

Multidisciplinary Conference on Sustainable Development

Section: Food Chemistry, Engineering & Technology



2022

MULTIDISCIPLINARY
CONFERENCE ON
SUSTAINABLE
DEVELOPMENT



**BANAT'S UNIVERSITY OF AGRICULTURAL SCIENCES
AND VETERINARY MEDICINE
"KING MICHAEL I OF ROMANIA" FROM TIMISOARA**

2022

**MULTIDISCIPLINARY CONFERENCE ON
SUSTAINABLE DEVELOPMENT**

BOOK OF ABSTRACT



Section: Food Chemistry, Engineering & Technology

26 – 27 May 2022, Timisoara

ISSN 2821 – 4293
ISSN – L 2821 – 4293



Academy of Agricultural and Forestry
Sciences "Gheorghe Ionescu-Sișești"
Timisoara Branch



Romanian Association of Food Industry
Specialists
Timisoara Branch



Romanian Chemistry Society
Timisoara Branch

Multidisciplinary Conference on Sustainable Development

Section: Food Chemistry, Engineering & Technology

USAMVBT is inviting you to a scheduled Zoom meeting.

Topic: Multidisciplinary Conference on Sustainable Development

Time: May 26, 2022 11:00 AM Bucharest

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USAMVBT is inviting you to a scheduled Zoom meeting.

Topic: Food Chemistry, Engineering & Technology

Time: May 26, 2022 02:30 PM Bucharest

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General Conferences Programme

26 May 2022 (Thursday)

Registration

| | |
|-------------------------------------|---|
| 11 ⁰⁰ – 11 ¹⁵ | Opening of the Conference |
| 11 ¹⁵ – 11 ³⁰ | Plenary Lecture PL ₁ |
| 11 ³⁰ – 11 ⁴⁵ | Plenary Lecture PL ₂ |
| 11 ⁴⁵ – 13 ⁰⁰ | Awarding the title of “ DOCTOR HONORIS CAUSA ” |

*”Iulian Drăcea” Auditorium
Banat’s University of Agricultural Sciences and Veterinary Medicine
“King Michael I of Romania” from Timișoara*

13⁰⁰ – 14³⁰ **Lunch (Banat’s University Restaurant)**

Section: Agriculture - Trends in European Agriculture Development – hybrid

| | |
|-------------------------------------|-----------------------------------|
| 14 ³⁰ – 14 ⁴⁰ | Opening of the Conference section |
| 14 ⁴⁰ – 16 ¹⁵ | Oral communications |
| 16 ¹⁵ – 16 ³⁰ | Concluding Remarks |

*Faculty of Agriculture
Banat’s University of Agricultural Sciences and Veterinary Medicine
“King Michael I of Romania” from Timișoara*

Section: Agricultural management - Management of Sustainable Rural Development – hybrid

| | |
|-------------------------------------|-----------------------------------|
| 14 ³⁰ – 14 ⁴⁰ | Opening of the Conference section |
| 14 ⁴⁰ – 16 ¹⁵ | Oral communications |
| 16 ¹⁵ – 16 ³⁰ | Concluding Remarks |

*Faculty of Management and Rural Tourism
Banat’s University of Agricultural Sciences and Veterinary Medicine
“King Michael I of Romania” from Timișoara*

Section: Food Engineering - Food Chemistry, Engineering & Technology – hybrid

| | |
|-------------------------------------|-----------------------------------|
| 14 ³⁰ – 14 ⁴⁰ | Opening of the Conference section |
| 14 ⁴⁰ – 18 ⁰⁰ | Oral communications |
| 18 ⁰⁰ – 18 ¹⁵ | Concluding Remarks |

*Conference room
Banat’s University of Agricultural Sciences and Veterinary Medicine
“King Michael I of Romania” from Timișoara*

Multidisciplinary Conference on Sustainable Development

Section: Food Chemistry, Engineering & Technology

Section: Animal Husbandry and Biotechnology - Animal Resource Bioengineering – hybrid

| | |
|-------------------------------------|-----------------------------------|
| 14 ³⁰ – 14 ⁴⁰ | Opening of the Conference section |
| 14 ⁴⁰ – 16 ¹⁵ | Oral communications |
| 16 ¹⁵ – 16 ³⁰ | Concluding Remarks |

*"Iulian Drăcea" Auditorium
Banat's University of Agricultural Sciences and Veterinary Medicine
"King Michael I of Romania" from Timișoara*

Section: Horticulture and Forestry - Horticulture, Forestry and Biotechnology – hybrid

| | |
|-------------------------------------|-----------------------------------|
| 14 ³⁰ – 14 ⁴⁰ | Opening of the Conference section |
| 14 ⁴⁰ – 16 ¹⁵ | Oral communications |
| 16 ¹⁵ – 16 ³⁰ | Concluding Remarks |

*Faculty of Horticulture and Forestry
Banat's University of Agricultural Sciences and Veterinary Medicine
"King Michael I of Romania" from Timișoara*

Section: Veterinary Medicine - Animal Breeding and Pathology Today – hybrid

| | |
|-------------------------------------|-----------------------------------|
| 14 ³⁰ – 14 ⁴⁰ | Opening of the Conference section |
| 14 ⁴⁰ – 16 ¹⁵ | Oral communications |
| 16 ¹⁵ – 16 ³⁰ | Concluding Remarks |

*Faculty of Veterinary Medicine
Banat's University of Agricultural Sciences and Veterinary Medicine
"King Michael I of Romania" from Timișoara*

19³⁰ – 22⁰⁰ **Conference Dinner**

*"COMPLEX FLONTA" Restaurant
Trandafirului 200, Giroc, Timiș county, RO
(Bus transport in front of the Rectorate –
close to the "Infinite in a Hand" sculpture)*

27 May 2022 (Friday)

10⁰⁰ – 16⁰⁰ **Paper presentation on sections**

Scientific Programme

1st Day – 26th of May, 2022 (Thursday)

*"Iulian Drăcea" Auditorium
Banat's University of Agricultural Sciences and Veterinary Medicine
"King Michael I of Romania" from Timișoara*

| | |
|-------------------------------------|---|
| 10 ³⁰ – 11 ⁰⁰ | Registration in the Rectorate hall |
| 11 ⁰⁰ – 11 ¹⁰ | Welcome speech Cosmin Alin Popescu , Rector of the Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timișoara, |
| 11 ¹⁰ – 11 ¹⁵ | Conference opening Isidora Radulov , Vicerector of the Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timișoara, |
| 11 ¹⁵ – 11 ³⁵ | PL₁: Lorena Lloret Nadal , Integrative Veterinary Chinese Medicine Founding member and director of the Chi Institute of Europe |
| 11 ³⁵ – 11 ⁵⁵ | PL₂: Rui Costa , Use of Black Soldier fly to convert food waste into feed Secretary General of the ISEKI Food Association, President of European Alliance of Subject-Specific and Professional Accreditation and Quality Assurance |
| 11 ⁵⁵ – 12 ⁰⁰ | Presentation of conference programme |
| 12 ⁰⁰ – 13 ⁰⁰ | Doctor Honoris Causa award: Prof. dr. Ioan Jelev Vice-President of Romanian Academy of Agricultural Sciences and Forestry |
| 13 ⁰⁰ – 14 ³⁰ | Lunch (Banat's University Restaurant) |
| 14 ³⁰ – 18 ⁰⁰ | Section: Food Chemistry, Engineering & Technology |

*Conference Room
Banat's University of Agricultural Sciences and Veterinary Medicine
"King Michael I of Romania" from Timișoara*

| | |
|-------------------------------------|---|
| 19 ³⁰ – 22 ⁰⁰ | Conference Dinner <i>"COMPLEX FLONTA" Restaurant Trandafirului 200, Giroc, Timiș county, RO</i> |
|-------------------------------------|---|

Section: Food Chemistry, Engineering & Technology

*Conference Room
Banat's University of Agricultural Sciences and Veterinary Medicine
"King Michael I of Romania" from Timișoara
1st Day – 26th of May, 2022 (Thursday)*



Registration

14³⁰ – 14⁴⁰

Opening of the Conference (Section: *Food Chemistry, Engineering & Technology*)
Adrian Riviș, *Dean of the Faculty of Food Engineering, Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timișoara*

Nicoleta Gabriela Hădărugă, *Vice-dean of the Faculty of Food Engineering, Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timișoara*

**Chaired by: Florina Adriana Radu
Claudia Isabela Oprinescu**

*Conference Room
Banat's University of Agricultural Sciences and Veterinary Medicine
"King Michael I of Romania" from Timișoara*

14⁴⁰ – 15²⁰

PL₁: The advent of vanadium chemistry in human metabolism
Athanasios Salifoglou - *Laboratory of Inorganic Chemistry and Advanced Materials, School of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki 54124, Greece*

15²⁰ – 15³⁰

IL₁: Encapsulation of pharmaceuticals in polymeric matrix microparticles for the treatment of Chronic Obstructive Pulmonary Disease
Athanasios Tsimpris, *Sevasti Matsia, Nikos Boukos, Elias Sakellis, Athanasios Salifoglou - Laboratory of Inorganic Chemistry and Advanced Materials, School of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki 54124, Greece*

15³⁰ – 15⁴⁰

IL₂: Natural oil encapsulation into inorganic silica nanoparticles
Cleopatra Karakosta, *Sevasti Matsia, Athanasios Salifoglou - Laboratory of Inorganic Chemistry and Advanced Materials, School of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki 54124, Greece*

Multidisciplinary Conference on Sustainable Development

Section: Food Chemistry, Engineering & Technology

- 15⁴⁰ – 15⁵⁰ **IL₃**: Thin biopolymer film construction for food safety applications
Konstantinos Rogkotis, Sevasti Matsia, Athanasios Salifoglou - *Laboratory of Inorganic Chemistry and Advanced Materials, School of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki 54124, Greece*
- 15⁵⁰ – 16⁰⁰ **IL₄**: Development of analytical tools package for the characterization of low and high nitrogen algal cake
Marios Maroulis, Sevasti Matsia, Maria Perikli, Oana Cristina Parvulescu, Violeta Alexandra Ion, Anne-Kristin Løes, Joshua Cabell, Athanasios Salifoglou - *Laboratory of Inorganic Chemistry and Advanced Materials, School of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki 54124, Greece; Modern Analytics Testing Laboratories, Thermi 57500, Thessaloniki, Greece*
- 16⁰⁰ – 16¹⁰ **IL₅**: The chemistry of Pb with hydroxycarboxylic acids identifies soluble species linked to its toxicity determination
Maria Perikli, Marios Maroulis, Sevasti Matsia, Athanasios Salifoglou - *Laboratory of Inorganic Chemistry and Advanced Materials, School of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki 54124, Greece*
- 16¹⁰ – 16²⁰ **IL₆**: Flavonoid-based hybrid materials as metallodrugs in disease administration
Sevasti Matsia, Antonios Hatzidimitriou, Athanasios Salifoglou - *Laboratory of Inorganic Chemistry and Advanced Materials, School of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki 54124, Greece*
- 16²⁰ – 16³⁰ **IL₇**: 3D bioprinting: Manufacture of cell loaded hydrogel scaffolds
Vasileia Karakosta, Konstandinos Rogkotis, Sevasti Matsia, Athanasios Salifoglou - *Laboratory of Inorganic Chemistry and Advanced Materials, School of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki 54124, Greece*
- 16³⁰ – 16⁴⁰ **OC₁**: The content of bioactive compounds and antimicrobial activity of the *Plantago Lanceolata* herba
Maria-Ioana Socaciu, Melinda Fogarasi, Cristina Anamaria Semeniuc, Sonia Ancuța Socaci, Mihaela Ancuța Rotar, Vlad Mureșan, Oana Lelia Pop, Dan Cristian Vodnar - *Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania*
- 16⁴⁰ – 16⁵⁰ **OC₂**: Emulsion oleogels optimized by means of surface response methodology for application in foods
Andreea Pușcaș, Anda Tanislav, Elena Andruța Mureșan, Vlad Mureșan - *Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania*
- 16⁵⁰ – 17⁰⁰ **OC₃**: *Sorbus Aucuparia* - antioxidant potential
Giorgiana A. Spaller, Teodora Mureșan, Crina C. Mureșan, Georgiana S. Martiș and Romina M. Marc (Vlaic) - *Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, 3-5 Mănăștur St., 400372 Cluj-Napoca, Romania*
- 17⁰⁰ – 17¹⁰ **OC₄**: Cheese-making technology - matured cheeses
Andreea Dodan, Crina C. Mureșan, Mirela Jimborean, Delia Michiu, Georgiana Smaranda Martis, Romina A. Marc (Vlaic), Sevastița Muste - *Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, 3-5 Mănăștur St., 400372 Cluj-Napoca, Romania*

