in the case of citrus fruits, the largest amounts are monitored for lemons and oranges because they are also the most preferred and consequently the most traded citrus fruits. Lemons are mostly consumed as fresh fruit because they contain citric acid, vitamin C and polyphenols, which confer various health benefits such as alleviating fatigue. Lemon also contains eriocitrin, the main lemon polyphenol, a water-soluble antioxidant found in abundance in lemon juice and peel. Thus, lemon is consumed, either fresh, or is used in soft drinks, alcoholic beverages and culinary preparations, the extraction of natural flavors. Oranges also have important nutritional principles in the fresh state. Therefore, to reduce food waste, it is advisable to use sales platforms, food banks, various means of rapid processing to obtain natural juices, concentrates, natural flavors from the peel.

Keywords: citrus waste and recycling

P7

Evaluation of the triterpenoid glycoside content of the horse chestnut (*Aesculus hippocastanum* L.) extracts and their cyclodextrin complexation behavior

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Aesculus species are originated from Europe and *A. hippocastanum* L., known as horse chestnut, is one of the most known. The fruits (seeds) are valuable for their important effect against chronic venous insufficiency (CVI) and other blood- or vein-related disorders. Triterpenoid glycosides (saponins) such as aescins are the bioactive compounds against CVI, but antioxidants including flavonoids or procyanidins are also important for their preservative properties in food and packaging industry [1-3].

This study deals with the separation, analysis and cyclodextrin (CD) encapsulation of triterpenoid saponins (especially aescins) from *A. hippocastanum* L. ethanolic extracts (AE), with possible applications in the CVI treatment. Extracts were obtained from the *A. hippocastanum* L. fruit core using a semi-continuous Soxhlet extraction at a sample:solvent ratio of 1:12 (*m/v*). The aescin Ia content of the raw extracts was evaluated by an analytical RP-HPLC-UV-Vis and the concentration was performed by fractionation with a preparative HPLC-RI (both from Jasco) [4]. The α- and β-CD complexation was performed by kneading, using an approximate molar ratio of 1:1 for the aescin-based extract:CD (based on the HPLC data). Complexes were obtained with recovering yields of 67.3-92.6%, higher for β-CD/AE complexes. The presence of both CD and triterpenoid glycosides in complexes was determined by FTIR. The aescin-related bands mainly appear at 1651 (ν_{CC}), 1487 (ν_{CH}), 1242 (ν_{CO}) and 1156 cm^{-1} ($\nu_{COC(Glc)}$), while for CDs the main bands appear at 3294 (ν_{OH}; superimposed with the same bands for aescins), 1640 (δ_{OH}), 1077 (ν_{CC}), 1023 (ν_{CO}), 952 (ν_{CH} for CD ring) and 841 cm^{-1} (δ_{CCH} for α-type glycosidic bond in CDs). Also, the thermal stability and the triterpenoid glycoside molecular encapsulation efficiency were evaluated by thermogravimetry (TG-DTG) and differential scanning calorimetry (DSC). Both the TG mass loss and the DTG temperature peak corresponding to the water/moisture release in CD/AE complexes are significantly lower in comparison with the starting α- and β-CD hydrate. Moreover, this DSC calorimetric effect in complexes are lower, while the endothermic peak corresponding to the crystalline-amorphous transition in anhydrous CD hydrates is significantly lower or disappear in complexes. This observation supports the CD/triterpenoid glycoside molecular encapsulation process. These

materials can be further studied for their controlled release of bioactive aescins and possible applications in the prolonged CVI treatment.

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P8

Evaluation of the similarity/dissimilarity of some autochthonous fruit extracts rich in anthocyanins and the main antioxidant compound classes by FTIR-PCA

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Antioxidants are important natural compounds found in many fruits and vegetables, which are involved in the scavenging of free radicals in humans. Antioxidants have biological activities such as anti-inflammatory, anti-atherosclerotic, or anti-aging activities, but also they prevent some cardiovascular diseases, diabetes, cancer, or neurodegenerative disorders.

However, the beneficial effect to the human health is controversial and depends on the antioxidant type, daily intake and the patient conditions [1-5].

The goal of this study was the evaluation of the similarity/dissimilarity of some autochthonous fruit extracts (*Prunus*, *Vitis* and *Ribes* species) that are rich in anthocyanins with the main natural antioxidant classes (anthocyanins, anthocyanidins, flavonoid glycosides and aglycones, and chlorogenic acids), using the combined Fourier-transform infrared spectroscopy – principal component analysis (FTIR-PCA) technique [6,7]. Both anthocyanin based fruits ethanolic extracts (plums – *P. domestica* L., code "PB" or "PVR", red grape – *Vitis vinifera* L., code "Vv", and blackcurrant – *Ribes nigrum* L., code "Rn") and standard natural antioxidant compounds (cyanidin, code "Cy" – anthocyanidin class, cyanidin 3-*O*-glucoside, code "CyG" – anthocyanin class, quercetin, code "Q" – flavonoid aglycone class, rutin, code "R" – flavonoid glycoside class and chlorogenic acid, code "CG" – chlorogenic acid class) were analyzed by FTIR (Bruker Vertex 70, range 4000-400 cm^{-1}, resolution 4 cm^{-1}, Figure 1, left) and the main band characteristics were processed by PCA. The extracts (all coded as "E") were more similar with "CG" and "A" antioxidant classes and were dissimilar with "F" classes (Figure 1, right). This very fast and non-destructive FTIR-PCA method allows the overall evaluating the fruit extracts from the main antioxidant classes point of view, which can be useful for classification of fruit extracts and their application in foods.

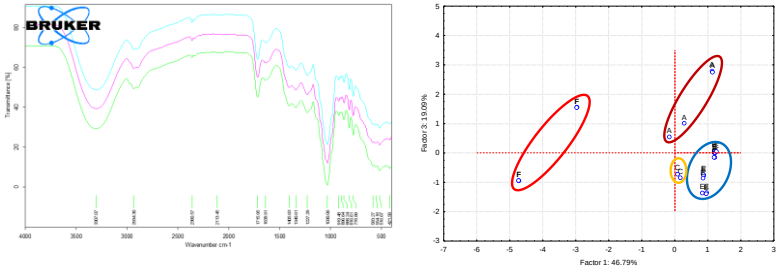

Figure 1. Representative FTIR spectra for *R. nigrum* L. extracts (left) and the PC_3 vs. PC_1 scores plot for the fruit extracts (E), and standard antioxidant compounds (F – flavonoids, A – anthocyanidins/anthocyanins, CG – chlorogenic acids) (right)

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P9

Antioxidant and sensorial properties of flavored sesame oil

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Sesame oil is obtained from sesame (*Sesamum indicum*) seeds by cold pressed and, thereby, it is preserved the nutritional values and flavor. Sesame oil is a little-known oil in our country but it is making an ideal ingredient for healthy cooking. Sesame oil never used as a cooking oil; he was and is used as a seasoning in traditional foods in Asian countries. Cold pressed sesame oil contains high antioxidants compounds and vitamins (A and E). With the flavor very strong and distinct, the sesame oil is best used in foods in small quantities. The aim of this study was to obtaining and characterize some sesame oil samples flavored with basil (*Ocimum basilicum*), garlic (*Allium sativum)*, cumin *(Cuminum cyminum*) and cinnamon (*Cinnamomum zeylanicum*). Being an aromatized oil, sensory evaluation (hedonic analysis) and antioxidants properties were carried out. Flavored sesame oil was analyzed in terms of total antioxidant capacity by FRAP assay, total phenolic content by Folin-Ciocalteu method and vitamin C by titration with a 2,6-dichlorophenolindophenol sodium. Using the Hedonic scale, the sesame oil flavored with cinnamon was the most pleasant with a significant score in all sensory characteristics. The highest

score was given for taste (8.9) followed by its appearance with a score of 8.8. The highest amount of total polyphenols is found in the oil flavored with cinnamon, and the highest antioxidant capacity was found in sesame oil with garlic, that flavored the oil. On the other hand, the vitamin C content, in dry spices, increases from cumin → garlic → basil → cinnamon. According to laboratory analysis, vitamin C has not been identified in sesame oil and thus, the aromatic oil will be enriched with a small amount brought by spices. Studies show that, in recent years, the population tends to consume more healthy foods

Keywords: sesame oil cold pressed, spices, antioxidant properties

P10

Obtaining and characterization of a new variety of buffalo brined cheese with mint

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Brined cheese is a dairy product appreciated by consumers, available in a wide variety on the market. Its production from buffalo milk gives this product a high nutritional value. Mint, recognized for its therapeutic and culinary properties, is added in finely chopped form to the brined cheese. This study aimed to qualitatively assess both plain brined cheese and brined cheese with added mint, without the use of probiotics and starter cultures, prepared according to a traditional recipe. Physicochemical and microbiological analyses were conducted for both variations. The results indicate that the classic buffalo brined cheese was most organoleptically appreciated. However, the sample with added mint is valued for its color, freshness, and aroma. Physicochemical analysis shows a higher moisture content in the mint sample due to the contribution of the plant. Microbiological analysis indicates that with the addition of mint and salt, the total number of germs decreases. Brined cheese made from buffalo milk with added mint could be an alternative appreciated by consumers. Mint exhibits an antimicrobial effect, which suggests that it could be successfully recommended in the market.

Keywords: mint, brined cheese, microorganisms

P11

Antioxidant activity and kinetics of raspberry (*Rubus idaeus* L.) extracts in the presence of β-cyclodextrin

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Anthocyanins and anthocyanidins are valuable natural antioxidants but with low stability. Moreover, they easily react with free radicals, including in the human body. Consequently, these antioxidants have a short time radical scavenging activity. The increasing of the antioxidant activity time (prolonged activity) can be obtained by cyclodextrin (CD) encapsulation. Also, the stability of these antioxidants is enhanced. Raspberry (*Rubus idaeus* L.) is widely spread in Europe and has a high content of nutrients (vitamin C, folate, vitamin K, tocopherols, lutein and zeaxanthin) and antioxidants.