Multidisciplinary Conference on Sustainable Development

Section: Food Chemistry, Engineering & Technology

- 17¹⁰ – 17²⁰ **OC5:** *Sambucus Nigra* L. - Potential resources of natural food colourants
Neli Pantea, Crina C. Mureşan, Georgiana S. Martiş, Romina M. Marc (Vlaic), Rodica Ungur, Monica Bordea and Sevastiţa Muste - *Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, 3–5 Mănăştur Street, 400372 Cluj-Napoca, Romania; Department of Rehabilitation “Iuliu-Haţieganu” University of Medicine and Pharmacy, Faculty of General Medicine, 8 Victor Babeş Street, 400012, Cluj-Napoca, Romania*
- 17²⁰ – 17³⁰ **OC6:** Physicochemical and nutritional characterization of some *Fagaceae* kernels
Maria-Ioana Socaciu, Cristina Anamaria Semeniuc, Elena Andruţa Mureşan, Andreea Puşcaş, Anda Tanislav, Floricuţa Ranga, Francisc Dulf, Emöke Páll, Alina Maria Truţă, Claudia Paşca, Daniel Severus Dezmirean, Vlad Mureşan - *Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, 3-5 Mănăştur St., 400372 Cluj-Napoca, Romania*
- 17³⁰ – 17⁴⁰ **OC7:** The oxidative quality of bi-, oleo- and emulgels and bioactives delivery in food
Anda Elena Tanislav, Andreea Puşcaş, Vlad Mureşan, Elena Mudura - *Food Engineering Department, Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, 3-5 Calea Manaştur Street, 400372, Cluj-Napoca, Romania*
- 17⁴⁰ – 18⁰⁰ Poster presentation
- 18⁰⁰ – 18¹⁵ Concluding Remarks



Faculty of Food Engineering

*Banat's University of Agricultural Sciences and Veterinary Medicine
„King Michael I of Romania” from Timisoara, Romania*

POSTERS

- P₁** Applications of hops in the food industry
Liana C. Salanță, Maria Tofană, Carmen R. Pop, Anamaria Pop, Anca C. Fărcaș, Andrei Borșa - *Department of Food Science and Department of Food Engineering, Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania*
- P₂** Reformulated meat product with wild garlic and chestnut flour
Anca Mihaela Dicu, Simona Perța-Crișan, Ionela-Marinela Rotar, Claudiu-Ștefan Ursachi - *Faculty of Food Engineering, Tourism and Environmental Protection, "Aurel Vlaicu" University of Arad, 2-4 Elena Drăgoi Str., 310330 Arad, Romania*
- P₃** Natural cranberry extracts and lower urinary tract symptoms in young female patients
Doina Georgescu, Oana -Elena Ancusa, Daniela Radu, Izabella Petre, Liviu-Andrei Georgescu - *Department of Internal Medicine, "V Babes" University of Medicine and Pharmacy, Timisoara, Romania*
- P₄** The impact of climate change on vines in the topoclimate of the Murfatlar viticulture center
Anamaria Negraru (Tănase), M. Botu, Aurora Ranca, Madalina Andreea Ciocan, Dina Ionica, Grigore-Valentin Beleniuc - *Faculty of Horticulture, University of Craiova*
- P₅** Determination of lactose in milk and dairy products by HPLC-RID method
Sandra M. Jakšić, Nenad S. Popov, Željko A. Mihaljev, Milica M. Živkov Baloš - *Scientific Veterinary Institute „Novi Sad“, Rumenački put 20, 21000 Novi Sad, Serbia*
- P₆** Two-step bioconversion process for obtaining gellan gum from wheat bran
Elemér Lajos Simon, Alexandru Rusu, Adrian Gheorghe Martău, Dan Cristian Vodnar - *Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine, Calea Mănăstur 3 - 5, 400372 Cluj-Napoca, Romania*
- P₇** The activity of radionuclides in different samples from the environment in Vojvodina (Northern Province of Serbia)
Željko A. Mihaljev, Milica M. Živkov-Baloš, Sandra M. Jakšić, Nenad S. Popov - *Scientific Veterinary Institute "Novi Sad", 21000 Novi Sad, Rumenački put 20, Republic Serbia*
- P₈** Remediation of sediment additionally contaminated with chromium
Nenad S. Popov, Sandra M. Jakšić, Željko A. Mihaljev, Milica M. Živkov Baloš, Miloš M. Pelić, Nataša S. Duduković, Srđan D. Rončević - *Scientific Veterinary Institute „Novi Sad“, Rumenački put 20, 21000 Novi Sad, Serbia*
- P₉** The content of bioactive substances in sea buckthorn and the functional potential of its waste
Ioana Stanciu, Elena Elisabeta Popa, Mona Elena Popa - *University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Marasti Blvd, District 1, Bucharest, Romania*
- P₁₀** Epidemiological situation of African Swine Fever and measures applied to prevent, combat, and control the disease in Constanta County
Larisa Cireașă – *Direcția Sanitar Veterinară și pentru Siguranța Alimentelor - Constanța*
- P₁₁** ProBioTEA – Fermented beverage obtained from borș and elderflower (*Sambucus nigra* L.) tea
Carmen (Vîrnă) Zamfir, Gabriel – Dănuț Mocanu, Dana – Iulia Moraru- *Department of Food Science, Food Engineering, Biotechnology and Aquaculture, Faculty of Food Science and Engineering, „Dunarea de Jos” University of Galați, Galați, Romania*

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Section: Food Chemistry, Engineering & Technology

- P12** Citrus oil nano-emulsions - so many options but one choice: physical stability and antibacterial activity in the food field
Madalina-Lorena Medeleanu, Anca Corina Fărcaș, Cristina Coman, Sonia Ancuța Socaci - *Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania; Institute of Life Sciences, University of Agricultural Sciences and Veterinary Medicine, 400372 Cluj-Napoca, Romania*
- P13** Literature review on the antioxidant activity of some plant extracts, fruits and spices and their application in food industry
Paul A. Popescu, Cătălina I. Nicolae, Amalia C. Miteluț, Elisabeta E. Popa, Mihaela C. Draghici, Mona E. Popa - *Faculty of Biotechnology, University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Mărăști Blvd, District 1, Bucharest, 011464, Romania*
- P14** The chromatic profile of red wines from the Oltenia wine region
Iasmina-Ximena Iliopol, Mariana-Atena Poiana, Simion Alda, Liana-Maria Alda, Diana Moigradean - *Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timisoara, Faculty of Food Engineering, Calea Aradului no. 119, 300645 Timisoara, Romania*
- P15** Applications of essential oils in the bakery industry
Veronica Filimon, Mihaela Andrei – *"Dunărea de Jos" University of Galati, Galati, Romania*
- P16** Partial or total replacement of butter with chia seeds applied in biscuits production technology
Oana-Viorela Nistor, Mihaela Gribiniuc, Doina-Georgeta Andronoiu, Gabriel-Dănuț Mocanu - *Dunărea de Jos University of Galati, Faculty of Food Science and Engineering, Domneasca Street 111, 800201, Galati, Romania*
- P17** Characterization of probiotic freeze-dried candies with yoghurt and fruit bioactive compounds
Corina Neagu, Mihaela Turturică, Daniela Borda - *Dunarea de Jos University Galati, Faculty of Food Science and Engineering, 111 Domneasca Street, Romania*
- P18** Research on innovation of smart packaging by biomaterials with antiseptic properties
Steluta V. Radu, Stefan -Lucian Toma - *University of Life Science Ion Ionescu de la Brad Iasi, University Gh. Asachi Iași*
- P19** Frying in fats
Alexandru Rinovetz, Nicoleta Gabriela Hădărugă, Ersilia Călina Alexa, Teodor Ioan Trașcă, Ariana Velciov, Petru Bogdan Rădoi, Alexandru Nicolae - *Faculty of Food Engineering, Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timisoara, Aradului Street 119, 300645 Timisoara, Romania*
- P20** Development and characterization of a new assortment of vegetable pastes based on conventional oilseeds and forestry seeds
Maria-Ioana Socaciu, Cristina Anamaria Semeniuc, Anda Tanislav, Elena Andruța Mureșan, Andreea Pușcaș, Alina Maria Truță, Vlad Mureșan - *Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, 3-5 Mănăștur St., 400372 Cluj-Napoca, Romania*
- P21** Elderberries- antiviral activity
Mirela Isac (Mocanu), Amariei Sonia - *Faculty of Food Engineering, Ștefan cel Mare University of Suceava*

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Section: Food Chemistry, Engineering & Technology

- P₂₂** Effect of different cooking techniques on the quality characteristics of cruciferous vegetables –broccoli and white cauliflower
Andreea Petruța Ochiană, Dana Iulia Moraru, Oana –Viorela Nistor, Doina – Georgeta Andronoiu, Gabriel – Dănuț Mocanu - *Department of Food Science, Food Engineering, Biotechnology and Aquaculture, Faculty of Food Science and Engineering, „Dunarea de Jos” University of Galați, Galați, Romania*
- P₂₃** Influence of brine type and fermentation time on quality characteristics of pickled apples
Nicoleta Balan, Oana Emilia Constantin, Doina – Georgeta Andronoiu, Oana –Viorela Nistor, Gabriel – Dănuț Mocanu - *Department of Food Science, Food Engineering, Biotechnology and Aquaculture, Faculty of Food Science and Engineering, „Dunarea de Jos” University of Galați, Galați, Romania*
- P₂₄** Assessing the quality of three different types of garlic jam by using some physico-chemical analysis and sensory analysis
Mihaela Cazacu, Ducu-Sandu Ștef, Ramona Cristina Hegheduș-Mîndru, Gabriel Hegheduș-Mîndru, Diana Veronica Dogaru, Mihaela Ostan - *Faculty of Food Engineering, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania*
- P₂₅** Assessing the quality of three different types of duck liver pate using physico-chemical parameters and sensory analysis
Mihaela Cazacu, Ducu-Sandu Ștef, Ramona Cristina Hegheduș-Mîndru, Gabriel Hegheduș-Mîndru, Diana Verinica Dogaru, Mihaela Ostan - *Faculty of Food Engineering, Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Romania*
- P₂₆** Revaluating carrots pomace – technological variants to enhance food quality
Doina Georgeta Andronoiu, Mădălina Bitere, Oana Viorela Nistor, Gabriel Dănuț Mocanu, Tănase (Butnariu) Luiza - *Department of Food Science, Food Engineering, Biotechnology and Aquaculture, Faculty of Food Science and Engineering, „Dunarea de Jos” University of Galați, 111 Domnească Street, 800201, Galați, Romania*
- P₂₇** Study of the role of fresh fruits and fruit products (jams) on human health
Ducu Sandu Ștef, Corina Mîscă, Nicoleta Gabriela Hădărugă, Mirela Viorica Popa, Mihaela Cazacu, Delia-Gabriela Dumbravă, Camelia Moldovan, Hegheduș-Mîndru Ramona, Gabriel Bujancă, Lavinia Ștef - *Faculty of Food Engineering, Banat's University of Agricultural Sciences and Veterinary Medicine “King Michael I of Romania” from Timisoara, Aradului Street 119, 300645 Timisoara, Romania*
- P₂₈** Active wine yeast biomass obtained through biotechnological process
Mihai Frîncu, Corina Dumitrache, Mihaela Begea, Răzvan Ionuț Teodorescu, Diguta Camelia Filofteia, Cornel Daniel Banita, Valerica Tudor, Alexandru Cîric, Ioana Simona Marculescu, Iuliana Diana Bărbulescu - *Pharmacorp Innovation SRL, 313 Splaiul Unirii, 030138 Bucharest, Romania*
- P₂₉** Sensory Traits and Consumer's Perceived Quality of 22 Traditional and Modern Apples Genotypes
Andruța E. Mureșan, Andreea Pușcaș, Anda E. Tanislav, Mădălina Militaru, Adriana F. Sestraș, Romina A. Marc Vlaic, Crina C. Mureșan, Vlad Mureșan, Radu Sestraș - *Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, 3-5 Calea Mănăștur Street, 400372 Cluj-Napoca, Romania*

- P₃₀** Phenolic Content and Antioxidant Activity of 22 Different Apples Genotypes Grown in Romania
Andruța E. Mureșan, Andreea Pușcaș, Anda E. Tanislav, Madălina Militaru, Adriana F. Sestras, Romina A. Marc Vlaic, Floricuța Ranga, Vlad Mureșan, Radu Sestras - *Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, 3-5 Calea Mănăştur Street, 400372 Cluj-Napoca, Romania*
- P₃₁** Processing parameters variation for spreadable creams formulations based on beechnut seeds as sustainable ingredient
Andreea Pușcaș, Anda Tanislav, Maria-Ioana Socaciu, Cristina Anamaria Semeniuc, Elena Andruța Mureșan, Alina Maria Truță, Vlad Mureșan - *Faculty of Food Science and Technology, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, 3-5 Calea Mănăştur Street, 400372 Cluj-Napoca, Romania*
- P₃₂** Phytochemical characterization of sweet potato purees enriched with fennel/anise aqueous extracts
Luiza-Andreea Tănase (Butnariu), Oana-Viorela Nistor, Doina-Georgeta Andronoiu, Dănuț-Gabriel Mocanu, Elisabeta Botez - *Dunărea de Jos” University of Galati, Faculty of Science and Engineering, 111 Domnească Street, RO-800201, Galati, Romania*
- P₃₃** Prevention and Control of *Legionella* spp. in a food factory
Ana Rita Baptista, **Joana Santos** & Manuela Vaz Velho - *Escola Superior de Tecnologia e Gestão (ESTG), Instituto Politécnico de Viana do Castelo (IPVC), Portugal; CISAS-Centro de Investigação e desenvolvimento em Sistemas Agroalimentares e Sustentabilidade, IPVC, Portugal*
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BOOK OF ABSTRACT



Section: Food Chemistry, Engineering & Technology

26 – 27 May 2022, Timisoara

ISSN 2821 – 4293
ISSN – L 2821 – 4293



The advent of vanadium chemistry in human metabolism

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Human metabolism reflects a complex combination of biological processes with a dynamic profile, evolving over several decades and being subject to the influence of a plethora of external environmental and internal molecular factors over the life span of man. Aberrations often lead to clinically defined symptomatology, requiring therapeutic approaches linked to drug administration. In the case of human metabolism, aberration from physiology linked to Diabetes mellitus II reflects a widespread and well-known condition plaguing increasingly higher populations all over the planet. Medical administration of the condition requires insulin, frequently generating a number of problems associated with the patient's well-being. Due to serious problems linked both to the condition itself and its therapeutics, alternative drugs have been on the upsurge over the past decades, involving both naturally occurring organics (from plant extracts and synthetic chemistries) as well as metal-organic complex assemblies, aspiring to induce efficient glucose uptake and metabolism, thereby reducing hyperglycemia.¹

Vanadium is a metal, which has drawn keen attention over the years due to its involvement in several metallobiological systems (e.g. marine organisms) and its diverse chemistry, indicating favorable biochemical behavior tantamount to the achievement of normoglycemic physiology in patients with Diabetes mellitus II. Our lab has embarked on a long search and synthesis of such vanadium-organic drugs, introducing as organic substrates appropriately configured organic hydroxycarboxylic acids and Schiff base molecules of variable yet logically designed structural moieties acting as efficient metal ion chelators, thereby bestowing solubility and bioavailability to molecular targets linked to insulin-associated molecular processes in adipocytes.

Poised, therefore, to develop such well-defined hybrid metal-organic species, our attention has focused on early events in adipogenesis involving vanadium-induced premature adipocyte differentiation leading to maturation and triggering efficaciously glucose uptake and catabolism. The synthetic results, coupled with biological experiments (involving in vitro cultures and molecular biology index determination)² on well-defined such hybrid vanadium complex species, project the importance of the nature of organic substrate configuring the chemistry of vanadium in its attempt to deliver biochemical reactivity enhancing insulin activity and/or potentially synergistically contribute to the improvement of symptomatology in clinically apt protocols looking into the future.

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Encapsulation of pharmaceuticals in polymeric matrix microparticles for the treatment of Chronic Obstructive Pulmonary Disease

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Chronic Obstructive Pulmonary Disease (COPD) is characterized by narrowing of the airways and gradually leads to the destruction of lung cells [1]. In medical treatment of the disease, the most important parameter for the administration of inhaled drugs is the particle size of the drug carrier, as particles larger than 10 μm cannot pass through the esophagus. As a result, there is a need for research into the synthesis of molecular vectors of appropriate size and ability to encapsulate the appropriate drugs in order for them to reach the alveoli and be delivered. In the context of the development of such drugs capable of enhancing the therapeutic power of clinical trials in the treatment of the disease, the aim of the research is the synthesis of particles whose size ranges from 2 to 5 μm .

Biodegradable polymers such as poly(ϵ -caprolactone) (PCL) and chitosan are used to synthesize such microparticles using emulsion solvent evaporation method [2] and ionic gelation, respectively [3]. The drugs used are amikacin and colistin. In either case, the drug is added to the aqueous phase. All materials are characterized by infrared spectroscopy (FT-IR) and transmission electron microscopy (TEM) for their morphology, structure and particle size determination. Release studies are performed through ultraviolet (UV-Visible) spectroscopy and indicate the efficacy of the carriers for drug delivery and delivery. The results a) detail the formation of hybrid particulate drug carriers, and b) support their further introduction into clinical application for the treatment of the disease.

Acknowledgments: This research is supported by the Operational Program "*Human Resources Development, Education and Lifelong Learning*" (NSRF 2014-2020), Act: "*Strengthening the Human Research Resources through the Implementation of Doctoral Research*" - MIS 5000432

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II₂

Natural oil encapsulation into inorganic silica nanoparticles

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Undoubtedly, the significance of antibacterial agents has many applications in contemporary society, with the most significant one being those of the pharmaceutical field, including wound healing and the prevention or treatment of diseases [1,3]. However, today, due to the widespread use of antibacterial agents beyond medically sound clinical practice and dosage, administration of such agents has led to the emergence of antibiotic resistance to certain strains of bacteria [1]. To that end, development of new antibiotics requires new approaches, and it is very time consuming and extremely expensive. Therefore, under the current circumstances of illogical use of antibiotics, the probability of emerging common infections and minor injuries is real and would lead to death [1]. Antibacterial substances, on the other hand, can be easily found in many plants, one category of which is Essential Oils (EOs). In comparison with the non-natural antibiotics, they show fewer side-effects and toxicity levels and better biodegradability [1]. For their transport and delivery the use on nanoparticle (NPs) carriers appears to improve their target efficiency and drug release profile, thus resulting in the reduction of the applied dose to patients [2]. Further modification of these NP hosts with a careful selection of the base polymer enhances the stability of these carriers and the release rate of the loaded antibacterial agent [3].

To that end, silica-based NPs were chosen along with a polyethylene glycol (PEG 3000) as the polymer shell, essentially reflecting polymer surface modification, using the Stöber sol-gel method. In addition, the EOs that were used for drug loading experimentation were Propolis (water soluble component of propolis encapsulated in cyclodextrins) and Carvacrol Extracts. The derived products of modified silica NPs were analyzed physicochemically, using the elemental analysis, Fourier-Transform Infrared Spectroscopy (FT-IR) and Scanning Electron Microscopy (SEM). The process and efficiency of encapsulation of the loaded EOs were studied through UV-Visible and different colorimetric methods such as Total Flavonoid Concentration (TFC), Total Phenolic Concentration (TPC), Ferric Reduction Antioxidant Power (FRAP) and % DPPH Scavenging Activity. The collective results project the antioxidant profile of the generated particles, thus reflecting the merit of such hybrid nanoparticles as future pharmaceuticals.

Acknowledgments: This research is supported by the Operational Program "Human Resources Development, Education and Lifelong Learning" (NSRF 2014-2020), Act: "Strengthening the Human Research Resources through the Implementation of Doctoral Research" - MIS 5000432

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II₃

Thin biopolymer film construction for food safety applications

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Food safety is a major issue of concern to contemporary society. The use of appropriate packaging is a key factor to the production and economy of packaged food. Packaging must protect food from a variety of factors, such as moisture, air gases, and microorganisms [1,2]. This work, focuses on the fabrication of thin films from polylactic acid (PLA), enriched with the antimicrobial factor ammonium bis (citrate)cobaltate (II) $((\text{NH}_4)_4[\text{Co}(\text{C}_6\text{H}_5\text{O}_7)_2]$, Co-cit), their characterization and study of antimicrobial properties. The main scope is the research on production methods of hybrid composite films using biodegradable polymers and their enrichment with various antimicrobial factors for use in food packaging [3].

The main goals include: a) efficient approaches to fabricating specific width composite PLA films, b) film enrichment methods encompassing antimicrobial factors, such as Co-cit, (c) film characterization by various physicochemical techniques, and (d) study of their antimicrobial properties against bacteria often found in food.

The solvent casting method, which uses chloroform as a solvent (CHCl_3), is the basis of the film production process. The FT-IR spectrum observations indicate that Co-cit enrichment does not affect the spectrum of pure PLA. SEM analysis shows an increase of surface roughness of the Co-cit enriched films. The thickness of the pure PLA films (20 μm) and enriched composite films (25 μm) is measured by SEM and a dial gauge micrometer, with no statistically significant differences.

The following were additionally studied: i) Thermal properties by TGA-DSC; ii) Weight variation, from which the statistical significance of the difference of the measured weights from a set value is calculated; iii) Moisture content between the two types of films; iv) Mechanical properties investigated through tensile and folding strength tests, with no significant effect on the mechanical properties of the film; v) Antimicrobial factor released in water and PBS, showing that the release rate is almost the same in the two media, with almost the entire amount of the released factor occurring in ~15 min; and vi) Composite PLA-(Co-cit) enriched films exhibit selective antibacterial activity against the bacterium *Listeria monocytogenes*.

Acknowledgments: This research is supported by the Operational Program "Human Resources Development, Education and Lifelong Learning" (NSRF 2014-2020), Act: "Strengthening the Human Research Resources through the Implementation of Doctoral Research" - MIS 5000432.

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IL4

Development of analytical tools package for the characterization of low and high nitrogen algal cake

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The importance of BlueBio materials in agricultural activities, targeting new fertilizers and biostimulants of plant growth, attract keen interest from the scientific community. Residual materials from industrial processing of food and feed from marine organisms (fish, algae, mussels, etc.) may be applied to produce such fertilizers and biostimulants. Poised to develop methods identifying molecular and (non)metal ionic components in BlueBio materials able to support plant growth, and cope with plant stress in horticultural crops, research efforts were launched on specific such materials emerging from industrial processes in Scandinavia. The goal, therefore, is the development of expert analytical tools in the characterization of Low and High Nitrogen Algal Cake and possibly other marine-derived residual products. Parameters include cellulose content, for which a classical Weende-based approach will be implemented. The Macro and Micro Nutrients, including K, Ca, Mg, P, Fe, Mn, etc., as well as potential toxic elements (PTEs) As, Cd, Cr, Hg, Pb will be perused through Inductively Coupled Plasma (ICP) methodologies. Key to such an endeavor is sample preparation, involving dry ashing as well as microwave assisted digestion. PTEs are also determined via ICP-MS, thus seeking lower levels of detection. Moreover, screening for organic compounds emerges prominently in the study and is pursued through GC-MS on extracts of varying polarity solvents. Using those extracts, the lipid content in the title materials is explored through GC-FID. The collective results formulate a well-defined profile for both Low and High Nitrogen Algal Cake materials, thus signifying the importance of a) screening of key ingredients in raw materials, and b) identification of both organic and inorganic components in algal materials, that could be used in agricultural processes for plant growth enhancement. Past studies have shown a positive effect of high N algal cake on ryegrass growth [1]. What made production of dry matter with algal cake, across five harvests, higher than non-fertilized soil control, was a long-term effect, with yields maintaining a quite stable level even in the final harvest and control yields leveling off. In the final harvest, the yield with algal fiber was higher than with the same amount of N applied in mineral N fertilizer (Calcinit). The algal cake has a rather slow, yet long-term growth effect.

Acknowledgments: This work is part of the project MARIGREEN, which has received funding from the European Union's Horizon 2020 research and innovation program under agreement 817992 and GSRI (T12EPA5-00071).

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II.5

The chemistry of Pb with hydroxycarboxylic acids identifies soluble species linked to its toxicity determination

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Lead (Pb) is a known metallotoxin in the environment.¹ Its presence in anthropogenic activities linked to mining, industrial processing, production of materials for technological purposes (e.g. batteries, electronics, catalysts, etc.) and often utilization in routine everyday activities, has led to an extensive environmental pollution of significant proportions in water and soil. Inevitably, intrusion of that metal has affected agricultural activities and products derived thereof, the physiology of organisms coming in contact with lead (Pb), and ultimately led to the emergence of numerous (patho)physiologies known to humans, animals, and plants.²⁻⁴ To that end, lead toxicity emerges as a prominent manifestation of the physicochemical properties of that metal ion, necessitating identification of binary and possibly ternary species, emerging as a result of interactions of that metal ion with organic substrates of low and high molecular mass in biological media.

Poised to understand the interactions of that metal ion with low molecular mass organic substrates and in the process identify species that can be used as probes of that metal ion in analytical determinations in biological fluids, research was launched in our lab to synthesize binary hybrid materials of Pb(II) with α -hydroxycarboxylic acids in aqueous media. In that respect, pH-specific synthetic attempts employing various Pb(II) salts in reactions with α -hydroxycarboxylic acids, such as α -hydroxy-isobutyric acid in the presence of aromatic chelators (e.g. phenanthroline), have led to the isolation of crystalline materials. The binary and ternary materials recovered were characterized physicochemically through elemental analysis, FT-IR spectroscopy, NMR spectroscopy and X-ray crystallography. The collective experimental results provided a well-defined profile of reactivity of lead (Pb(II)) with physiologically relevant organic chelators, thereby providing well-formulated standards for Pb(II) detection-identification through instrumental analytical methods (atomic absorption, ICP-MS), further justifying structural biochemical reactivity relationships testifying to the toxicity behavior of that metal ion in biological fluids.^{5,6}

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IL₆

Flavonoid-based hybrid materials as metallodrugs in disease administration

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Design and synthesis of hybrid binary-ternary metal-based flavonoid materials emerges as a challenge in the case of metabolic syndromes, with a prominent case being that of Diabetes mellitus II. Flavonoids are phenolic compounds, fully incorporated in the plant kingdom [1], well-known due to their properties as antioxidant, antitumor, antimicrobial, neuroprotective and cardioprotective agents, targeting a series of human diseases, like cancer, diabetes, neurodegeneration, etc.[2]. It is believed that flavonoid derivatives and/or complexation of metal ions with flavonoids may provide new (metallo)drugs with more efficient clinical profiles and pharmacological activities than parent flavonoids.