Among antioxidants, anthocyanins (cyanidin 3-glucoside and cyanidin 3-sophoroside), ellagitannins, hydroxycinnamic acids and flavonols (quercetin and kaempferol glycosides) are the most important [1-3].

This study deals with the evaluation of the overall antioxidant activity of *R. idaeus* L. ethanolic extracts (RE) in the presence of β-CD as modulating agent, using the model radical DPPH· (2,2-diphenyl-1-pycrylhydrazyl). Moreover, the kinetics of the DPPH· reaction with the antioxidant compounds from the RE samples in the presence of β-CD was evaluated through the zero, first and second order kinetic models [3-6]. RE samples were obtained in a 250 mL Soxhlet extractor equipped with 500 mL collecting flask, from 25 g of grounded raw fruit and 300 mL ethanol (six multiplicate samples). Cyanidin and cyanidin 3-glucoside were quantified using an analytical HPLC-UV-Vis system (Jasco), with values of 146.2±26.4 mg cyanidin 3-glucoside/kg FW (fresh weight) and 6.41±0.65 mg cyanidin/kg FW, respectively (Figure 1, top). The antioxidant activity, expressed as the radical scavenging activity (RSA, %) was slightly higher for the β-CD/RE system (77.41±0.57%), in comparison with the raw RE samples (72.93±0.99%). Regarding the kinetic evaluation, the best results were obtained for the kinetic models of the first and second orders for the time interval 0-180 s, where the coefficients of determination were r^2 = 0.931-0.958 and r^2 = 0.979-0.987, respectively (Figure 1, bottom). The rate constants were in the range of $k_{(1)} = 3.3\text{-}4.1 \cdot 10^{-3}$ 1/s for first-order kinetics, respectively $k_{(1)} = 22.2\text{-}30.8 \cdot 10^{-3}$ 1/(mM·s) for second-order kinetics. In these cases, the half-lives were in the range of 169-294 s, with generally lower values when β-CD was used in the reaction system.

This fact confirms the results regarding the antioxidant activity, as β-CD favorably influences the reaction of DPPH· with the antioxidant compounds from the extracts (higher reaction constants).

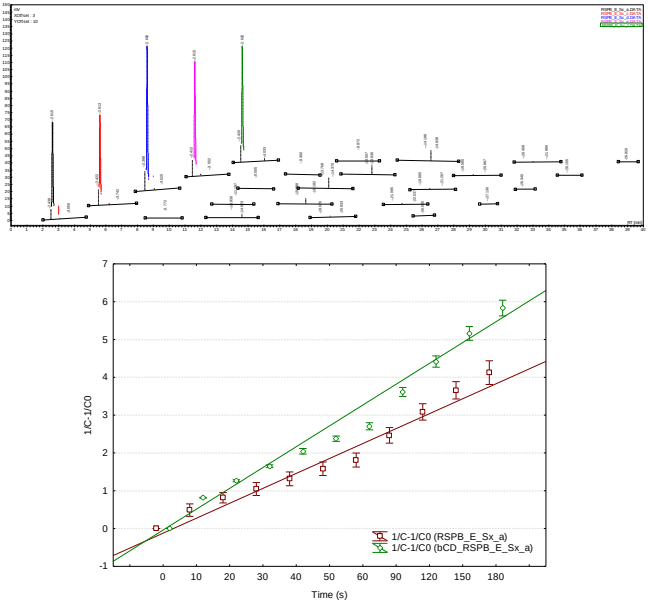

Figure 1. Superimposed of HPLC chromatograms for raspberry fruit extracts (top) and the linear regression for the second-order kinetics for the interval 0-180 s in the case of the reaction of the free radical DPPH· with the raspberry extracts in the absence or in the presence of β-cyclodextrin (bottom)

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P12

Characterization of some vegetable fillings for puff pastry

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The aim of the present study was to obtain and characterize some green vegetable fillings for puff pastry. Thus, leaves of nettle, spinach, radishes, alfalfa and horseradish were used in combination with feta cheese, in identical percentages for all fillings. The sensory examination of puffs with the five fillings showed a very good acceptability (between 3.4 and 4.8 out of 5.0 possible points), the most appreciated taste being that of the alfalfa filling. The best antioxidant activity (IC50%) was found in fresh radish leaves (99.4%) and in the filling with radish leaves (68.9%). The lowest antioxidant activity was recorded in fresh spinach leaves (16.6%) and spinach filling (10.33%). The total polyphenol content of fresh leaves was higher than that of cooked leaves, the highest value being recorded in fresh alfalfa samples (34.7 mg GAE/g sample). Even after cooking, the total polyphenol content of alfalfa was higher than the other fresh leaves. From the approximate composition point of view, the lowest energy value was calculated for the filling with horseradish leaves (113.15 kcal/100 g), and the highest – for the filling with radish leaves (158.4 kcal/100 g). This study

proved that these plants once used in Romanian cuisine present nutritional characteristics and bioactive compounds extremely important for consumers. These plants should be promoted on an industrial scale, both for their benefits and for the fact that they are cheap sources of food, even if they are seasonal there are conservation solutions.

Keywords: green leafy vegetables, fillings, polyphenols, antioxidant activity.

P13

Effect of fortification with vegetable purees on sensory and physicochemical properties of wheat flour pasta

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The research was conducted in order to evaluate the physicochemical and quality characteristics of vegetable puree-enriched pasta for the improvement of their nutritional value. Samples were made from white wheat flour, and fresh vegetable purees have been added to obtained nutritios pasta: spinach, tomato, and beetroot pasta. The following parameters were analized for the pasta products: acidity, humidity, mineral content, volume variations, water solubility index, water absorption index, dry matter losses on preparation, sensory evaluation and micro structural characteristics. Pasta prepared with vegetable purees showed higher values of moisture content compared to control pasta, being directly proportional to the acidity values. Also, pasta prepared with vegetable purees showed a higher increase in volume after boiling compared to control pasta. The incorporation of vegetable matter has led to a softer texture of pasta, which may be due to the non-starchy nature of vegetables. Pastas with spinach and tomato puree were highly valued for their appearance, color, overall quality, and less for flavour. The incorporation of vegetable purees affects

the pasta quality attributes and it imparts natural attractive color to the pasta.

Keywords: pasta, spinach puree, tomato puree, water solubility index, sensory evaluation

P14

Characterization of some appetizers obtained from scalded dough

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The use of scalded dough is known to obtain eclairs. In this study, simple and with addition of beet juice scalded dough was made with to obtain appetizers with various fillings (cheese and salmon, avocado and cheese with pineapple). The external appearance of the eclair shells, the simple version, was appreciated better than the version with the addition of beet juice, where the appearance per section was better appreciated. Also, the color of the simple shells was better scored than the ones with beet juice. The scalded dough appetizer variants were very well received by the evaluators, having a very good acceptability. The combinations of the two shell variants and the three filling variants segmented the evaluators' preferences. Appetizer variants with simple shells were preferred by the evaluators. The most appreciated appetizers were the beet shells in

combination with pineapple cheese filling, closely followed by the simple shell appetizers with the same filling. The cheese and salmon filling was better appreciated in plain shell than in beetroot ones. The same fact was observed for the avocado filling, which received lower scores than the other fillings. The titratable acidity of the simple appetizer shells was 17 g/L, respectively 23 g/L for those with beets. The acidity of the fillings was between 39.2 g/L and 121.6 g/L. The moisture content of the simple shaells was 18% and 25.2% in the beet ones. The water content of the fillers varied between 32.1% and 51.7%. The salt content in the shells was 0.24% and 0.26%, respectively, and in the fillings it was found between 0.38% - in the cheese and smoked salmon filling, and 2.59% in the cheese and pineapple filling. The lipid and protein content was higher in the plain shells, but in the beetroot shells a higher carbohydrate content was found. In the case of fillings, the highest lipid content was observed in the variant with avocado and the highest protein content – in the cheese and pineapple filling. The energy values of the fillings with avocado and cheese were clearly superior to those with cheese and smoked salmon.

Keywords: scalded dough, beets juice, fillings, sensory characteristics, physico-chemical parameters.

P15

Preliminary quality/price analysis for some green and black tea types

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Tea is the second most popular drink in the world, behind water. There is a lot of variety in terms of flavors and this lets the product to be adapted to a wider range of preferences. Thus, the goal of this study was to compare the quality of green and black tea from various firms in relation to the pricing of each product. This study required thorough price monitoring over a period of many months, as well as quality analyses such as relative humidity and ash content. For the gravimetric investigation, four tea types were used, with the first indicating the lowest price and the final being the most expensive. The price rise research was conducted between November 2022 and May 2023, with 28 samples drawn from each variety. All of these tests reveal a link between the price of a product and its quality; thus, when the relative humidity and ash content grew, so did the price, which became obvious over time.