To that end, a select group of flavonoids was chosen for experimentation, essentially targeting improvement of their antioxidant potential through derivatization and/or their coordination with trivalent metal ions such Cr(III), Ga(III), and lanthanides Nd(III), Sm(III), Dy(III), and Er(III). The chosen flavonoids (quercetin, naringin, chrysin and naringenin) [3] are modified through Schiff base condensation using diamines for their derivatization-modification and aromatic chelators (1,10-phenanthroline, 2,2'-bipyridine) for the investigation of their interactions with metal ions. The derived products (modified flavonoids and metal-coordinated flavonoids) were fully analyzed physicochemically using elemental analysis, Fourier-Transform Infrared Spectroscopy (FT-IR), Nuclear magnetic resonance ¹H-, ¹³C-NMR, Electron Spray Ionization ESI-MS, and X-ray crystallography. Their electronic properties were studied through UV-Visible and Luminescence spectroscopy. The *in vitro* biological studies, run on the new species, concentrated on their cytotoxicity profile. The results project a well-rounded bioactivity profile of the hybrid ternary metal-flavonoid species, thereby justifying their use in further cell differentiation experiments and assessment of their potency as metallodrugs in Diabetes mellitus II.

Acknowledgments: This research is supported by the Operational Program "Human Resources Development, Education and Lifelong Learning" (NSRF 2014-2020), Act: "Strengthening the Human Research Resources through the Implementation of Doctoral Research" - MIS 5000432

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IL₇

3D bioprinting: Manufacture of cell loaded hydrogel scaffolds

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3D-Bioprinting constitutes a novel technique in drug manufacturing. The worldwide research community has recently focused on the development of functional scaffolds that are bioprintable, biodegradable and bioavailable. In some respect, the combination of materials used and the 3D printing techniques lead to considerable progress in understanding the relationship between the components, structure, and application of the resulting scaffolds.^{1,2} Hydrogels are one group of materials that can be used as bioink. The present work is focused on extrusion printing (direct ink writing, DIW) with cell-loaded hydrogel as bioink and its bioprinting conditions.¹

One of the most commonly used polymers in bioprinting studies is Sodium Alginate (SA), a linear polysaccharide derivative of alginic acid comprised of 1,4- β -D-mannuronic (M) and α -L-guluronic (G) acids. It is well-known as cell wall component of marine brown algae, and contains approximately 30 to 60% alginic acid. The selected biomaterial gels under mild conditions, and it is biodegradable and biocompatible, thereby making it an important factor in cell bioprinting.^{1,3} The main disadvantage of SA-based hydrogels is their lack of mechanical strength, which makes them weak, fragile, and unstable. Consequently, to achieve the wanted elasticity and mechanical strength required for their use in biomedical applications, synthetic-polymer hydrogels are employed.¹ The hydrogel utilized in this study, that has the necessary rheological and mechanical properties and renders it bioprintable is a mixture of SA, Agarose (Ag) used to adjust the viscosity of the mixture thus making it printable, and Methylcellulose (CMC) as homogenizer. The resulted scaffolds are then submerged in 1M CaCl₂ solution for further ionic crosslinking. The final scaffolds had the required mechanical properties and are bioprintable. Having achieved the construction of the hydrogel, the intended cells can be loaded in the mixture, in addition to Sucrose (S) that will serve as the nutrition source for the cells to grow on.³

Acknowledgments: This research is supported by the Operational Program "Human Resources Development, Education and Lifelong Learning" (NSRF 2014-2020), Act: "Strengthening the Human Research Resources through the Implementation of Doctoral Research" - MIS 5000432

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The content of bioactive compounds and antimicrobial activity of the *Plantago Lanceolata* herba

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Plantago lanceolata are consumed as food and folk medicine as decoctions or fresh. Plantain is widely used as a vegetable and medicine, but there is a lack of information about its ingredients and bioactive metabolites. Phenolic compounds such as stilbene derivatives, flavonoids, and phenolic acids are considered strong exogenous antioxidant agents.

The purpose of this research was to run a comparative study on the content of bioactive compounds (polyphenols, flavonoids), antioxidant capacity and antimicrobial activity of the *Plantago lanceolata* plant extracts. Total content of polyphenols, flavonoids, respectively antioxidant activity was determined by the spectrophotometric methods. The obtained results confirmed that natural extract of *Plantago Lanceolata* plant could serve as a good source of bioactive compounds in human diet, having, at the same time, a potential use in the development of many innovative nutritional supplement formulations.

Keywords: *Plantago L.*, phenolic profile, antioxidant activity, flavonoids.

OC₂

Emulsion oleogels optimized by means of surface response methodology for application in foods

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Shellac wax based oleogel emulsion were studied by means of surface response methodology with a three level two factors design (3^2) in order to find an optimal formulation for application in food products. The experimental arrangement was constructed using wax concentration and oil/water ratio as numerical factors, for each variable a low, mid and high level being proposed. Rheological, textural, colorimetry and stability analysis were conducted to assess the performance of oleogel emulsions. To further elucidate the structural events, the FTIR fingerprints of the emulsions were compared. Analysis of variance (ANOVA) demonstrates that the texture of emulsions is influenced by the wax concentration; the rheology and stability by both the factors and their interaction and the color parameter Whiteness index by both factors.. The firmness of the emulsions varied between 54-600 g, while the adhesiveness between 27-255 g. The emulsions containing 7% shellac oleogels were behaving like the strongest gels, with G' and G_{LVR} reaching values > 30.000 Pa and exhibited the highest value of the $G'-G''$ cross-over. Lowest oil binding capacity (OBC) and stability values were of 99.88%. Whiteness index varied between 58.12 and 78.50. The optimization targeted low values of wax and high values of water and maximized structural properties, except for the adhesiveness, while the rest of the samples were in range. Results indicated that a formulation based on 4.23% shellac wax and 60% water might be an excellent ingredient in spread formulations.

Keywords: oleogel emulsions, shellac wax, surface response methodology, spreads

Acknowledgments: This work was supported by a grant of the Romanian Ministry of Research, Innovation and Digitization CNCS/CCCDI-UEFISCDI, project number PN-III-P1-1.1- TE-2019-2212, within PNCDI III.



Sorbus Aucuparia - antioxidant potential

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Seeing that fruits are such an important element of the human diet, their antioxidant capabilities have been extensively examined. This activity has also been confirmed for *Sorbus* berries, especially those derived from *S. aucuparia*. (Termentzi, 2006) Since *Sorbus* polyphenols (proanthocyanidins, chlorogenic acid isomers, and flavonols) are recognized as effective antioxidants and health-promoting phytochemicals and considering the significant phenol content in *Sorbus aucuparia*, it can be concluded that their products could be excellent sources of natural antioxidants. The most important polyphenolic compounds responsible for the antioxidant properties of rowanberries are phenolic acids (mainly caffeoylquinic acids), flavonols (quercetin, isoquercetin, hyperoside, rutin, catechin, epicatechin), anthocyanins (mainly cyanidin or pelargonidin glycosides), and proanthocyanidins (Olszewska, 2010) For example, Mrkonjić reported that among 12 identified in *S. aucuparia* phenolic compounds chlorogenic acid was the most abundant. The content of bioactive ingredients is affected by maturity stage, genotype, species, geographic origin, climatic environment, storage conditions, and treatment. The increasing number of studies on phytochemicals, antioxidant potential and other bioactivities of *Sorbus* extracts has revealed the prospects of expanding its use in natural medicines, cosmetics and as innovative food ingredients.

The increasing number of studies on phytochemicals, antioxidant potential, and other bioactivities of *Sorbus* extracts revealed the prospects of widening its applications as a valuable resource of bioactive compounds to functional food or pharmaceutical industries. However, more systematic studies are required for developing convenient and acceptable consumer applications of *Sorbus* ingredients in foods or food supplements.

Keywords: *Sorbus aucuparia*, antioxidant, flavonols, phenolic acids;

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Cheese-making technology - matured cheeses

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Cheese is the generic name for a group of fermented milk-based food products, produced in a wide range of flavors and forms throughout the world.

Cheese ripening is a very complex biological, biochemical and chemical process which is determined and directed by the composition and microflora of the cheese curd; if these are reproducible and consistent, it should be possible to produce cheese of excellent quality consistently. The taste and flavor of cheese depend not only on the presence of certain components, which are formed through the ripening, but it needs a "balanced mix" of different substances resulted from the transformation of casein, lactose, and fat from cheese. Changing the composition of this mixture through a wrong maturation causes the appearance of abnormal tastes. Present technology of matured cheese is made by curdling milk, cream, or partially skimmed buttermilk from cow or goat or a mixture of these products and then separating the whey. In general, it is prepared by adding an appropriate amount of lactic acid bacteria starter along with rennet to milk, the fermentation by which transforms the milk proteins (mainly casein), carbohydrates, and fats.

This research paper, aims to support the idea that traditional methods of cheese manufacture have been modified by the need for greater efficiencies in the manufacture and maturation of cheese and by changes in the marketing channels for cheese.

Keywords: Cheese making, cheese maturation, *Lactobacillus species*, operations



Sambucus Nigra L. - Potential resources of natural food colourants

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Artificial colorants increase hyperactivity in children, which has raised concerns among consumers, leading to a ban on the use of artificial food colorants in many countries. For this reason, studies in finding alternatives naturally have increased. Elderberry fruits are an excellent source of natural colorant due to their high level of anthocyanin content¹. These compounds are plant pigments found in many plants that act as powerful antioxidants and can provide health benefits. To demonstrate their effect, or to perform a lot of analysis, one of these was the comparison of elderberry fruits with pomegranate, which showed that the addition of elderberry extract to strawberry jams improves and maintains the color of the jam. Many countries limit the use of anti-cyanide colorants due to factors, such as their instability to light and heat, their susceptibility to degradation reactions. Color intensity and hue, as well as stability, are significantly affected by pH, which can cause a major limitation for many food applications. They are also characterized by increased stability to low water activity, which favors their use for dry foods and with an intermediate humidity². This review paper, aims to that anthocyanins in elderberry fruits, in addition to their functional roles as colorants, can provide benefits in the nutritional quality of food, beverages and consumer health.

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Physicochemical and nutritional characterization of some *Fagaceae* kernels

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This study attempt to characterize *Fagaceae* kernels as a promising source of nutritional compounds for potential use as novel food ingredients. Beech achene, sessile oak acorn, turkey oak acorn, and red oak acorn were evaluated regarding the mineral and proximate composition of kernels, total phenolic content, polyphenolic composition and cytotoxicity of their acidic aqueous extracts, as well as fatty acid composition of their oils. Results revealed that the beech achene kernel is rich in lipid and protein, oak acorn kernels in carbohydrate, their oils are abundant in oleic and linoleic acids, beech achene kernel is abundant in phenolic acids, and oak acorn kernels in hydrolysable tannins. Beech achene and sessile oak acorn kernels exert slight cytotoxicity against human fibroblasts, and in all kernels, macroelements are dominated by K and microelements by Cu, Mn, and Fe. In conclusion, beech achene and oak acorn kernels could be alternatively used as protein-rich and starch-rich ingredients, respectively, in food.

Keywords: Beech achene kernel (*Fagus sylvatica* L.), Sessile oak acorn kernel (*Quercus petraea* Liebl.), Turkey oak acorn kernel (*Quercus cerris* L.), Red oak acorn kernel (*Quercus rubra* L.), Nutritional composition, Cytotoxicity

Acknowledgements: This work was supported by a grant of the Ministry of Research, Innovation and Digitization, CNCS/CCCDI—UEFISCDI, project number PN-III-P2-2.1-PED-2019-5346, within PNCDI III.



The oxidative quality of bi-, oleo- and emulgels and bioactives delivery in food

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During recent years, the applicability of bi-, oleo- and emulgels in the food industry has been widely studied because the use of these structured oil alternatives limits the content of trans and saturated fats. The evaluation of the oxidative quality of this structured lipids is significant because the production process involves the use of heat treatments and continuous stirring where large amounts of air can be incorporated. The aim of this literature review is to evaluate the oxidative quality of bi-, oleo- and emulgels and their ability to protect and deliver bioactive compounds to better understand the interaction of components and to identify future improvements that can be applied in oil gelling technology.

The type and concentration of gelling agents and the time-temperature combination in the obtaining process of structured lipids, influence the accumulation of oxidation products.

In general, the oil structuring method improves the stability of bioactives depending on the structure and composition of the delivery system. In food products, the replacement of conventional fat with a gelled system is significant for the fatty acid profile.

Improving oxidative stability could be achieved by using antioxidants, but further studies are needed to improve the oxidative quality of gelled systems and subsequently the food products in which they are introduced.

Keywords: oxidation, bioactives, oleogels, bigels, emulgels

Acknowledgments: This work was supported by a grant from the Romanian Ministry of Research, Innovation and Digitization CNCS/CCCDI—UEFISCDI, project number PN-III-P1-1.1-TE-2019-2212, within PNCDI III.