Keywords: relative humidity, ash content, variable prices of tea

P16

Physico-chemical and microbiological analysis of an assortment of beer

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The legal definition of beer varies from country to country, but the common themes are that it is made from boiled grain extract and its alcohol is derived from fermentation rather than distillation or fortification. Although beer traditionally contains alcohol, a new wave of ultra-low and alcohol-free beers is calling even that quality into question. The only other essential ingredients are water - and skill. The analysis of the physico-chemical and microbiological parameters was carried out for a product already on the market, produced by URSUS BREWERIES S.A., in the branch in Timișoara, having access to the corresponding laboratory equipment, in order to carry out the appropriate analyses, in order to evaluate the physico-chemical parameters and microbiological for a product between two seasons, hot-cold. Within the food industry, the fermentation industry occupies an important place. The main activity of yeasts ensures the transformation of fermentable carbohydrates into a finished product. By using raw materials such as: malt, hops, non-malted raw materials such as corn, barley, after the boiling process, beer wort results, which, after seeding with yeasts from pure cultures, after fermentation, results in

different assortments of beer. Following the biotechnological production of beer, it is classified as food, as a result of its chemical composition consisting of: organic acids, mineral salts, protein substances, carbohydrates and vitamins. Beer has the effect of stimulating gastric and intestinal secretion and rehydrating the body. Physical analysis of beer involves the evaluation of various characteristics such as color, clarity, foam stability, viscosity and carbonation. These parameters provide important information on the general appearance and sensory characteristics of the beer and are evaluated by specific established methods, in correlation with the legislation in force. Chemical analysis of beer involves evaluating its composition, including the levels of various compounds such as carbohydrates, proteins, hop compounds and alcohol. This analysis provides important information about the taste, aroma and overall quality of the beer. Other chemical parameters that can be analyzed in beer include pH, acidity, dissolved oxygen and various ions (eg calcium, magnesium, sodium). These analyzes are usually performed using appropriate instruments and titration methods to ensure accurate measurements. Microbiological testing is a crucial aspect of ensuring the safety, quality and stability of beer throughout its production process. By assessing the microbial composition of beer, breweries can detect and prevent potential contamination problems, monitor the effectiveness of sanitation practices, and maintain consistency of flavor profiles. Here are some of the key microbiological tests commonly applied to beer. Microbiological testing was performed on Wallerstein Nutrient Broth (WLN) and NBB-agar media. Microbiological stability tests are performed to assess the beer's ability to resist microbial spoilage during its shelf life. These include testing for heat-resistant bacteria, anaerobic bacteria, or specific spoilage organisms that may cause off-flavors, haze, or other

quality problems over time. Monitoring fermentation progress through regular sampling and analysis helps ensure a healthy and consistent fermentation process. This involves evaluating yeast viability, cell viability and fermentation by-products to optimize fermentation conditions and achieve desired flavor profiles. In addition to specific microbiological tests, breweries use various quality control measures such as sensory evaluations, pH measurements, dissolved oxygen analysis and package integrity testing to ensure overall product quality and stability.

By implementing a comprehensive microbiological testing program, breweries can effectively control and maintain the microbial composition of beer, resulting in a safe, high-quality product for consumers. Regular testing, adherence to industry standards, and continuous improvement of sanitation practices are critical to successful brewery operations. This study provides valuable information for brewers and beer enthusiasts, facilitating informed decisions to ensure high quality and safe beer production in various climates.

Keywords: beer, hops, microbiological tests, fermentation, yeasts

P17

Microbiological analysis of quince nectar

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Fruits are healthy foods that people eat every day. They contain a lot of nutrients and substances that are beneficial for the body, so they must be included in our daily diet. Food is one of the most important environmental factors affecting human health. Methods of processing, preservation and preparation of various semi-finished products and foods have been known and applied since ancient times. Guts are one of the best sources of vitamin C, but they also contain large amounts of carbohydrates, vitamins A, B, calcium, potassium, phosphorus, magnesium and iron. Fruits strengthen the immune system and help fight respiratory viruses. Due to the fibers in the content, quince ensures intestinal transit, and therefore, it is also beneficial in case of constipation. In antiquity, quince competed with apples, being very often confused. The fruit, the quince, is a false berry covered with gray-brown fluff, yellow in color, with a firm, astringent and very aromatic pulp. Preparations with quinces - jams, marmalades, compotes, jellies, skins are made in this way to preserve the fruit's aroma, acidity and firm consistency. With the high content of pectin, which makes quince jelly very gelatinous, it is a real stimulant for children, those with physical exertion, those in

convalescence and all those who care about their health. They have anti-inflammatory properties. They are a rich source of vitamin C, providing almost 25% of the recommended daily requirement. Vitamin C fights against inflammatory conditions and helps improve immunity. Both fruit and seed extracts are used to treat dermatitis and cystitis. It helps in weight loss. They have a low calorie content, 100 grams contain 57 calories. Moreover, they are very low in cholesterol, saturated fat and sodium. All these qualities make them the most beneficial choice when it comes to diet and health. Quince has proven to be ideal for treating gastric ulcers. Quince juice is beneficial for people with such ulcers and is a very good remedy for peptic ulcer. Treats stomach ailments. They are an effective remedy for morning sickness. When consumed with honey, it can treat colitis, diarrhea, constipation and intestinal infections. Quince syrup is also used to treat hemorrhoids. They are rich in antioxidants. These fruits have antioxidant properties due to their polyphenol content. They fight against free radicals present in the body, prevent cardiovascular diseases and slow down the aging process. Treats nausea and seasickness. Whether you eat them cooked or baked, guavas can fight nausea and seasickness because they get rid of fluids in your body. Antiviral properties. Researchers have found that quince has some antiviral properties that can help fight colds, fevers, and other pathogens. Lower blood pressure and cholesterol. Because they are very rich in potassium, they help keep blood pressure in balance. If consumed regularly, they help lower blood cholesterol and protect heart health. It helps the body fight cancer. Antioxidants found in quince destroy cancer cells and fight free radicals. Natural astringents are in the granules in the pulp. They protect the mucous membranes and bind colon chemicals and cancer-causing toxins. Eliminates stress. The antioxidants found in these fruits fight stress and keep the mind clear and calm. Its nutritional and energetic value of quince nectar, together

with the almost complete absence of cellulose (a strong intestinal stimulant), has increased consumer interest in the juice. Their nutritional and intrinsic value makes them increasingly important as comforting and nourishing beverages. The microbiological analysis must be carried out in order to determine the healthiness of the obtained quince nectar. The microbiological analyzes carried out on the quince nectar proved its healthy character, the bacterial and fungal load being below the limits allowed by the legislation in force. It is recommended to consume the nectar immediately after preparation, to avoid microbial contamination.

If a larger amount of nectar is obtained, it is recommended to bottle and sterilize it. After opening, the containers should be kept in the refrigerator and consumed within 24 hours.

Keywords: quince, quince nectar, microbiological tests, bacterial load, fungal load

P18

Stinging and dead nettle plants as functional foods

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Nettle leaves and stems can be easily accepted as functional foods because they can be used as dietary food, providing not only nutrients and energy, but also modulate one or more targeted functions in the body, reducing the risk of diseases. Based on these observations which cover the aspects of functional food we can call nettle plat a potential functional superfood.

The aim of the study was to evaluate the properties of stinging nettle plants (*Urtica dioica* L.) and dead nettle plants (*Lamium album* L. and *Lamium purpureum*) as food and as medicine in order to create innovative foods.

Nettles, stinging or dead are used as edible plant and as medicine for over 2000 years but only in the last century they started to be considered as food with therapeutic properties. The study is based on a multitude of research papers and studies in order to create a database regarding chemical compounds and nutritional profiles of the investigated plants.

According to the created database, almost all nettle plants contain active biochemicals showing high antioxidant capacity, high content of polyphenols and flavonoids, that help to reduce free radical generation. At the same time, the plants show high contents of minerals and vitamins, providing a healthy nutrition, regardless of gender and age of consumers.

Using generalized linear model, we managed to identify the ideal proportions of dry stinging nettle and dry dead nettle leaves for creating a tasty and healthy functional tea.

Keywords: functional tea, mathematical model, fingerprint, nettle database

P19

Organoleptic and physicochemical characterization of spinach muffins

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Spinach muffins are a source of rich nutrients, which are rarely accounted for in recent studies. The present paper explores the technological stages behind the production process of these muffins, as well as more advanced analyses in regards to their quality.

In the first part, it is realized a thorough bibliographic review of the subject, starting with an overview of muffins and their nutritional values. Then, it is presented the nutritional properties and health benefits of spinach and milk, before examining how muffin consumption with these ingredients may benefit the organism. Also, the production technology of spinach appetizer muffins is detailed, with comprehensive descriptions of the technological processes from the receipt of ingredients to storage, including potential manufacturing defects.

The second part of the paper focuses on the organoleptic and physicochemical characterization of a variety of spinach muffins. This involves a comprehensive sensory evaluation and a centralization of results

from a group of tasters. The physicochemical characterization of the spinach muffins is carried out, determining the moisture content, the amount of dietary fiber, the protein and also, the sugar content.

The paper fills an important gap in the recent literature of food production, by focusing on an unconventional food product.

Keywords: spinach, muffins, physicochemical analysis.

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P20

Study on the technique of obtaining grape jam with various additions

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The consumption of fruits has many benefits for the human body, so different ways of preparing them are sought to increase the amounts consumed. In addition to their pleasant taste, grapes have benefits such as a high content of vitamins or minerals. Grapes also contain the most powerful antioxidant, resveratrol, which is why they have effects in protecting the cardiovascular system, in detoxification, in maintaining the energy level and many others.

Cooking grapes in the form of jam allows them to be preserved for a longer period, which is why people resort to this method countless times.

A literature study was carried out with a role in synthesizing information about the benefits of grapes but also about the technology of obtaining grape jam with almonds and rum addition. Thus, the method of making the jam, the technological scheme for obtaining it, the description of the stages, but also the possible defects that could appear were presented. After

obtaining, the sensory evaluation of the product and the physicochemical analyzes were performed.

It was concluded that taste and color were the most appreciated characteristics in the case of the first jam, coded GP_1, obtaining scores of 3.8 and 5 respectively, and in the case of the second jam, coded GP_2, color, taste and smell received the scores of 4, 5 and 4 points, respectively; the other characteristics obtaining slightly lower values.

The two types of grape jam were analyzed for moisture, total acidity and sugar content. Thus, the results of the physicochemical analyze showed that in case of preparing the second grape jam recipe (GP_2), the moisture content of the product decreased compared to the first (GP_1). Thus, if in the first sample the moisture content showed a value of 37.12%, in the second sample the moisture content decreased to 32.61%. Regarding the sugar content of the two products, it increased from 42.7°Brix (GP_1) to 47.5°Brix (GP_2). When analyzing the total acidity, there was a slight increase, with the first jam having a value of 0.55%, and the second 0.67%.

Thus, following the physicochemical determinations, comparing the two grape jams, an increase in the sugar content and total acidity was noticed, but also a decrease in the moisture content of GP_2, compared to GP_1.

Keywords: grapes, grapes jam, almonds, physicochemical analysis.

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P21

The antioxidant activity of rosehip (*Rosa canina* L.) review

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In recent years, rosehip has been the subject of several studies due to its nutraceutical properties for human health and the observed beneficial health effects that may result from certain compounds extracted from the fruit, such as polyphenols, carotenoids, vitamin E, flavonoids and the antioxidant vitamin C. The medicinal properties of Rosa canina fruits are due in part to their richness in phenolic substances. Rosehips contain several biologically active compounds, such as: organic acids, pectins, flavonoids, tannins, carotenoids, fatty acids, vitamins (especially vitamin C and also vitamins B1, B2, K, PP, E).), macro- and microelements, etc.

Keywords*: Rosa canina* L, antioxidant activity, chemical composition, rosehip

INTERNATIONAL SCIENTIFIC SYMPOSIUM "Young Researchers and Scientific Research in Life Sciences" for Bachelor, Master and Ph.D. Students
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P22

Natural celery-based juice assortment - protective quality assessment

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Natural juices, made from a variety of fruits and vegetables, are an important part of a healthy diet. These are appreciated for their high nutritional value, pleasant taste and flavour, their ability to reduce appetite and promote food assimilation, as well as their beneficial effects on metabolism. The aim of this work is to obtain a natural mixed juice from celery, pineapple and parsley leaves (CPPJ) and to determine its proximate composition, energy value, sensory properties, as well as to analyze the protective properties of this juice mixture by determining the content of vitamin C (iodometric method), total polyphenols (Folin-Ciocalteu assay), antioxidant activity analysis (2,2-diphenyl-1- picrylhydrazyl free radical method), compared to plain celery juice (CJ) and raw materials. Experimental results showed that among the raw materials, parsley leaves had the highest vitamin C content (135.26±1.02 mg/100g), followed by pineapple, with celery having a much lower concentration. Consequently, CPPJ mixed juice was much richer in ascorbic (69.68±0.56 mg/100g) acid

than plain celery CJ juice (7.25±0.11 mg/100g). The highest concentration of total polyphenolic compounds was reported in pineapple (26.76±0.22 mg gallic acid/g), followed by parsley leaves, so that CPPJ was superior (23,94±0.12 mg gallic acid/g) to CJ (16.84±0.08 mg gallic acid/g) also in terms of the content of these particularly healthy antioxidant compounds for the consumer's body. Parsley leaves showed the strongest anti-radical activity, followed by pineapple, so CPPJ was superior to CJ in this respect as well. In terms of proximate composition, it was noted that the addition of pineapple and parsley leaves in CPPJ resulted in significant increases in total carbohydrates, sugars, protein and total lipids as well as energy value. Sensory analysis by a panel of 20 volunteer (inexperienced) tasters resulted in significantly higher scores for CPPJ than CJ on all organoleptic characteristics analysed,

Keywords: celery, natural juice, ascorbic acid, polyphenols, antioxidant activity

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P23

Obtaining and characterization of some sugar-free red beet and apple jellies

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Making sugar-free jellies is a way to diversify and meet the demands of the consumer market, which is increasingly looking for quality products, especially with a high nutrient content and lower caloric value, whether for aesthetic, physiological reasons or health restrictions. Fruit jellies prepared with natural sweeteners with low or zero calories are healthier and can also be consumed by people suffering from diabetes as they do not affect blood sugar levels.

A first objective of this work was to obtain innovative assortments of natural, vegan, sugar-free, agar-agar gelled jellies in four variants: golden golden apple juice jelly, plain (AJ1) and with added cinnamon essential oil (AJ2), respectively red beet juice jelly and golden apple juice, plain (RBAJ1) and with added mandarin essential oil (RBAJ2). The second objective of the work was the analysis of apple juice, red beet juice and

finished products in terms of total polyphenol content and antioxidant activity, and the analysis of proximate composition, energy value and organoleptic characteristics of the finished products. Red beet juice was richer in total polyphenols and had stronger antioxidant activity (9.07±0.15 mg gallic acid/g, respectively RSA=48.82±0.32% for 1:1000 dilution) than apple juice (4.82±0.04 mg gallic acid/g, respectively RSA=44.64±0.28% for 1:1000 dilution). Also RBAJ1 and RBAJ2 had a higher amount of total polyphenols and higher antioxidant activity than AJ1 and AJ2; within the same category of jelly, those with added essential oil were richer in total polyphenols and with better antioxidant action. Organoleptic analysis using the 5-point hedonic scoring scale method resulted in scores above 4 on all sensory characteristics for both categories of jellies.

Keywords: sugar-free jellies, red beet, apple, polyphenols, antioxidant activity.

P24

Evaluation of bioactive compounds of by-product resulting from tomato processing

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Tomato (*Lycopersicum esculentum*) is the most popular and widely cultivated seasonal vegetable crop; can be served as a fresh fruit but is consumed, all year round, in processed products: juice, paste, ketchup, etc. In tomato processing resulting different by-products including: peels, seeds and pulps; they are known as tomato waste. Tomato seeds are a rich source of protein and amino acids. Tomato waste represents an economic and environmental problem for the tomato processing industry. Globally, 8.5 million tons of tomato wastes are generated each year. In Europe, 23 million tons of tomatoes was harvested from which Romania produce about 743 thousand tons tomatoes/year. Tomatoes grown in climatic conditions of Romania is highlighted by high sugar content, acidity, ascorbic acid, lycopene and other antioxidant compounds. This study aims to evaluate the bioactive compounds of by-products resulting from the processing of tomato by addition in vegetable oils as a natural antioxidant improving quality of final products. The oil samples were analyzed in terms of total antioxidant capacity by FRAP assay, total phenolic content by Folin-Ciocalteu method, vitamin C by titration with a 2,6-

dichlorophenolindophenol sodium and lycopene content. It's known that food products obtained by addition by-products resulting from the processing of tomato like: meat, dairy, oil and bakery products, pasta and noodles, jams, ice cream, are rich in bioactive compounds with nutritional properties. Today, are being sought to alternative sustainable solutions for the recovery of tomato processing by-products as a source for animal feed and as a valuable component for value-added products in food industry.

Keywords: tomato processing by-products, bioactive compounds, vegetable oils

P25

Exploiting the bioactive potential of sea buckthorn to obtain products with improved functionality

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This study aims to valorize the bioactive potential of sea buckthorn in the food industry. The information obtained being useful to design various food products and more. Sea buckthorn (*Hippophae rhamnoides* L.) is an aromatic fruit, but it cannot be consumed in its natural state, due to its bitter and astringent taste. The fields of application are extremely vast for sea buckthorn, achieving spectacular effects in medicine, the food industry, cosmetics and the pharmaceutical industry. It is multifunctional, with ecological, economic and social benefits and can be considered one of the essential resources for the rehabilitation of the ecological environment.

Following the sea buckthorn conditioning operation by drying at different temperatures, the research carried out led to the following conclusions: Sea buckthorn is a sustainable raw material, available in large quantities, rich in phenolic compounds with high antioxidant activity, with numerous health benefits. Conditioning sea buckthorn by convective drying results in reduction of total phenol content and antioxidant activity. The magnitude

of the investigated characteristics is influenced by the parameters of the drying process (temperature and time). As the temperature and drying time increase, the degree of deterioration of the antioxidant properties increases. The results obtained highlight the fact that the temperature of 65°C is recommended for the conditioning of sea buckthorn in order to maintain a high content of bioactive compounds with antioxidant properties. The parameters of the conditioning process play a significant role in the stability of phenolic compounds: both high temperatures and prolonged exposure to heat treatment lead to the degradation of phenolic compounds and affect the antioxidant activity of sea buckthorn. The results obtained recommend the use of sea buckthorn as a functional ingredient in the recipe for the manufacture of various food products. In this work it was chosen to make white chocolate pralines with jelly filling and sea buckthorn jam to exploit the bioactive potential of sea buckthorn in the food industry. With this praline recipe, it was highlighted how sea buckthorn can be used in an innovative way in culinary preparations, offering consumers a healthy and tasty alternative.

Keywords: sea buckthorn, phenolic content, antioxidant properties, white chocolate pralines with jelly filling and sea-buckthorn jam

P26

Possibilities for preserving the functional potential of rosehips by convective drying

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The choice to address the topic of exploiting rosehips in the food industry as a source of natural antioxidant compounds arose from desire to explore the ways in which we can benefit from the extraordinary potential that these fruits offer in maintaining our health. Rosehips, with their high antioxidant content and beneficial health properties, captured my attention and inspired me to explore ways in which they can be harnessed in the food industry to develop healthier and more functional food products. The exploitation of rosehips in food industry offers multiple benefits, as these fruits contain not only antioxidants, but also vitamins, minerals and dietary fiber. Dietary use of the natural antioxidant compounds found in rosehips can help support health and reduce the risk of oxidative stress-related diseases such as cardiovascular disease and cancer. The aim of the research carried out is to stabilize the rosehips by convective drying under different conditions of temperature and time in order to retain as much as possible the bioactive

compounds and their antioxidant properties. This aims to preserve the functional potential of rosehips in order to exploit it as a functional ingredient in various food applications. Based on the results obtained, in order to ensure microbiological stability and preserve bioactive properties, it was decided to condition the rosehips at 65°C, for 9 h, to a moisture content below 5%, at this value the microbial activity is practically non-existent. We can appreciate that the parameters of the conditioning process play an important role in the stability of the phenolic compounds, because both elevated temperatures and long-term exposure to heat treatment lead to their degradation and the reduction of the antioxidant capacity of rosehips. In summary, rosehips represent a valuable source of natural antioxidant compounds that can be used in the food industry to improve the quality and nutritional value of food products. Harnessing rosehips in this way can help promote a healthy lifestyle and provide more nutritious and antioxidant food options.