P₁

Applications of hops in the food industry

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The lupulin glands on the female inflorescence, or hop cone, contains a number of biologically active compounds, bitter substances (α bitter acids: humulona and β bitter acids: lupulona), polyphenolic compounds (prenylated and phenolic acids, flavonoids: xanthohumol, 8-prenylnaringenin) and essential oils (myrcene, caryophyllene, monoterpenes). This paper aims to systematize the main constituents from *Humulus Lupulus* L. that have antimicrobial activity against pathogenic microorganisms and their potential applications. A literature data screening regarding the antimicrobial properties of bioactive compounds from hops with applications in food industry was conducted. There are several studies that confirm antibacterial activity of bioactive compounds from hops. According them, the constituents of bitter acids, humulona and lupulona, have strong antimicrobial activity against pathogenic microorganisms. Bitter acids have bactericidal activity against Gram-positive, but limited activity to Gram-negative. Xanthohumol (XN) is the main prenylflavonoid of hop with demonstrated antibacterial effect on strains of *S. aureus*, *S. mutans*, *S. salivarius* and *S. sanguis*. Yamaguchi et al., 2009, studied the minimum inhibitory concentration (MIC) of xanthohumol for *P. acnes* strains, *S. aureus*, *S. epidermidis*, *S. pyogenes* and *K. rhizophila*, the values obtained were between 1-3 $\mu\text{g/ml}$. The antibacterial effect of XN against microorganisms strains: *B. subtilis*, *B. polymyxa*, *B. cereus*, *C. perfringens*, *C. butyricum* and *C. sporogenes* was studied by Cetin-Karaca, 2011, and the MIC was between 5-20 $\mu\text{g/ml}$. Also, hop oils and resins are well known for their sedative and other neuropharmacological properties, but in addition, these compounds exhibit antibacterial and antifungal effects. Jirovetz et al., 2006, demonstrated antimicrobial effects of hop oils against Gram positive *S. aureus* and *E. faecalis*, Gram-negative *E. coli* and *Salmonella* sp., and the yeast *C. albicans*.

Because of their antibacterial effects, hop compounds can be used in human or veterinary medicine. Throughout time, many researches have been conducted *in vivo* and *in vitro* on antimicrobial effect of hop constituents on microorganisms, but is still require further studies on the applicability in the food industry. EOs from hops are potent antimicrobial agents. High volatility and strong odor are the main drawbacks for their food applications. Recent advances that refer to new forms of application to avoid these problems are currently under study.

Keywords: *Humulus Lupulus* L., bioactive compounds, food industry

P₂

Reformulated meat product with wild garlic and chestnut flour

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In recent years, one of the meat industry's goals has been focused on developing meat products with functional ingredients, in order to improve their nutritional profile and prevent the risk of specific diseases' appearance. The main purpose of this work was the preparation of a reformulated meat product with the addition of wild garlic and chestnut flour, aiming the improvement of its nutritional characteristics, reducing the fat content and extending the shelf life. The classic mixture of ingredients for concerned meat product was used as a control sample, while other four samples were reformulated by the partially addition of wild garlic and chestnut flour in different proportions. Total phenolic compounds of wild garlic and chestnut flour was determined according to the Folin–Ciocalteu method. Water binding capacity and oxidative stability of reformulated samples were evaluated in relation with the control sample.

Keywords: reformulated meat product, wild garlic, chestnut flour



Natural cranberry extracts and lower urinary tract symptoms in young female patients

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Background: Lower urinary tract symptoms (LUTS), like frequency, urinary urge, poor stream and dribbling, divided into storage and voiding issues are frequently seen in female gender.

Aim Assessment of efficacy of natural cranberry extracts rich in exocyanes on LUTS in young female patients.

Patients and methods 30 premenopausal female outpatients, age under 45 years, with confirmed LUTS joined this study. A lot of diseases and conditions were ruled out. Patients undertook a thoroughly clinical examination, with numerous interdisciplinary consultations. Symptoms characterizing LUTS such as: urinary urge, micturition latency and cystalgia were scored using a scale ranging from 0=absent to 6= extremely severe. Biochemical work-ups: blood, urine (biochemistry, cytology and microbiology), as well as transabdominal pelvic ultrasonography with assessment of urinary bladder wall thickness (UBWT) were performed before and after administration of supplements containing 36 mg Exocyan/capsule, 1 time/day, 10 days/month, for 3 months long.

Results Analyze of the demographic data of study participants revealed that 66.66% of female patients had urban residency and 33.33% rural residency; age distribution was as follows: 3.33% patients <20 years, 50% patients between 21-30, 40% patients between 31-40 years, 6.66% patients >40 years. UBWT before treatment was $5.37\text{mm} \pm 0.16\text{ mm}$ vs. $5.15\text{mm} \pm 0.1\text{mm}$, after the treatment, $p < 0.0001$. Micturition symptoms mitigated after therapy as follows: latency 1.96 ± 0.19 vs. 1.16 ± 0.4 $p < 0.0001$; urinary urge 2.66 ± 0.23 vs. 1.46 ± 0.13 , $p < 0.0001$ and cystalgia 2.3 ± 0.2 vs. 1.1 ± 0.11 $p < 0.0001$

Conclusions: Alleviation of symptoms and decrease of UBWT measurements were noted after completing the treatment with supplements rich in exocyanes in young female patients with LUTS.

Keywords: cranberry extract, exocyanes, lower urinary tract symptoms

P4

The impact of climate change on vines in the topoclimate of the Murfatlar viticulture center
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The tendency of increasing the thermal values of the air observed in the last decades, have determined changes in the development of the growth and development of the vine, with negative effects on the quality and quantity of grape production.

The SCDVV Murfatlar research team conducted studies on the main climatic elements recorded in the Murfatlar wine center during 1989-2018 and the creation of a database on the succession and physiological perfection of vegetation phenophases, in relation to climate change and the specificity of varieties of wine and table grape between the years 2000-2019.

Due to climate change, significant effects on vines may occur due to the interaction between climatic conditions specific to the Murfatlar vineyard, the effect of increased CO₂ on photosynthesis and the genetic resistance of plants.

From the analysis of the climatic elements over a period of 30 years, there is an increase in temperatures during the winter, but also during the vegetation period, so the four seasons are no longer very well defined.



Determination of lactose in milk and dairy products by HPLC-RID method

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Fast, simple high-performance liquid chromatography (HPLC) method with refractive index detection (RID) has been optimised and validated for the quantification of lactose in milk and dairy products. The method showed good linearity with determination coefficient 0.9975. The limit of detection was 0.04 mg/ml, and the limit of quantification 0.12 mg/ml. The relative standard deviations for repeatability were 4.00 and for reproducibility 4.98 in reference material, while in different tested matrix relative standard deviations for repeatability was in range 2.58–6.51. Average efficiency value was 97%. The applicability of the method was confirmed by its application in different samples. The presence of this sugar was not found (lower than 0.1%) in samples of milk, and yogurt declared as lactose-free, as well as in parmesan, cheddar, gouda and trappist cheese samples. In various dairy products measured lactose content was in range from $0.493 \pm 0.026\%$ in home-made rolled cheese to $4.42 \pm 0.180\%$ in cooking sour cream.

Keywords: lactose, determination, milk, dairy products, HPLC-RID

Acknowledgement: This research was funded by Ministry of Education, Science and Technological development of Republic of Serbia by the Contract of implementation and funding of research work of NIV-NS in 2022, Contract No: 451-03-68/2022-14/200031.

P₆

Two-step bioconversion process for obtaining gellan gum from wheat bran

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Gellan gum is a hydrogel-forming polymer consisting of an anionic polysaccharide produced biotechnologically by the bacteria *Sphingomonas elodea*. The specific characteristics of gellan gum are temperature resistance, stability in acidic conditions, hardness, and clarity. The polymer is widely used as a gelling agent in the food industry and an encapsulation agent in pharmaceutical delivery systems. This study aimed to evaluate the capability of obtaining gellan gum from wheat bran, using a two-step bioconversion process. The first process consisted of enzymatic hydrolysis with 20% sterile wheat bran mixture at 50 °C for 72 hours at a pH 5.5, using the Cellic CTec2 enzymatic blend at a final concentration of 5 UI/g. The second step continued with bioreactor fermentation of the resulted hydrolysate, using the *Sphingomonas paucimobillis* bacteria, at 30 °C, 500 rpm, pH 6.5 for 48 hours. The synthesized gellan gum was then separated from the resulted fermented supernatant by overnight precipitation in 2 volumes of ethanol at 4 °C followed by freeze-drying. The results of the two-step bioconversion process were comparable with those of model media fermentation, making the novel approach a good method of obtaining gellan gum from wheat bran.

Keywords: gellan gum, wheat bran, enzymatic hydrolysis, bioconversion, fermentation

Acknowledgments: Work supported by a grant from the Romanian National Authority for Scientific Research and Innovation, CNCS—UEFISCDI, project number PN-III-P2-2.1-PED-2019-1723, within PNCDI III and under the frame of European Social Fund, Human Capital Operational Programme 2014–2020, project no. POCU/380/6/13/125171.

P₇

The activity of radionuclides in different samples from the environment in Vojvodina (Northern Province of Serbia)

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Peaceful uses of nuclear energy (nuclear weapons testing, nuclear reactor accidents, industrial and medical use of radioactive compounds) and application of phosphate mineral fertilizers in agricultural production lead to substantial environmental contamination. Land contaminated with radionuclides represents the first link in the food chain and hence the radioactive contamination of crop and livestock production. Activity of radionuclides gamma emitters were determined by the method of low-level gamma spectrometry on high resolution HPGe detector system produced by "ORTEC". Concentrations of thorium and uranium in all samples were analysed by a technique of inductively coupled plasma with mass spectrometry (ICP-MS 7700, Agilent). The results revealed the presence of the following natural radionuclides: ^{40}K , ^{226}Ra , ^{232}Th , ^{235}U and ^{238}U . The presence of anthropogenic radionuclides, ^{137}Cs (the soil) and ^{90}Sr (fish meal), was also determined. One can conclude that, in all investigated samples, ^{40}K was the predominant natural radionuclide as compared to other radionuclides.

Key words: natural radionuclides, artificial radionuclides, biosphere

Acknowledgement: This research was funded by the Ministry of Education, Science and Technological development of Republic of Serbia by the Contract of implementation and financing of scientific research work of NIV-NS in 2021, Contract No: 451-03-9/2021-14/200031. from 05/02/2021



Remediation of sediment additionally contaminated with chromium

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Sediment is an essential part of the aquatic system which accumulates heavy metals. Changing physical and chemical conditions in the aquatic system can lead to the release of heavy metals into the aqueous phase and endanger aquatic organisms. Chromium is considered to be one of the most common ubiquitous pollutants in the aquatic environment. The trivalent form of chromium can cause toxic and mutagenic changes in aquatic organisms. The aim of this paper was to investigate the possibility of remediation of the sediment from Veliki bački canal additionally contaminated with chromium compounds by conventional electrokinetic and stabilization/solidification treatment. Electrokinetic treatment was used for the accumulation of chromium in the anode part of the electrokinetic cell. Lime was used to stabilize anode part of the sediment in stabilization/solidification treatment. The results indicated high mobility of chromium within the electrokinetic cell, and effective immobilization of chromium by the addition of lime.

Key words: sediment, chromium, electrokinetic, stabilization/solidification

Acknowledgement: This research was funded by Ministry of Education, Science and Technological development of Republic of Serbia by the Contract of implementation and funding of research work of NIV-NS in 2022, Contract No: 451-03-68/2022-14/200031 and the Contract of implementation and funding of research work of UNSPMF in 2022, Contract No: 451-03-68/2022-14/200125.

P₉

The content of bioactive substances in sea buckthorn and the functional potential of its waste

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Recently the sea buckthorn became one of cultivated species. Research in the food industry aims to capitalize on sea buckthorn in a wide range of products due to the benefits it may bring to the human body. The recovery and use of sea buckthorn waste is also valuable regarding the nutritional value. Sea buckthorn contains various types of nutrients and bioactive substances, such as vitamins, carotenoids, flavonoids, polyunsaturated fatty acids, free amino acids, minerals and more. Sea buckthorn fruits can produce juices, jams, oils, food pigments, tea, and its waste may be valorized in sea buckthorn flour which is used as a bioactive ingredient in other food products. This paper presents aspects such as: identification of sea buckthorn products and the waste which can be transformed into new functional ingredients.

Key words: sea buckthorn, waste, bioactive, functional product

Acknowledgements: This work was supported by contract 186/2020, project acronym MILDSUSFRUIT. The authors acknowledge the financial support for this project provided by transnational funding bodies, partners of the H2020 ERA-NETs SUSFOOD2 and CORE Organic Cofund, under the Joint SUSFOOD2/CORE Organic Call 2019.

P₁₀

Epidemiological situation of African Swine Fever and measures applied to prevent, combat, and control the disease in Constanta County

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P₁₁

ProBioTEA – Fermented beverage obtained from borș and elderflower (*Sambucus nigra* L.) tea

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In Romania, *borș* is a traditional fermented product, obtained from an aqueous suspension of wheat bran and corn flour, used as flavoring enhancer to make traditional liquid dishes, or consumed as a healthy and nutritious drink. In this research, the novel non-alcoholic fermented beverage was prepared using an aqueous suspension (obtained from wheat bran and corn flour) and elderflower tea extract in three different concentrations. The purpose of our study is to evaluate the influence of elderflower tea extracts on physicochemical, microbiological, sensorial characteristics, phytochemical compounds and antioxidant activity for each beverage sample. The pH values of all elderflower beverage samples dropped quick during the first 3 h of fermentation and ranged from 5.0 ± 0.09 to about 4.5 ± 0.07 . After 6 h of fermentation this parameter reached a value of about 3.6 ± 0.04 , while lactic acid bacteria were present in high counts (about $12 \log \text{CFU/mL}$). The content of total phenolic in obtained beverages ranged from 92.47 ± 0.71 to $943.54 \pm 0.49 \text{ mg GAE/g DW}$. The antioxidant activity of novel non-alcoholic fermented beverage increased by 14.82%. This research provide a practical method in processing of wheat bran and corn flour into novel non-alcoholic fermented beverage with possible well-being effects on human health.