Keywords: rosehips, bioactive compounds, antioxidant properties, convective drying

P27

Rucăr cheese smoked with natural smoke from beech wood

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Cheeses are natural products, which are obtained by removing the whey from the curd formed as a result of the coagulation of whole, skimmed or partially skimmed milk, cream, buttermilk or mixtures of these products. Along with milk, cheeses have been the main food in the diet of different peoples since ancient times. Dairy products have a high calcium content, which is essential for bone development, therefore for harmonious growth.

Rucăr cheese has a particularly important role in human nutrition, it represents an important source of nutritional factors with a high biological value, which is concentrated in a small volume and which presents a high degree of digestibility. Due to its organoleptic properties as well as its high nutritional value, cascaval is a cheese highly appreciated by consumers, so this product is manufactured in large quantities, holding an important share in the production of cheeses in our country.

The purpose of this work was to highlight the physico-chemical characteristics of an assortment of cheese obtained from cow's milk by

scalding the curd (Cheese Rucăr). In conclusion, the following main aspects can be drawn:

- fat values relative to the U.S. of the cheese samples analyzed were between 47.8% and 49.6%, the minimum allowed value being 46%.
- the salt in the analyzed samples fell within the maximum allowed limit of 3.5% (between 2.6% and 3.2%);
- the amount of water in the analyzed samples fell within the maximum allowed limit of 47% (between 41.7% and 42.9%);
- in terms of dry matter, the analyzed samples showed values between 57.1% and 58.3%, the minimum allowed limit being 52%;

Key words: cheese, milk, Rucăr cheese

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P28

Quality assessment of bread produced from rice flour, tamarind flour and elderflower powder blends

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In recent years, as people's interest in food and health has grown, the importance of nutrition has steadily increased, as has the number of studies on food fortification and the production of functional products [1]. Food fortification is one of the techniques developed and applied to solve health problems encountered in society. The need for diverse gluten-free flour alternatives catering to a wide range of dietary requirements and those with gluten intolerance compelled us to focus on this issue. A healthy diet is the central therapeutic measure for gluten intolerance [2,3]. The objective of this study was the development and nutritional, physical and sensory evaluation of an assortment of gluten-free bread using rice flour, tamarind flour and elderflower powder as raw material. Tamarind is a nutritious fruit with a variety of uses. Tamarind flour (TF) is rich in proteins (13.6%), in fibers (21.6%), has high content of calcium, phosphorus, magnesium, potassium, copper, zinc and manganese and significant source of bioactive compounds including polyphenols, especially very rich in flavonoids. This flour possesses anti-inflammatory, mineralizing, cytotoxic and antioxidant

properties and prevents diseases of the cardiovascular system [4]. Elderflowers powder (EP) contains a large number of bioactive ingredients, including proteins, vitamins, minerals, terpenes, sterols and polyphenols. These compounds may contribute to nutritional and pharmacological actions. These properties are often related to polyphenols, especially phenolic acids, flavones and proanthocyanidins, which are considered key players in terms of antioxidant, anti-cancer and antimicrobial activities [5]. Four types of gluten-free breads were obtained using different flour ratios: rice flour (RF): tamarind flour (TF): elderflower powder (EP): 99:0:1%; 89:10:1%, 79:20:1%; 69:30:1%. The gluten-free bread samples studied were obtained by the direct method [6-8]. The results obtained regarding the chemical composition of the studied bread samples show the superior nutritional profile of all four bread samples (B10TF, B20TF and B30TF) compared to CB. Physical analysis of the bread samples shows that weight, volume and specific volume of bread increases with TF incorporation, the improvement in the volume of the breads, with different levels of TF, was around 200 – 380cm^3/100 g product. However, the improvement in the bread volume reduced as the TF content increased above 20%. Centralizing the results obtained in terms of sensory analysis of the bread samples, it can be seen that the bread sample with 89% RF:10%TF:1%EP was the most appreciated by the evaluators (appearance – 8.5; texture – 8.4; flavor – 8.1; taste – 8.9; color – 7.9; overall acceptability – 8.3). The results obtained regarding the proximal composition of the of this bread sample was: moisture 26.44%, protein 12.32%, fat 6.22%, carbohydrate 49.23%, fiber 3.14% and 2.65% ash. Based on these results, we can say that this gluten-free bread is healthy, has an important nutritional value, and also the quality is better than wheat flour bread. Therefore, the studied raw materials can be considered a healthy raw material in bakery production.

Keywords: tamarind flour, elderflower powder, high nutritional value, gluten-free bread

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P29

Quality parameters assessment of cakes produced from acorn-rice flour blends

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Obtaining gluten-free products generally requires the optimization of certain technological processes aimed at achieving desirable properties to meet consumer expectations. This is necessary because raw materials often lead to unsatisfactory results in terms of taste, flavor, consistency and nutritional qualities [1-4]. Therefore, various alternative ingredients have recently been explored with the intention of improving the end result. In this context, the identification of new viable raw materials and their efficient use to produce flour-based products would be a suitable option for establishing a sustainable economy [5,6]. Acorn flour are a good source of starch, protein, fat, minerals (such as P, K, Ca, and Mg), unsaturated fatty acids (i.e., oleic acid), and vitamins (mostly A and E) and numerous biologically active compounds (such as tannins, phenolic acids, and flavonoids) [3-5]. This flour possesses anti-inflammatory, mineralizing, anti-anemic, anti-rachitic, antitumor, antioxidant, diuretic, and energizing properties. Moreover, it promotes insulin secretion [3,4]. The aim of this work consisted in the nutritional, physical and sensory evaluation of gluten-

free cakes obtained from rice flour (RF), corn starch (SC) and acorn flour (AF), where RF was replaced by AF in proportion of 5, 15, 25%, using standard laboratory procedures. Four samples of cakes were obtained using different proportions of RF and AF and the same proportion of CS, as follows: 80:15:5%, 70:15:15%, 60:15:25% and 85:15:0% respectively [6-8].

The results obtained regarding the proximate composition of the studied cake samples show the superior nutritional profile (higher ash, fiber and fat content but lower carbohydrate and protein) of all three cake samples with added AF compared to control sample. The ranges of moisture, fat, protein, carbohydrate, crude fiber, and the ash content of cakes were 34.88 -36.16%, 3.56 - 6.41%, 8.90 - 12.07%, 42.80 - 46.03%, 1.38 - 3.97, and 0.80 - 3.04%, respectively. The height, weight, and volume of the cake samples ranged from 3.5 to 4.5 cm, 45 to 56 g, and 620 cm^3 to 1050 cm^3, respectively. Following the sensory analysis of the gluten-free cake samples, it was observed that the cake sample obtained from 70% RF, 15% SC and 15% AF had been given the highest scores on the Hedonic scale (appearance – 8.2; consistency – 8.7; taste - 8.5; flavor - 8.5; color - 8.2; overall acceptability - 8.4). Following the sensory evaluation of cake samples, we can recommend the use of flour mixture 70%RF:15%CS:15%AF.

Based on the results obtained in this study, it can be concluded that the addition of AF in gluten-free cake samples can significantly rise it's nutritional value, alongside improving it's sensorial qualities.

Keywords: acorn flour, gluten-free cake, high nutritional value

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P30

Quality assessment of brioche bread produced from rice flour, teff flour and carob powder blends

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Since the enrichment of gluten-free cereal products is not mandatory there is a need for improving nutritional content of gluten-free diets by incorporating alternative gluten-free grains that are naturally abundant in nutriens. The rising incidence of nutrition diseases and the increasing costs of treating them, has alarmed nutritionists and the authorities. Rediscovering the influence of diet on health, has led to the emergence of functional foods, as foods with preventive and ameliorative effects of various non-communicable chronic conditions [1-3]. Referring to these observations, the purpose of this paper was to optimize high nutritional brioche bread assortments and to improve their sensory, nutritional and technological attributes. In the context of obtaining such products, this study sought alternatives for the partial substitution of rice flour (RF) with teff flour (TF) and carob powder (CP). TF are a good source of crude fiber, has relatively higher protein content with an excellent balance and a complete set of essential amino acids, minerals (such as Fe, P, K, Ca, Zn and Mg) and significant source of bioactive compounds including

polyphenols, especially very rich in flavonoid derivatives. The dietary fiber in TF can help in the process of weight loss, good intestinal transit, detoxification, lowering blood sugar and cholesterol. Due to the bioavailability of iron in TF, it can be considered a very useful ingredient for patients suffering from coeliac disease [4, 5]. CP contained high levels of carbohydrates (45%), appreciable amounts of protein (3%), and low levels of fat (0.6%) [6]. Four samples of brioche bread were obtained using different proportions of RF and TF and the same proportion of CP and corn starch (CS), as follows: 69:10:1:20%, 59:20:1:20%, 49:30:1:20% and 79:0:1:20% respectively [7-9]. The results obtained regarding the proximate composition of the studied brioche bread samples show the superior nutritional profile of all three brioche bread samples with added TF (B10TF, B20TF and B30TF) compared to control sample. Thus, the brioche bread sample with 20% TF presented amounts of 15.53% fat, 5.21% protein, 4.44% ash and 2.95% fiber compared to 17.25% fat, 3.42 % protein, 2.21% ash and 1.87% fiber present in the control sample. In terms of the physical characteristics of brioche bread it can be observed that with the percentage of TF increased, the batter became more viscous and dense, had low line spreads because of less fluidity, and had low specific gravity. The brioche bread were more compact and had reduced heights and volume. Following the sensory analysis of the brioche bread samples, it was observed that the brioche bread sample obtained from 59% RF, 20% TF, 1% CP and 20% SC had been given the highest scores on the Hedonic scale (appearance – 8.5; texture – 8.0; taste – 8.6; flavor – 8.5; general acceptability – 8.4). Our study aims to strengthen the attempt to widen the range of flours and other raw materials used in bakery and pastry making to find alternatives to cereal flour.

Keywords: teff flour, carob powder, brioche bread, high nutritional value

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P31

Design of documentation for "SPECIAL CAKE OANA" - Traditional product: CASE STUDY

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„Special Cake Oana'' is a baked product made with flour, eggs, sugar, butter, sweet cream, chocolate, ingredients that give a pleasant flavor and specific to the place they come from. A large part of the raw materials used in its manufacture are taken from local producers.

Our research is focusing on analyzing if „Special Cake Oana'' can reach the accreditation as a Traditional Romanian Food Product, based on original receipe and local ingredients.

The butter and sweet cream come from the local producer from Bucovăț, Timlactag, which we find under the name of „Floare din Banat'', the fresh eggs come from Carpiniș, Balagri producer.

Every family in the Giroc - Timiș region has been making this cake since ancient times. The recipe is so easy. It is a nutritious food, easy to store and transport, but most importantly, it can be served on the table at family gatherings.

As a traditional Romanian product, the cake can be consumed by the population of all ages at any time of the year, as a dessert but also on holidays that have a special significance for families celebrating name days, as well as larger events such as weddings or baptisms organized in the family and beyond.

Keywords: cake, traditional food product, Giroc, designation of origin, local producers

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P32

Study on the nutritional value of "Homemade chocolate M" compared to industrial chocolate

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Homemade chocolate is often made from more natural and less processed ingredients than industrial chocolate. For example, homemade chocolate may contain dark or milk chocolate, cocoa butter, sugar, milk, vanilla, and other natural flavorings. In contrast, industrial chocolate may contain chemical additives, preservatives and emulsifiers.

Our study is focusing on comparing the two types of chocolates. Homemade chocolate often has a more sandy and grainy texture than industrial. This is because homemade chocolate is often made with a mixture of melted chocolate and cocoa powder, resulting in a less uniform texture. Instead, industrial chocolate is made with melted chocolate and other ingredients that give it a smoother and more uniform texture.

Based on our research and testers, we can conclude that homemade chocolate often tastes richer and more complex than industrial chocolate, thanks to more natural and less processed ingredients. In addition,

homemade chocolate can be flavored with natural flavors, such as mint essence or vanilla, to give it a richer and more complex taste.

Keywords: chocolate, homemade, cocoa butter, nutritional value

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P33

Study on the nutritional value of traditional sausages compared to industrial sausages

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Meat is the muscular part of the body of animals and humans. The term has various uses and meanings depending on the context.

Sausages are an indispensable product on Romanians' tables during the winter holidays. There are since ancient times a lot of recipes of traditional homemade sausages, prepared according to preferences (color, flavor, texture), climate, intolerances, customs, religion, etc.

The origin of the word sausage comes from the Latin "salsus" which translates as salted or canned. In times gone by, people chose this form of cooking meat by salting because they did not know the phenomenon of refrigeration, so making sausages was one way to solve this.

Our research is based on comparison between the two type of sausages, homemade and industrial ones.

Sausage is a product created in a very simple way, composed of a piece of animal intestine that is filled with minced meat, subsequently smoked for

longer durability or consumed raw and subjected to various ways of preparation (fried, boiled, etc.)

Homemade sausages are usually prepared with pork casings that are cleaned by squeezing the contents and removing the fat, and then by washing with water and vinegar, putting them to dry to prepare their filling with minced and seasoned meat.

Keywords: meat, sausages, homemade, nutritional value, frying, boiling

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P34

Obtaining and characterizing soy yogurt with the addition of avocado paste

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Vegetable products like dairy foods (cream cheese, yogurt, milk) containing avocado pulp in their manufacturing recipe are currently not available on domestic market. The goal of this paper was to develop a soy milk-based vegetable yogurt incorporated with avocado that can be acceptable in terms of appearance and quality to consumers. Soy yogurt is a plant product, made from soy milk, which provides an alternative to cow's milk yogurt. Soy yogurt is consumed for dietary purposes, by people who are lactose intolerant, people with allergies to products containing lactose, or by people who follow a vegan diet. Soy yogurt provides a good source of protein, vitamins and minerals and can be a replacement for dairy-based yogurts in various culinary recipes and dishes [1, 2].

Avocado (*Persea americana Mill.)* is defined as a fruit that is a large berry with a single seed [3]. Avocado pulp consists of 72.3% water, 1.96% protein, 15.4% fat and 8.64% carbohydrates [4]. Avocados contain a high proportion of monounsaturated fats with oleic acid (18:1) and a small amount of saturated fats and polyunsaturated fats in its edible portion [3].

Avocado consumption high in monounsaturated fats might provide some positive health effects on the lipid profile by increasing levels of good blood cholesterol such as high-density lipoprotein (HDL), reducing levels of bad cholesterol such as low-density lipoprotein (LDL), and reducing serum lipid peroxidation, thereby promoting cardiovascular health [5, 6]. Adding avocados to soy milk can be a complicated challenge because the pulp of avocado is very perishable, with a high metabolic rate, giving this fruit a short shelf-life period. Soy milk was used to prepare soy yogurt, a drink of Chinese origin made from soybeans. It was obtained in the laboratory by soaking soybeans in water for 8-12 hours, then grinding the hydrated beans with a small amount of water and separating the milk from the coarse material by filtration. For making four servings of avocado-fortified soy yogurt (each of 1000 mL) the following amounts of ingredients were used: 4300 ml pasteurized soy milk, 50 g sugar, 100 g avocado paste, 2.5 g freeze-dried yogurt starter culture (1:1 mixture of *Lactobacillus bulgaricus* and *Streptococcus thermophillus*). In pasteurized and cooled soymilk at 48^0 C, sugar and avocado paste were added under continuous stirring. In order for the avocado paste to blend well with soymilk, it is advisable to mix it gradually, with small amounts of milk, before being fully integrated. Shelf life of the product is 10-12 days, under refrigerated storage conditions, without opening the package. After opening the package, it is preferable to consume yogurt within 3 days. The sensory characteristics of the soy-yogurt samples (appearance, consistency, colour, smell and taste) analysed by a group of 6 tasters recorded scores ranging from 5.87 to 7.07, all above the mean score of 5 for the 9-points hedonic scale used. Thus, all the four yoghurt samples were acceptable to the consumers. The pH value of the analysed samples varied from 6.2 to

3.4 during the 10 days of storage. For further studies, we suggest improving the manufacturing recipe by adding some food additives (sweeteners and antioxidants) to mitigate the aftertaste of the soymilk and the browning reactions of the avocado pulp.

Keywords: soy yogurt, avocado, sensory analysis, phisico-chemical analysis

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Fingerprint concept in context of Food Safety and Biosecurity

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The consumer has right to information and knowledge of raw, structural components of food matrix (proteins, carbohydrates, lipids, mineral elements, vitamins, water, enzymes, etc.), but also of auxiliary ones (dyes, sweeteners, preservatives, additive with various functions, food biocides, etc.), which compete in the sensory and nutritional definition of food.

Food fingerprint identification is a laborious process of validating the origin of food, raw material, constrained also by peculiarities of technological manufacturing process. As contributing factors to food safety and biosecurity we can list: soil; metabolism (a wide range of chemical compounds/individuals, of different concentration and solubility) [1]; physicochemical evaluation, sensory interpretation (combined physical/psychological response (aroma, taste, texture, temperature, conditions, appearance, etc.)), having as "*standard*" memory previous meals; microbiota fingerprint (microbial species identified on food are

assumed to be specific to the geographical area of origin) [2]. Tools for spatio-temporal identification of food origin. Accelerated growth of food supply and mobility, an effect of globalisation, is a main food security and biosecurity issue [3]. Specialized studies confirm that causal determinants of fingerprinting are geographical and genetic origin [4, 5, 6]. Biosecurity problems can be solved by "*elementary*" fingerprinting (*chemical individuals*), regarding discrimination of geographical origin, organic/conventional production [7]. Indicators for assessing the impact of agricultural practices, processing and/or storage on chemical/sensory composition, identification of new bioactive compounds, food *fingerprint* generators. In response, new approaches from perspective of molecular biology, enzymology (e.g. ***genomics***, ***proteomics***, ***metabolomics*** ((*fingerprinting markers*))), "*come to rescue*" and *complement* classical *fingerprinting* methodologies for *verifying claims* about the origin and nutritional availability of a food. In the last decade, proteomics (= analysis/identification of proteins as fingerprint markers, from a defined biological system) has been applied to various research areas in area of food technologies [8, 9]. Since proteins can be used as markers for a wide range of food attributes, "*signalling point transformations*" induced by processing operations, they can be additional evidence of food safety/biosecurity.

Statement that provides an overview that meets the needs of process management, "*correcting*" disadvantages and challenges generated by fingerprinting and evaluating food attributes. Currently, although international/national regulatory institutions have established rules on food labeling, it is almost impossible *to identify and guarantee the true origin of structural components* of a food, especially those that are advanced

processed. Development of new *bioinformatics tools* for fingerprinting the food matrix will play a decisive role in ensuring food safety and biosecurity from a consumption perspective.

Keywords: fingerprinting, biosecurity, fingerprinting markers.

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Tomatoes - food as medicine

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Tomatoes (*Solanum lycopersicum* L.) are a significant vegetable crop, second only to potatoes, both in terms of cultivation and consumption. They are highly valued for their unique taste and aroma, providing valuable nutrients to the body. Tomatoes are rich in vitamins, minerals, and antioxidants, with lycopene being a particularly valuable component known for its anti-cancer and antioxidant properties. Harvesting tomatoes at a specific stage of ripeness is crucial for enabling essential biochemical processes.

The chemical composition of tomatoes is influenced by various factors, including weather conditions, growing environment, tomato type, and harvesting and storage methods. In terms of external appearance, vibrant

colors and uniform skin are signs of quality, while the absence of blemishes and bruises contributes to selecting healthy and fresh tomatoes.

Tomatoes have varying water content, and dry matter represents the total non-volatile components of organic and mineral nature. Organic matter comprises main groups of chemical substances such as carbohydrates, pectic substances, acids, proteins, lipids, enzymes, vitamins, phenolic substances, pigments, antibiotics, and phytoncides.