Keywords: borș, wheat bran, elderflower tea, fermentation, antioxidant activity, sensory quality

P₁₂

Citrus oil nano-emulsions - so many options but one choice: physical stability and antibacterial activity in the food field

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In this study, nano-emulsions were prepared through ultrasonication method, using citrus oils as the lipidic phase and Tween 80 and as the surfactant and their stability assessed under different storage conditions. Two types of citrus oil nano-emulsions were prepared by mixing 4% (v/v) of oil phase (tangerine and lime essential oils) with 3% (v/v) of Tween 80, 3% (v/v) of ethanol and 90% of deionized water using a magnetic stirrer and sonication at 72 amplitudes for 15 minutes. At the end of the process nano-emulsions were obtained with a 40-50 nm particle size. The particle size, turbidity, morphology and antibacterial properties were investigated. The stability of the obtained nano-emulsions was monitored under different environmental conditions (storage at room temperature, at 37°C, refrigeration, freezing). After five days each emulsion exhibited different degrees of gravitational separation, but the nano-emulsions stored at 37°C were the most unstable, showing coalescence. The most stable was the one kept in the freezer. The antibacterial activity was investigated against *Escherichia coli*, *Salmonella spp.*, and *Staphylococcus aureus* using MIP and Disk Diffusion Method. Incorporation of citrus essential oils into nano-emulsions systems leads to their good physical stability and antibacterial activity, which makes them ideal for use in food and beverages fields.

Acknowledgement: This work was supported by a grant of the Romanian Ministry of Education and Research, CNCS - UEFISCDI, project number PN-III-P4-ID-PCE-2020-1847, within PNCDI III.

P₁₃

Literature review on the antioxidant activity of some plant extracts, fruits and spices and their application in food industry

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In recent years, as consumers are more concerned about the health benefits that derive from the food that they consume, a lot of studies have been made in order to assess the antioxidant activity of plant extracts, fruits and spices, which can be further used in therapeutic prevention of illnesses related to oxidative stress. In order to assess the total antioxidant content of food products several methods are used, e.g. 2,2'-diphenyl-1-picrylhydrazyl radical scavenging activity, superoxide anion scavenging assay, thiobarbituric acid and hydroxyl radical scavenging assay. Literature studies assessed the antioxidant activity of fruits berries (wild bilberries, black currants, strawberries, blackberries, sea buckthorn, goji berries), herbal plants (caraway, dandelion, tarragon), spices and herbs (basil, cinnamon, clove, dill, ginger, rosemary, saffron, sage, thyme). This paper aims to highlight the results obtained by researchers and the further uses of these plants extracts, fruits and spices in the food industry.

Keywords: antioxidant activity, health benefits, plant extracts.

P₁₄

The chromatic profile of red wines from the Oltenia wine region

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Wine represents one of the most consumed beverages from the world. It is very important to produce a wine with a good color that are liked by consumers not only due to taste but also due to health benefits. The purpose of this study was to investigate the chromatic characteristics of some red wines from black grapes variety growing in Oltenia region from Samburesti Wineries and Oprisor Winery. The historical region of Oltenia is located in the South-West of Romania and the vineyards are located in hills which have very good pedo-climatic conditions; is ideal area for growing high-quality grape varieties. In the Oltenia vineyards, the tradition of harvesting grapes and wine production has remained unchanged over the years. The red wine color is strongly influenced by wine grape variety, vintage year and the wine region of origin. The chromatic properties will be analyzed in terms of color composition, chromatic profile, total monomeric anthocyanins and polyphenols content. Chromatic profile will be determined used the standardized methods (A and B) and Glories method. Total content of polyphenols has been determined by Folin-Ciocalteu method. The polyphenols compounds are responsible for the quality of red wines, influencing the color and their astringency and bitterness. As a group of important pigments in red grapes, the anthocyanins contribute a red to purple color of wines. The total monomeric anthocyanins will be determined by spectrometric differential pH method. It was established correlations between chromatic characteristics of wines.

Keywords: red wines, chromatic characteristics, monomeric anthocyanins, polyphenols

P₁₅

Applications of essential oils in the bakery industry

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In a society where time is becoming increasingly valuable, we aim to identify practical alternatives to any area. In terms of nutrition, the most important aspect is not the practical one. Thus, consumers are not willing to compromise (fast food, ready to eat food, ready you heat food) when their health is at risk. Bread resisted changes in consumers' food preferences, being the basic food of Romanians, and is an even part of fast-food foods. This is a documentary study in which we aim to identify applications of essential oils in the bakery industry.

The experimental data from literature shows that essential oils from thyme, oregano, rosemary, basil, fennel, sage, coriander, cloves, cinnamon and many others have an antimicrobial effect. Used in microencapsulated form, some of these essential oils have been shown to prevent yeast and mold growth on the surface of the bread.

Essential oils can be used as an inhibitor to micro-organisms. Their antimicrobial effect has been studied in molds of the *Penicillium ssp.*, *Rhizopus ssp.*, *Aspergillus ssp.*, *Cladosporium ssp.*, *Epicoccum ssp.* and *Eurotium ssp.* According to the experimental data, essential oils have been proven to be an effective modern alternative to prolong the shelf life of bread, avoiding the use of chemical preservatives such as salts of propionic and sorbic acids.

Keywords: essential oils, antimicrobial effect, bread, shelf life, fast food

P₁₆

Partial or total replacement of butter with chia seeds applied in biscuits production technology

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Fat consumption, especially associated with white flour could result in cholesterol, obesity, diabetes and chronic heart diseases. Therefore, this study aimed to develop novel technologies for low fat biscuits production. The substitution of fat, represented by butter, with chia seeds ranged from 25-100%. Several investigations were developed in order to notice the changes induced by the addition of chia seeds. Color, alkalinity, saturation index and sensorial evaluation were determined. The color changes were influenced by the quantity of chia addition, as it was expected. Saturation index decreased with the added quantity of chia seeds. The most appreciated sample by the panelists was the one with a 25% substitution. In conclusion, the replacement of butter with chia seeds could be a feasible technological solution to obtain low fat biscuits.

P₁₇

Characterization of probiotic freeze-dried candies with yoghurt and fruit bioactive compounds

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The objective of this work was to develop freeze-dried candies from rose ship puree, honey, isomalt and yoghurt, as a healthy alternative to traditional candies. To obtain a probiotic product of the candy's composition, encapsulated *Lactobacillus casei* (La-5) cells were incorporated into the mix. The probiotic candies were stored in PE boxes during 28 days at 25 °C in the absence of light and further evaluated for the safety microbiological characteristics, probiotic viability, physico-chemical characteristics and antioxidant capacity. The bio accessibility of carotenoids was determined by in vitro simulated digestion. *L. casei* maintained counts higher than 6.13 log CFU/g over 21 days of storage and the candies were considered safe for consumption according to Regulation (EC) 1441/2007. Antioxidant capacity and bio accessibility of carotenoids, probiotic counts demonstrate the potential of the freeze-dried candies to become an attractive and healthier desert for children to conventional candies and has good perspectives for upscaling in the food industry.

Keywords: Rosehip, probiotic, candy, antioxidant, microencapsulation

Research on innovation of smart packaging by biomaterials with antiseptic properties

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Applied research aimed at innovating smart packaging made of biodegradable materials. From an experimental point of view, the aim was to identify the type of biomaterial and the proportion needed to develop a material with improved physical, mechanical and optical characteristics, as well as to establish the biopolymers that will be used to obtain the new single-use smart biofilms. After the research activity, an edible material for single-use packaging was obtained: its testing and characterization, benefits in use, applicability were performed.

Creating smart biofilms with various additives - inulin, carob, stevia, phytoncide extracts - in order to present alternatives to the materials for packaging dehydrated and candied food, existing today in the trade with foods.

Also, a series of substances with antiseptic properties were extracted from plants containing phytoncides and biomaterials were impregnated to improve their antiseptic characteristics.

The final results also aimed at establishing the products that can be packed in newly developed materials, with the possibility of obtaining and immediate application in the specialized industry.

Keywords: biofilms, hydrocolloids, phytoncides

Frying in fats

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Heat treatment by immersion of food products (raw material/finished product), in oil/fat bath known as frying, is a generator of compounds with positive/negative characteristics originating from the sensory perception of the consumer. Frying is a unitary operation centered on immersion of food in mass of hot oil, achieving a direct oil/air/product contact at higher temperatures (150÷190°C), a traditional method of thermal processing for a wide range of food. Nature of product, thermal agent (nature and composition of lipid complex accessed (=agent/immersion medium)), operating parameters (time/temperature), moisture content (product/immersion medium), concentration of oxygen, implicitly conditioned, are generators of "substitutes", precursors, which modify stability of immersion by initiating hydrolysis, oxidation, polymerization reactions. All these induce reactions of thermal degradation in depth of submerged product, with emphasis on the basic elements (proteins, lipids, carbohydrates) and accompanying elements, especially those with antioxidant action (tocopherols, etc.). Medium immersion interactions – product, are generated secondary by frying conditions, geometry of apparatus (bowl), quality of oil (presence of antioxidants) and nature of the product. Stability to thermo oxidation conditioned by the number of reuses, profile of superior free organic acids, saturated/unsaturated balance, presence of metals, decisively influences behavior of immersion medium. Effectiveness of antioxidant substances decreases in proportion to, increasing the frying temperature. Combined, simultaneous action of heat transfer and mass contributes to reformulation of texture and flavor of fried foods. Most of resulting volatile compounds are transferred in vapor state to the environment and only a part is absorbed by the product. The presence of non-volatile compounds induces physico-chemical changes to both oil and product with influence during storage (aroma/texture/taste/color). Heat treatment changes profile of upper organic acids, with reduction of unsaturated, increase of foaming index, viscosity, density, specific heat, content of superior free organic acids, color intensification, generation of polar elements and polymeric compounds. Frequently, profile and share of free fatty acids (Free Fatty Acid (FFA)), peroxide value (Peroxide Value (PV)), are used as a reference for tracking quality of immersion medium, in conjunction with spectrophotometric methods (FTIR spectroscopy (Fourier Transform Infra-red)). A role in prediction of repeated use behavior (possible number of uses), of mass of oil, is also played by determination of partial heat transfer coefficient (a (W/m²·K)), compared to evolution of viscosity and share of polar elements [1–7].

Key words: frying, lipid complex, heat/mass transfer, thermal degradation compounds, predictive characters.

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Acknowledgement: The authors are indebted to the Banat's University of Agricultural Sciences and Veterinary Medicine “King Michael I of Romania”, Faculty of Food Engineering, Timișoara, for financial and technical support.

Development and characterization of a new assortment of vegetable pastes based on conventional oilseeds and forestry seeds

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The work aimed to formulate and optimize the formulation of a spreadable vegetable paste based on Fagaceae kernels by replacing sunflower kernel paste (VP_c) with beech achene kernel paste (VP_{10%BAK}), sessile oak acorn kernel powder (VP_{10%SOAK}), or the mixture of beech achene kernel paste/sessile oak acorn kernel powder in different ratios (VP_{5%SOAK+5%BAK}). The vegetable pastes prepared were evaluated for choosing the one with superior physicochemical, chromatic, rheological, textural, and sensory properties, respectively, energy value and storage stability. Results revealed that VP_c formulation is abundant in carbohydrates, VP_{10%SOAK} formulation has high protein content and moisture, and VP_{10%BAK} is rich in lipid. The VP_{5%SOAK+5%BAK} formulation presents good storage stability and lower pH value. The vegetable pastes are red-yellowish and more spreadable when the sessile oak kernel powder is not present. The most appreciated formulation was VP_c, followed by VP_{10%BAK}, f VP_{5%SOAK+5%BAK}, and VP_{10%SOAK}.

Keywords: Spreadable vegetable paste, Sunflower kernel, Beech achene kernel, Sessile oak acorn kernel, Manufacturing optimization

Acknowledgements: This work was supported by a grant of the Ministry of Research, Innovation and Digitization, CNCS/CCCDI—UEFISCDI, project number PN-III-P2-2.1-PED-2019-5346, within PNCDI III.

Elderberries- antiviral activity

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Our life, as we have known so far, has changed radically in context of the COVID pandemic. Viruses evolve with us, becoming more and more aggressive and pathogenic, resisting more on surfaces, transmitting much more easily to communities.

Medical research cannot always keep up with the evolution of these microorganisms, therefore, until the appearance of targeted drugs, in order to keep our body undamaged, it is necessary to eat a healthy diet and supplement it with natural products, made available by thousands of years of nature, products that have proven antiviral action.

From March 2020 until now, in order to control the Covid pandemic, about 300 clinical trials have been conducted in China, of which about 50 are with traditional Chinese remedies, and 14 combine these traditional Chinese remedies with classic western medication.

Antiviral activity against human coronaviruses has been demonstrated for sambucus nigra polyphenols in laboratory studies, so obtaining a dietary supplement containing extracts from elderberries is a topical necessity.

Acknowledgements: This work was performed within the framework of the “DECIDE - Development through entrepreneurial education and innovative doctoral and postdoctoral research, project code POCU/380/6/13/125031, supported by project co-financed from the European Social Fund through the 2014 – 2020 Operational Program Human Capital”.