In conclusion, tomatoes not only add exceptional taste and aroma to the diet but also serve as a valuable source of nutrients. Their consumption can bring significant health benefits, with studies indicating that 300 ml of natural tomato juice per day can cover the body's lycopene needs, also providing significant percentages of daily requirements for vitamins A and C, iron, and calcium."

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P37

The nutritional and sensory evaluation of elderflowers (*Sambucus nigra*)

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The purpose of this study was to develop a new recipe to obtain a special innovative sweet product (cake) using elderflowers, to develop the manufacturing process, technological stages, and sensorial and nutritional analysis of the final product. Our product was prepared at home and used various products obtained from elderflowers (syrup, ..).

The elder (Sambucus nigra) is a shrub native to Europe and North America. Elderberry is known for its edible and medicinal properties and has been used for centuries in traditional medicine. Elderflowers are well known for the health benefits of their consumption, such as: strengthening the immune system, relieving cold and flu symptoms due to the content of flavonoids and other antioxidants that directly help protect the skin, improving digestion due to the mild laxative effect, beneficial effect on blood

pressure, regulates cholesterol levels, etc.Following the research that have been undertaken in this work, the obtained product (cake) with fruit) can be included in the category of secure products of consuming.

From an organoleptic point of view, these sweet product were in line with the rules previously established.

This work demonstrate that this prototype can be considered a food variant due to its high nutritious properties and to its distinguished taste too.

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Phytobiochemical valorization of matcha powder used as an additive in homemade chocolate

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The purpose of this study was to develop a new recipe to obtain a special innovative sweet product (homemade chocolateusing matcha powder), to develop the manufacturing process, technological stages, and sensorial and nutritional analysis of the final product. Our product, homemade chocolate was prepared using using matcha powder.

Chocolate is a beloved food around the world, so we created matcha chocolate "Matchissimo": a unique combination of matcha, coconut milk powder, agave nectar and cocoa butter, matcha chocolate is a fine chocolate full of colour.

This product is presented in the form of colored pralines filled with matcha cream and bitter chocolate cream. Matcha is a ground green tea usually associated with traditional Japanese rituals. At the same time, matcha is an important source of antioxidants, amino acids and caffeine. It is also a very versatile culinary ingredient, with a specific taste, very appreciated by many people. And because not everyone is interested in the traditional aspects of consumption, but most of us want a healthier lifestyle and a powerful but natural energizer... The smoothness and sweetness of the chocolate delicately complements the freshness and vegetal taste of the matcha cream. A great benefit of the product is that it can be consumed even during the fasting period but also by vegans and vegetarians. Vegetable products are also more easily tolerated by the digestive system.Another great benefit of this innovative Macisimo product based on matcha powder is that it comes with an intake of biologically active compounds with a strong antioxidant character, important for health and health maintenance.

Following the research that have been undertaken in this work, the obtained product (cake) with fruit) can be included in the category of secure products of consuming.

From an organoleptic point of view, these sweet product were in line with the rules previously established.

This work demonstrate that this prototype can be considered a food variant due to its high nutritious properties and to its distinguished taste too.

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P39

Sensory appreciation of some assortments of chicken liver pate

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The main purpose of this paper was the sensory evaluation of some assortments of liver pate, respectively homemade chicken liver pate with added mushrooms (HP), compared with two kinds of commercial pâtés (SP and BP).

As consumers become more health conscious, demand for meat products low in saturated fat is steadily increasing (Marchetti et. all., 2014). The World Health Organization recommends reducing consumption of saturated and trans fatty acids and encourages people to switch to a diet higher in polyunsaturated fats (WHO, 2013).

Mushrooms are medicinal foods with high nutritional value recognized by medical professions around the world. They contain eight important amino acids, polyunsaturated fatty acids and small amounts of saturated fatty acids, and have higher nutritional values compared to fish or beef (Fekadu, 2015).

For sensory analysis, the method by comparison with unit score scales [8-STAS 12656-88] was used. According to this method, each characteristic is evaluated by comparing with scoring scales from 0...5 points, ascending depending on the degree of satisfaction, and obtaining the average score given by the group of tasters. The sensory assessment of the samples was performed by 10 people, ordinary consumers, of different ages. Each evaluator gave ratings for appearance (color), smell, consistency and taste.

The individual assessments were centralized and processed; the obtained results were presented in Figure 1.

Based on these data the following were established: the differences between the three analyzed products are relatively large, the range of variation being between 3.32 and 4.52; the best result from sensory evaluation was obtained by the PH sample (homemade chicken pate with mushrooms), which had a total score of 45.25 and an average of 4.52 - it scored best for all characteristics (appearance, smell, consistency and taste); the second place was occupied by BP with an overall score of 35.5 - it obtained good scores, being scored slightly lower, compared to HP, for all sensory characteristics; the third place went to SP, which obtained the lowest total score, namely 33.25, being degraded in taste and appearance.

Key words: *liver, health, fatty acids*

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P40

Artisanal raspberry jam with bananas, lemon and basil flavor

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Jam is a very concentrated source of nutrition when made with fully ripe fruit, as antioxidants tend to increase as the fruit is riper, however, ripe fruit also has a higher concentration of sugar, so more calories.

Raspberry is one of the most delicious berries, which has a lot of benefits for the health and beauty of the body, it is popular due to the high content of vitamins, calcium, iron, potassium, magnesium, salicylic acid, it is easy to plant and does not need special growing conditions.

The vitamins and chemical compounds in the composition of raspberries contribute to the daily intake required by the human body, but at the same time they help the metabolism to function properly.

Bananas are extremely healthy and delicious, they contain several essential nutrients and offer benefits for digestion, heart health and weight loss.

The objective of this work was to obtain an artisanal product - raspberry jam with banana, lemon and basil flavor and to analyze it from a sensory point of view.

The own contributions to the present diploma project signaled the following aspects of the three types of sweetness analyzed:

- three different varieties of sweetness were obtained and evaluated from a sensory point of view:
  - assortment 1: raspberry jam;
  - assortment 2: raspberry jam with bananas;
  - assortment 3: raspberry jam with bananas and basil flavor.
- the three varieties of jam are characterized by special organoleptic properties, due to the raw and auxiliary materials used in their composition.
- following the evaluation of the sensory properties, it was observed that the version of raspberry jam with bananas and basil flavor was the most appreciated in terms of sensory characteristics: taste, color, appearance and smell, consistency.

Key words: jam, raspberry, banana, lemon, basil.

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P41

Bread with chia and goji seeds: Implementation of the HACCP Plan

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Bread is a nutritionally complex food, located at the base of the food pyramid, which provides the necessary energy for the brain and nervous system, helps to transform food into energy and contributes to the regulation of intestinal functions, which is why it must be included in the diet daily to maintain a healthy lifestyle.

Bread with chia and goji seeds is an assortment in which, in addition to the raw materials used to make the bread, chia and goji seeds are added.

Chia is an oleaginous seed, composed of fats, carbohydrates, dietary fiber, protein, vitamins, minerals and antioxidants.

Goji berries are the fruits with the strongest antioxidant effect among all food products in the world. Goji gives a special flavor to the bread core and also lends it its pleasant color.

To implement the HACCP plan. and determining the critical control points the flow chart was made.

The risk analysis was carried out for each technological phase determining the types of risk and the class of risk, the types of risk and the way of control were also described.

When applying the HACCP plan two critical control points were found, they can be found at the screening and baking technological operation.

Bread with chia and goji seeds is a very healthy bread, being an important source of proteins, essential fatty acids, dietary fiber, vitamins, antioxidants, iron, phosphorus, potassium, zinc and other minerals.

Keywords: bread, bread with chia and goji seeds, chia, goji

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P42

Fetească Regală white wine - Implementation of the HACCP plan

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Winemaking is the process of processing grapes with the aim of obtaining wines as well as wine-based products.

The literature study synthesized data and information regarding different types of wines, as well as their usefulness on the human body, due to its beneficial properties.

White wine contains numerous vitamins and minerals, including B1, B2, B5 and B6, folic acid, B12, vitamin C, potassium, calcium and magnesium. Thus, a glass of white wine consumed daily supports the immune system, protects us from viruses, favors the secretion of gastric juice and can be an effective sleep aid, thanks to its calming effect.

White wine helps to prevent many diseases, such as heart diseases, also this drink is the one that protects us from diseases of the nervous system, such as Alzheimer's. Thus, we should include wine in our daily diet, but in

moderate quantities, excessive alcohol consumption being very harmful to the body.

The results of sensory analyzes of wine samples using the scoring scale method highlighted the following main conclusions:

- The sensory analysis of the wine samples allowed the evaluation of consumer acceptability for such drinks, the best scored being the "Ary" type wine;
- The most important characteristics for establishing the acceptability of wine samples were: smell, color, taste and appearance;
- The evaluated sensory characteristics showed that the dry white wine "Ary" Fetească Regală was highly appreciated from the point of view of smell and color.

Keywords: wine, dry white wine, Feteasca Regală wine

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Obtaining and nutritional evaluation of acacia honey with nuts

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Bee honey is a complex natural product resulting from the floral nectar of plants and its enrichment by bees (Apis mellifera L) with their own substances, through the action of the juice secreted by their glands.

Bee honey has been present in human nutrition since ancient times, having a superior nutritional value.aqewd.

Acacia honey preserves the fine aroma and fragrance of acacia flowers. Contains antioxidants, enzymes, vitamins, minerals and healthy carbohydrates. Honey is a medicinal food, a valuable remedy in apitherapy and a natural sweetener in healthy eating.

The walnut is an important supplier of minerals such as sodium, potassium, calcium, magnesium, chlorine, phosphorus, sulfur, iron, copper, zinc and iodine, it contains vitamins C, B1, B2, B5, and last but not least, carotene. it is nourishing, revitalizing and has a high therapeutic value.

The nutritional value of honey lies primarily in its richness in sugars (70-80%), from this point of view, it is an energy food par excellence. By

combining the energetic properties of acacia honey with the active substances contained in nuts, a pleasant product with high energy value and special therapeutic properties is obtained.