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Effect of different cooking techniques on the quality characteristics of cruciferous vegetables – broccoli and white cauliflower

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The impact of different cooking techniques (boiling, steaming microwaving and frying) on the phytochemical compounds (carotenoids, chlorophylls, polyphenols, flavonoids), antioxidant activity (DPPH), color and texture changes of cruciferous vegetables was evaluated. Among cooking techniques, frying determined a decrease of bioactive compounds and antioxidant activity in all samples tested. However, steamed and boiled small florets of broccoli (*B. oleracea* L. cv. *Italica*) and white cauliflower (*B. oleracea* L. cv. *botrytis cauliflora*) present high levels of carotenoids, chlorophylls, polyphenols and flavonoids compared with fresh samples. According to our results, microwaving seems to be the optimum cooking procedure to keep the color of broccoli and white cauliflower samples.

To achieve the high nutritional benefits for each vegetable (high amount of bioactive compounds and antioxidant capacity) important to human health, which depend by species and cultivars, it is necessary to identify the suitable cooking method.

Keywords: broccoli, white cauliflower, color, cooking methods, bioactive compounds

P₂₃

Influence of brine type and fermentation time on quality characteristics of pickled apples

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Fresh apples (Granny Smith variety) were fermented for 35 days in different brine solutions, where NaCl was totally replaced with KCl and MgCl₂, at ambient air temperature, $16 - 18 \pm 2$ °C and 90 – 95% relative humidity. For each sample, phytochemical compounds, antioxidant activity, color, textural, and sensorial properties were analysed to establish the changes produced by brine type and fermentation time. Throughout the fermentation process, microbiological analyses (lactic acid bacteria, aerobic, and fungal counts) were performed on brine. The findings indicate that the salt concentrations used in this study had no effect on the number of aerobic and lactic acid bacteria present during the fermentation process. Fermentation induced a decrease in apples' firmness and chewiness for all salts. MgCl₂ and KCl determined the minimum variation in apples' texture parameters. The obtained results proved that pickled apple products are a good source of bioactive and antioxidant compounds with high beneficial impacts on human health.

Keywords: apple, fermentation, bioactive compounds, salt reduction, hypertension risk

P₂₄

Assessing the quality of three different types of garlic jam by using some physico-chemical analysis and sensory analysis

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The aim of this paper was to highlight some of the physico-chemical properties and sensory characterization of three types of fresh garlic jam. The samples analyzed were: garlic jam with fructose and cognac, garlic jam with fructose and wine, respectively garlic jam with honey and wine. Moisture, minerals and sugar content were assessed, respectively for sensory assessment: taste, smell, appearance and consistency. Following the experimental results we found that the garlic jam with fructose and wine had the lowest value for sugar content, but the highest humidity. According to sensory tests, the most appreciated type was the garlic jam with fructose and cognac.

Keywords: garlic jam, fructose, brandy, wine, sensory characterization.

Assessing the quality of three different types of duck liver pate using physico-chemical parameters and sensory analysis

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The aim of this paper was to highlight some of the physico-chemical properties and sensory characterization of three types of duck liver pate. The samples analyzed were: tarragon pate, apple juice pate, and the commercial pate control sample. The humidity, the total mineral content (ash), the amount of lipids and the salt content were evaluated, respectively for the sensory assessment: taste, smell, appearance and consistency. Following the experimental results, we found that the control sample had the lowest moisture and lipid content, and the highest values for all the researched properties were for tarragon pate. According to sensory tests, the most appreciated type was the duck liver pate, which contained apple juice.

Keywords: pate, duck liver, tarragon, apple juice, sensory characterization.

P₂₆

Revaluating carrots pomace – technological variants to enhance food quality

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Carrots pomace derived from carrots juice production is a good source of carotenoids and fibres, compounds that have the potential to enhance food quality. The aim of this study was to obtain and characterise powders from carrots pomace as well as to use the powders to achieve fortified food products. Hot air convection and combination of hot air convection and infrared radiation were used to dry the pomace. The latest method led to a shorter drying time and a better rehydration capacity, a higher carotenoids content and a less colour degradation of powder. Two food products, yoghurt and bread, were supplemented with 1% and 2% carrots powders. They showed enhanced qualities like carotenoids content, colour and texture.

Keywords: carrots pomace, infrared radiation drying, carotenoids, texture

Study of the role of fresh fruits and fruit products (jams) on human health

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Nowadays it is well known that the dietary use of fruits, along with vegetables, is an important way to ensure a balanced diet. In supermarkets there is a wide variety of fruits and fruits products (juices, jams, jellies, purées, fruit preparations, etc.), in which fruits are found in various forms. The components of fresh fruit (vitamins, antioxidants, minerals, fiber, etc.) have a lot of benefits on human health. The processing of fresh fruits with their transformation into jams leads to a decrease in their nutritional value. According to the EU Council Directive 2001/113/EC of 20 December, 2001, jam is a mixture, brought to a suitable gelled consistency, of sugars, the pulp and/or purée of one or more kinds of fruit and water. Many times the negative effects of processing are compounded by the tendency of some processors to replace some of the main fruit with cheaper fruit, which is not listed on the label. The objective of this paper is to accomplish an analyze of the benefits of fresh fruits on human healthy and to highlight the differences between fresh fruits and fruits products, especially jams.

Key words: healthy, nourishing value, vitamins, antioxidants

Active wine yeast biomass obtained through biotechnological process

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The aim of this paper was to study the influence of some parameters of the fermentation process at laboratory level, using an orbital incubator, with the aim to obtain a high yield of wine active yeast biomass. In order to start the process, previously we isolated the yeasts strain, identified as *S. cerevisiae*, from the Feteasca regala grapes from Pietroasa Viticulture and Winemaking Research and Development Station. The study considered the influence of 3 parameters on the biomass yeast development: the ratio working volume / total volume (V_u/V_t) (100ml/500ml; 150 ml/500ml; 200 ml/500ml; 300 ml/500ml); the inoculate rate (5%; 10%; 15%;20%); and the stirring rate (150 rpm; 170rpm; 200rpm; 240 rpm). After the fermentation process, the medium was centrifuged and washed with sterile distilled water, and the resulting purified wet yeast biomass was dried by lyophilization. The answers of this study were the weight wet (WCW g/100ml) and the dry biomass (DCW/100), the cellular viability (UFC/ml), the bioconversion yield regarding the transformation of substrate (sugar) in biomass; pH. The best experiment was for the following cultivation conditions: V_u/V_t ratio 200ml/500 ml; inoculation rate: 20%; stirring rate 240 rpm; for a WCW of 9.92 g/100 ml. The active yeast wine biomass will be further investigated for a scale-up winemaking process, in order to assess the terroir behaviour.

Key words: grapevine; Pietroasa vineyard; Feteasca regala; yeast biomass

Sensory Traits and Consumer's Perceived Quality of 22 Traditional and Modern Apples Genotypes

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The objective of this study was to analyse 22 apple genotypes sensory quality through consumers' perceptions and their preferences. The sensory analysis was performed by trained adult consumers. The questionnaire refers to most important sensory traits for apples, such as fruit appearance (size, shape, colour) and intrinsic pulp characteristics (pulp consistency, juiciness, taste, flavour). The questionnaire used different feature scales (1-3, 1-5 or 1-15) in function of the traits. The highest overall score (external appearance + pulp characteristics) was obtained by the Gala Dicarli Feudeca apple genotype (37.88 ± 1.88) followed by Gala Feuplus (35.43 ± 1.51) and Akane (35.13 ± 3.18). Regarding the external appearance (fruit size, fruit shape and fruit color) the most appreciated apple genotype was Akane which obtained a score of 9.25 ± 1.38 , followed by the Golden Orange (8.44 ± 1.59) and Jonathan (8.43 ± 0.53). Concerning the pulp characteristics (color, consistency, juiciness, taste and aroma) the most appreciated apple genotype was the Elstar which obtained a score of 28.75 ± 1.75 , followed by the T107 apple genotype (27.86 ± 1.46) and Gala Feuplus (27.29 ± 0.75). The study could provide useful background information for apples breeders, farmers and marketing fruits strategy.

Acknowledgments: This work was supported by a grant of the Ministry of Research, Innovation and Digitization, CNCS/CCCDI – UEFISCDI, project number PN-III-P1-1.1-PD-2019-1108, within PNCDI III.

Phenolic Content and Antioxidant Activity of 22 Different Apples Genotypes Grown in Romania

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The apple fruits phytochemicals in human health and nutrition is of almost importance and not yet fully understood. The genotype is considered one of the main factors that determine the composition of bioactive compounds in apples. The aim of the study was to assess the influence of genotypes on the changes in the qualitative and quantitative composition of phenolic compounds and their antioxidant activity in apple flesh and peel. The individual phenolic compounds were identified and quantified by high-performance liquid chromatography (HPLC). Besides, the total phenolic content (TPC) using Folin-Ciocalteu reagent, and the antioxidant capacity method (DPPH) were determined. *Malus floribunda* clone 821 has the highest total phenolic (314.45 ± 15.32 mg GAE /100 g fw) in the pulp and in the peel (482.68 ± 48.22 mg GAE /100 g fw). Somehow expected, among the 22 apple genotypes studied, the highest antioxidant capacity was registered for the *Malus floribunda* clone 821. The current results support the valorisation of ancient apple genotypes as functional foods or as invaluable resources of genetic biodiversity, for being exploited in future apple breeding programs for improving the nutraceutical properties of apples.

Acknowledgments: This work was supported by a grant of the Ministry of Research, Innovation and Digitization, CNCS/CCCDI – UEFISCDI, project number PN-III-P1-1.1-PD-2019-1108, within PNCDI III.

Processing parameters variation for spreadable creams formulations based on beechnut seeds as sustainable ingredient

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Spreadable creams are confectionery products existing in a wide range due to the raw material used for their formulation, being made on the basis of vegetable fats and sugar, as well as: cocoa, hazelnuts, almonds, cashews, etc. The purpose of this study was to formulate a spreadable cream based on beechnut seeds, as sustainable raw ingredient and to compare it with similar spreads existing on the market. The seeds were roasted at various temperatures (125°C-165°C) and different durations (20-35 minutes) in the oven (Memmert UF55), then finely grounded with the mechanical mortar Retsch RM200 set on position 8 (100 rot./min.) for 20 minutes. Structural parameters were assessed by a texture profile analysis (TPA) using CT3 Brookfield Texture Analyzer and viscosity measurements were conducted on the Anton Paar MCR 302 rheometer using the frequency scan test (0.01-100HZ, 20°C). The results were comparable to spreads existing on the market based on sesame, almonds, cashews or peanut seeds. The total polyphenolic content was assessed using the DPPH method and high antioxidant RSA activity was revealed spectrophotometrically. Additionally, the cytotoxicity of the samples was assessed using the MTT assay, in order to encourage the production of the spreadable cream, given the economic, environmental and nutritional advantages it presents.

Keywords: spreadable creams, beechnut, viscosity, tpc, citotoxicity

Acknowledgments: This work was supported by two grants of the Ministry of Research, Innovation and Digitization, CNCS/CCCDI-UEFISCDI, project number PN-III-P2-2.1-PED-2019-5346, within PNCDI III and project number PN-III-P2-2.1-PED-2019-1660, contract no. 387/2020, within PNCDI III.

Phytochemical characterization of sweet potato purees enriched with fennel/anise aqueous extracts

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Lactation failure, one of the most common problems of breastfeeding mothers, could be minimized by adopting varied nutrition alongside the use of herbal galactogogues. Therefore, fennel (*Foeniculum vulgare* L.) and anise (*Pimpinella anisum* L.) have been used as medicine due to their beneficial phytochemical content. Even so, the knowledge in the galactogogues field is still limited. Sweet potato (*Ipomoea batatas* L.) purees processed by hot air and steam convection were enriched with fennel or anise aqueous extract.

This study aimed to determine the phytochemical content of ready-to-eat products, which could be consumed to improve lactation. The antioxidant activity determined by DPPH assay varied between 30.96 ± 1.64 and 36.95 ± 0.85 μ M Trolox/g DW for the samples processed by hot air convection.

Anise aqueous extract increased the carotenoid content by 39.1% for the baked puree, whereas fennel aqueous extract increased it by 91.6% for the steamed one. These findings represent promising nutritional sources for supporting breastfeeding.

Keywords: galactogogue herbs, DPPH assay, carotenoids, sweet potato

Prevention and Control of *Legionella* spp. in a food factory

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Food industry uses water in food production at various levels, apart from its use as an ingredient. The bacteria *Legionella* spp. occurs naturally in water but becomes a hazard to humans if conditions allow them to proliferate in the factories water systems.

Unlike enteric organisms that infect humans via the gastro-intestinal tract, *Legionella* spp. needs to be inhaled via contaminated aerosols and might cause respiratory illness, such as a serious type of pneumonia called Legionnaires' disease and a less serious illness called Pontiac fever, especially in immune suppressed persons and the elderly.