Finally, it can be stated that due to its special nutritional and sensorial properties, acacia honey with nuts is recommended not only for consumption as such, but also as an ingredient to obtain a varied range of desserts, as well as to treat various ailments.

Keywords: honey, acacia honey, nut honey

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P44

Seafood waste and innovative circular economy solutions

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Sustainable development is a global goal that involves an interdisciplinary approach to addressing current and future challenges related to the environment, climate change, economic constraints and resource efficiency. Renewable and biodegradable biopolymers from seafood waste are recognized as promising alternatives for developing sustainable food packaging materials and increasing resource efficiency. According to the ONU and FAO, it was reported that the global production of seafood (fish, molluscs, crustaceans and other aquatic animals) reached almost 175 million tons in 2017, of which 25% ended up being wasted. In particular, shellfish comprise about 40% meat, and the remaining 60% is inedible, accumulating large amounts of shellfish waste. The full use of seafood waste to produce bioactive compounds and functional ingredients for application in the food industry would be a method for the sustainable use of resources and the main objective of a circular economy. Thus, researchers have demonstrated that fish gelatin and chitosan extracted from mulberry waste have antioxidant and antimicrobial properties. Therefore, they could be considered suitable alternatives to plastic products for food packaging to reduce food spoilage, post-processing operations and to extend shelf life. The European Commission funded the N-chitopack project which specifically aims to produce antimicrobial and biodegradable

bioplastics for food packaging using chitin nanofibres. Recently, the project produced three different materials for various applications: coffee capsules, food bags and packaging films. the results of the n-chitopack project will reduce waste in the seafood and packaging industry and improve economic and environmental impact. By-products and waste from fish processing, such as skins, heads, guts, bones, scales and fins - fish gelatin, could be extracted from fish skin and further processed into edible films and coatings for food applications. of fish are essential sources of specific enzymes, such as pepsin, pancreatin, pancreatic curd, collagenase and lipase. Minced fish meat could be hydrolyzed to produce bioactive peptides. due to the high calcium content, fish bones can be processed into fish bone powder for calcium supplementation as a new additive in food processing. A fish head is rich in lecithin and polyunsaturated fatty acids, and could improve memory, sleep and reduce cardiovascular disease. Fish oil can be extracted to produce fish oil capsules for health care product development. Fish processing waste and by-products could be manufactured and processed into fish sauce, fish paste and feed, which would effectively improve the use of by-products and minimize wastage of aquatic resources. Economically low cost component materials and excellent moisture exchange properties and low oxygen permeability and higher ductility, tensile strength and flexibility.

Related to consumer health: natural biopolymers with favorable quality safety measures and reducing consumer concerns about potential allergenicity ecological: saves energy and resources, reduces waste generation and prevents littering.

Key words: seafood waste and innovative solutions

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Fast and cheap evaluation of the adulteration of non-conventional seed oils by classical vegetable oils using FTIR-PCA technique

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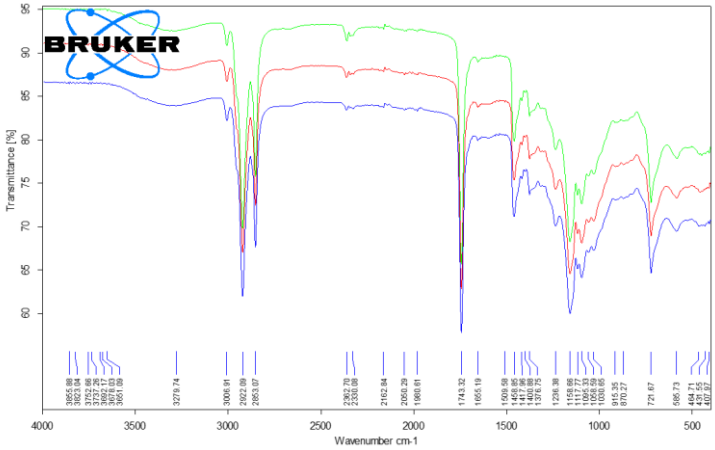
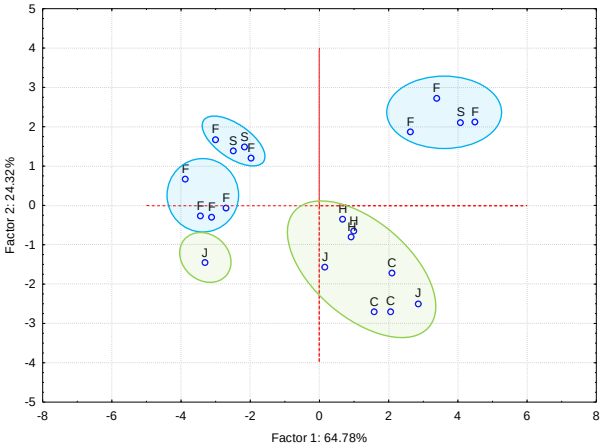
Fourier-transform infrared spectroscopy (FTIR) is a fast, cheap and non-destructive method useful for analysis of food samples, including edible oils [1-4]. Edible non-conventional seed oils generally contain high amounts of valuable fatty acids (as glycerides) such as omega-3 α-linolenic acid (ALA) or oleic acid. These non-conventional oils are sometimes subjected to adulteration with cheaper classical vegetable oils.

The goal of the study was the evaluation of the adulteration of hazelnut (*Corylus avellana* L., code "Ca"), walnut (*Juglans regia* L., code "Jr") or black sesame seed (*Sesamum indicum* L., code "Si") oils by sunflower or

palm oils (*Helianthus annuus* L. and *Elaeis guineensis* Jacq., codes "Ha" and "Eg", respectively) using the fast and cheap FTIR-PCA (principal component analysis) technique [2,4-9]. The raw non-conventional and classical edible oils, as well as their mixtures at 60:40 volume ratio were analyzed by FTIR (Figure 1a) and subjected to PCA using both wavenumber and intensity of the FTIR characteristic bands. The adulterated oils (generally coded as "F") were especially located at the upper half of the PC_2 vs. PC_1 scores plot if the FTIR band intensities were used for discrimination (Figure 1b; "C" – hazelnut oil, "J" – walnut oil, "S" – black sesame seed oil, and "H" – sunflower oil)..



(a)



(b)

Figure 1. Representative FTIR spectra for the adulterated non-conventional seed oils with 40% sunflower oil (a) and the PC_2 vs. PC_1 scores plot for the adulterated non-conventional seed oils ("F"), as well as non-conventional ("C", "J" and "S") and classical oil, "H" (b)

The intensities of the bands corresponding to the asymmetric and symmetric stretching vibrations of the CH bonds in the hydrocarbon chain of the FA moiety (2922 and 2852 cm^{-1}), as well as the intensity of the stretching vibration of the ester C=O bond in glycerides (at 1742 cm^{-1}) were the most important variables for the discrimination of the adulterated oils along the PC_2 axis. This approach can be useful for the detection of the

adulterated seed oils, which are obtained from non-conventional vegetable sources and are more expensive

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Comparative analysis of two food cultures (Romanian and American) – A case study of dietary habits and their impact on health

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This study focuses on the crucial importance of a healthy diet and a balanced lifestyle in the context of both physical and mental well-being. It highlights the significant impact that dietary choices have on preventing serious diseases such as obesity, heart diseases, and diabetes, emphasizing the need for wise dietary decisions and the adoption of healthy eating habits from a young age.

The in-depth exploration of Romanian and American food cultures brings an innovative contribution, discussing the diversity of cultural perspectives in relation to health and well-being. In a world affected by globalization,

urbanization, and social changes, dietary habits are significantly shaped, thereby increasing the risk of non-communicable diseases.

The motivation for this work stems from the recognition of current global health challenges, with the alarming rise of chronic diseases in societies worldwide. By focusing on two distinct demographics, Romanians and Americans, the study aims to discover unique factors influencing health and dietary habits in each community. The comparative analysis of these food cultures provides insights into fundamental causes and potential solutions for existing health inequalities.

Additionally, the study offers a perspective on the evolving definition of a healthy diet and examines the role of essential nutrients in maintaining organism homeostasis. It underscores that diets promoting health, such as the Mediterranean diet or dietary interventions for preventing hypertension, have a positive impact on health compared to traditional Western diets.

Through a comprehensive comparative analysis, this study aims to contribute to existing knowledge in the fields of nutrition and health, providing new insights and valuable evidence to support future research efforts. The ultimate goal is to enhance the complex understanding of food culture and its impact on health, facilitating evidence-based interventions and informed decision-making in public health.

Key words: cultural dietary patterns, nutrition, global health disparities, comparative food cultures, evidence-based health interventions

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Obtaining and characterizing an artisan assortment of keto cookies

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Nutrition has a profound impact on human health, starting from the early days of intrauterine development, influencing the body's condition and metabolic processes. Food serves as the primary link between the human body and the surrounding environment, yet often there are imbalances between our needs and food intake due to external factors. In modern society, there is a growing concern for proper and balanced nutrition.

The quality and safety of food depend on the raw and auxiliary materials used, as technological and storage processes can affect the nutritional value and hygiene of products. Functional foods are becoming increasingly important in the context of the body's exposure to multiple aggressions, with the potential to maintain the body's homeostasis.

Currently, there are trends of returning to organic and ecological nutrition, forsaking the use of synthetic chemicals. In this context, innovative food products are being developed, such as cookies, that can correct nutritional deficiencies and promote health.

Cookies with ingredients like lupin flour, almond flour, Monk Fruit sweetener, organic cocoa, cinnamon, baking powder, non-iodized salt, pure vanilla paste from Madagascar, cold-pressed coconut oil, and eggs offer healthy options in the snack market. These ingredients not only provide exceptional flavours but also valuable nutritional benefits, including high-quality proteins, bioactive compounds, and antioxidants. The development of these food products represents an important step in promoting a balanced and healthy diet.

Key words: *nutrition, health, functional food, cookies, lupin flour, bioactive compounds, antioxidants*

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