This work shows a plan for control and prevention of *Legionella* occurrence and proliferation in hot and cold-water systems of a food factory, producer of pastries, cakes and other types of sweet foods. A risk analysis was performed before and after the implementation of the plan. The plan include: a) a complete and updated register of equipment, networks or systems; b) the identification of the competencies and responsibilities of the professionals involved; c) the identification of critical points of proliferation and dissemination of *Legionella*; d) a maintenance program and verification of signs of corrosion and contamination of equipment, networks or systems; e) a program for reviewing, cleaning and disinfecting equipment, networks or systems that includes the definition of products, respective dosages and safety data sheets, procedures and periodicity; f) A program for monitoring and treatment, preventive or corrective, of water, which includes the definition of parameters to be analyzed, points and procedures for collecting samples, products, doses, safety data sheets, treatment procedures and sampling frequency and analysis; g) a health surveillance program for workers at risk of occupational exposure to *Legionella*; h) a system for recording all activities and occurrences, control measures adopted and results obtained by the analyzes carried out.

The effectiveness of the established plan and of the control measures adopted to prevent, reduce, and mitigate risks of *Legionella* occurrence and proliferation were after audit.

Keywords: *Legionella* spp. risk; Prevention of *Legionella* occurrence; Food factory

How to apply maritime pine bark extracts to extend the shelf-life of cured-smoked pork products?

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Nowadays there is an increasing consumers demand for natural products without chemical additives. Many bioactive compounds extracted from different plant species are now considered by the food industry, mainly due to their antimicrobial and antioxidant activities, essential requirements for a more natural conservation.

The maritime pine, *Pinus pinaster* Aiton subsp. *atlantica*, is a very abundant tree in western Europe, being the main objective of its plantation the exploitation of wood for various industrial purposes, namely in paper manufacture, as a construction material or for furniture. Recently, maritime pine bark, due to its richness in polyphenols and flavonoids, it has been arousing the interest of the pharmaceutical industry for application in cosmetic products and as a food supplement.

The purpose of this work was to establish the experimental design for the application of pine bark extracts, as a natural food additive, in the production lines of two cured-smoked pork products- a sausage-like product “Chouriça” and smoked belly- aiming to extending their shelf-life.

First, the process flow diagram of each product was drawn, describing, in detail, how the product will move during the process steps including the relationship between major components and how the material flows through the various steps and components.

Secondly, the production steps better adjusted to extract addition were selected, based on products characteristics. For the sausage-like product two possible locations were established: the addition of the dried bark extracts to the mix of the ingredients after maturation and the addition of liquid extracts sprayed on final product before modified atmosphere packaging (MAP). For the smoked belly, as there is no mixture step, the addition of the liquid extracts was just considered before MAP. The amount of extract to be added were also determined according to the desired antioxidant performance, based on previous works using microwave assisted extraction technique. The set of analyses to be performed during products shelf-life was defined. Sampling procedures and frequency for the subsequent analysis were established. The aim was to extend the current shelf-life of the selected products from 120 to 180 days, and from 90 to 150 days, of the “Chouriça” and of the smoked belly, respectively, based on the antioxidant properties of maritime pine bark extracts.

Keywords: Maritime pine; Pine bark extracts; Cured smoked meats

Acknowledgments: This work was financed by the European Regional Development Fund (ERDF) through the Regional Operation Program North 2020, within the scope of the R&D Enterprise Copromotion project PICAR - Functionalization of meat products with maritime pine cortex extracts (NORTE-01-0247-FEDER-069584).

The effect of rice bran oil coating in the Portuguese “Carolino” rice

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Rice is the most widely produced and consumed staple food worldwide, with 480 million metric tons annual production. In the milling process for obtaining white rice, the outer layer of the rice kernel is removed, producing the rice bran, an undervalued by-product whose most frequent outlet is for animal feed. Rice bran oil (RBO) can be obtained by extracting the lipidic phase from the rice bran. RBO is singular among edible vegetable oils because of its unique fatty acid composition, rich in γ -oryzanol, phenolic compounds and vitamin E (tocopherol and tocotrienol). This study aims to nutritionally enrich Portuguese “Carolino” white rice (*Oryza sativa japonica*) by incorporating the rice bran oil on its surface. Three levels of RBO coating were used: 0% (control), 0.3% and 0.6% (m/m). Samples were vacuum-packed and stored at room temperature under dark conditions. Antioxidant capacity (DPPH and ABTS), vitamin E (α , δ and γ -tocopherols) and % of fat were determined. Also, acid value (AV) and peroxide value (PV) were measured on day one and after 183 days of storage to assess samples stability. Samples with 0.6% RBO presented significantly ($p<0.05$) higher concentrations of α -tocopherol (39.52 ± 12.57 $\mu\text{g/g}$). Moreover, it was the only sample where δ -tocopherol was quantifiable (14.05 ± 1.85 $\mu\text{g/g}$). γ -tocopherol values were below the level of detection in all samples. Antioxidant activity, measured by DPPH, increased with the RBO addition but no significant differences were found by ABTS analysis. PV and AV increased overtime for rice coated with RBO, 0.6% samples presenting the highest values ($p<0.05$). The addition of RBO increased the tocopherols concentrations and the antioxidant capacity. It can be concluded that the addition of RBO to Carolino rice is beneficial, adding value to white rice, if used in a proportion of not less than 0.6% and stored for not longer than six months in vacuum-packed conditions.

Keywords: Rice bran Oil, Vitamin E, Carolino rice

Acknowledgements: To project I&DT in co-promotion with RICEPLUS - POCI-01-0247-FEDER-033389. To CISAS - Center for Research and Development in Agrifood Systems and Sustainability - UIDB/05937/2020 and UIDP/05937/2020, financed through the FCT - Fundação para a Ciência e a Tecnologia.

Chemical and functional properties of spent coffee grounds

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Spent coffee grounds represent a major pollution hazard if discharged into the environment. Taking this into account, the aim of this study was to evaluate the chemical and functional properties of these agro-industrial residues in order to identify the characteristics that allow their reuse in certain industrial processes. According to the results, used coffee grounds may present a variety of mineral elements, including magnesium, potassium, sulfur, calcium, phosphorus, iron, manganese, copper, boron and others.

As for the functional properties, coffee grounds have good water and oil retention capacity, emulsion activity and stability and antioxidant potential. Spent coffee grounds can therefore be used for animal feed products in the process of formulating products that require long-term stability of the emulsion.

Antioxidant compounds have many applications in food, cosmetics and pharmaceuticals, due to the fact that they protect against chronic and degenerative diseases such as cancer and diabetes and reduce the risk factors for cardiovascular disease. These results suggest the possibility of reusing spent coffee grounds to obtain such compounds.

Keywords: spent coffee grounds, functional properties, antioxidant activity

Evaluation of Bioactive Compounds from *Artemisia absinthium* L. herba

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Artemisia absinthium L. is a well known and widespread plant that belongs to the genus *Artemisia*. Known as a precious plant for traditional medicine, wormwood has returned to the attention of growers and scientists due to natural antioxidant compounds that could replace synthetic ones. Recent research has shown that oxidative stress can be prevented by using plant antioxidants. Thus we learn that plants are sources of natural antioxidants, especially medicinal plants. It has been shown that oxidative stress can be prevented by using plant antioxidants.

The aim of this study is to discover new natural sources of antioxidants. Antioxidant capacity has become a new parameter for characterizing healthy foods due to bioactive compounds.

Total content of polyphenols, flavonoids, respectively antioxidant activity was determined by the spectrophotometric methods. The obtained results confirmed that all part of *Artemisia absinthium* L. herba could serve as a good source of bioactive compounds in human diet, having, at the same time, a potential use in the development of many innovative nutritional supplement formulations.

Keywords: wormwood, health effects, antioxidant activity, medicinal plant

Antioxidant properties evaluation of some red beet based fresh juices

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Consumption of fresh juices obtained from fruits and vegetables is known as a factor that increases vitality and causes beneficial detoxification processes. Another result of consuming fresh juices is rapid healing of damaged body tissues. Among natural juices, a special attention, due to multiple health benefits, is given to red beet juice simply or combined with other vegetable and fruit juices. This paper aimed to analyze content of ascorbic acid, total polyphenols, antioxidant activity of three varieties red beet based fresh juices, compared to raw materials. Fresh juices assortments were obtained as follows: first (FJ1) of red beet, apple, carrot juices (5:3:2; v:v:v), second (FJ2) of red beet, apple, ginger juices (7,8:2:0,2; v:v:v) and third (FJ3), from red beet, apple, carrot and ginger juices (5:2,8:2:0, 2; v:v:v:v). All juices were obtained in laboratory from fresh raw materials and no additives were used. Among raw materials used, apples (Jonathan variety) had highest content of vitamin C 12.85 ± 0.32 mg/100g FW, followed by red beet (7.82 ± 0.18 mg/100g FW) while red beet had highest total polyphenol content (8.83 ± 0.18 mg gallic acid/g FW), followed by ginger root (2.81 ± 0.07 mg gallic acid/g FW). In terms of antioxidant activity, red beet stood out with a much higher antioxidant activity than other raw materials: 69.97 ± 0.84 mg Trolox/g FW, followed by carrots with 7.14 ± 0.18 mg Trolox/g FW. Of the three fresh juice assortments, although FJ1 and FJ3 had the highest ascorbic acid content (19.36 ± 0.41 mg/100g and respectively 19.08 ± 0.36 mg/100g), FJ2 variant had the best antioxidant activity (46.43 ± 0.54 mg Trolox/g), being also the richer in polyphenolic compounds (4.23 ± 0.11 mg gallic acid/g).

Keywords: natural juices, antioxidant activity, ascorbic acid, polyphenols, red beet.

Sensory and physical-chemical characterization of different types of pasta

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Pasta is a basic food that is traditionally eaten all over in Romania, in soups or broths, in the form of pasta with cheese, sauces or sweet desserts. With the rapprochement of Romanian civilization with that of Western European countries, the consumption of pasta in Romania is constantly increasing.

Pasta is included in the category of food products with a relatively long shelf life, obtained from different types of flour (most often wheat flour, recently durum wheat flour) and water. To these two basic components it can be added different additives, such as: eggs, tomato paste, carrot juice, spinach and so on.

The high nutritional value of flour products is based not only on their energy intake, conferred by the high content of carbohydrates and fats, but also on the value of all components that represent forms that can be easily assimilated by the human body.

In this study, the commercial samples of wheat flour pasta were characterized from sensory and physical-chemical point of view. Thus, it was determined the appearance, color, smell and taste of the samples, but also the water content, the acidity, the breaking load when bending, the increase in volume and the boiling behavior, and the egg content.

The obtained results show that all analyzed pasta samples situated within standard values.

Keywords: types of pasta, physical-chemical evaluation of pasta.

Vanadium-peroxido materials as catalytic precursors in the oxidation of aromatic substrates

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Metal complex catalysts (metal-organic and organometallic) have played a crucial role in the development of new materials over the past century. The most effective catalysts used so far involve several transition metal ions, with emphasis given on Ti, V, Cr, Mo, W and Re, preferably in their highest oxidation states. In fact, the discovery of the catalytic activity of some of these metals in oxidation reactions with H₂O₂ had been made earlier in the first half of the last century.¹

Among the various metal catalysts studied so far and used, vanadium catalysts are nowadays an important field of research, mainly due to the importance of their structural, magnetic, optical properties, and potential applications in catalytic oxidation processes, involving various organic compounds and their relevance in abiotic and biological systems.² A radical oxidative reactivity toward aromatics has also been observed with vanadium peroxides, particularly when certain ligands as picolinate anion are bound to the vanadium center.

As vanadium-peroxido complexes are synthetically useful oxidants of organic substrates, the single and bis(peroxido)vanadium(V) compounds have been shown to transfer oxygen effectively, thus leading to the generation of valuable synthetic molecules, as precursors to other organics or useful organic chemicals themselves, derived from a broad family of substrates through oxidation with enhanced selectivity.

In an effort to develop new catalysts, capable of operating at low temperatures and performing efficiently on catalytic transformations of organic substrates of importance to industrial synthetic processes, new ternary V(V)-peroxido complexes were synthesized in the presence of well-defined zwitterionic substrates.³ The new hydrolytically stable and highly effective vanadium(V)-peroxido materials were characterized by elemental analysis, FT-IR, Raman, NMR spectroscopy in solution and the solid state, UV-Visible, cyclic voltammetry, thermogravimetric analysis, and X-ray crystallography. The physicochemical properties of the title compounds were amply exemplified in their catalytic reactivity toward organic substrates, employing GC-MS-TIC and GC-FID techniques. The collective results place an emphasis on the importance of appropriately designed and synthetically isolated vanadium-peroxido species with significant specificity in their catalytic reactivity at the abiotic and biological level.

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Development of vanadium-peroxido-zwitterion double phase catalytic system for the hydroxylation of benzene

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Over the past century, research efforts have uncovered fundamental aspects of metal-assisted reactivity profiles of organic substrates and metal complex species acting as catalysts in important industrial process transforming organic substrates of aromatic nature.^{1,2} To that end, in the past few years, new metal ionic complexes have started to emerge with promising chemical reactivity profiles as catalysts in industrial processes. In fact, investigation has revealed that vanadium complex compounds can efficiently catalyze the oxidation of benzene to phenol with molecular oxygen. The reaction is truly catalytic only in the presence of a reducing agent able to recycle the oxidized catalyst.

In that context, single peroxide-containing vanadium complexes³ as well as bis(peroxido)vanadium(V) compounds have been shown to transfer oxygen effectively, thereby leading to the generation of valuable synthetic molecules, derived from a broad family of substrates through oxidation with enhanced selectivity. In an effort to develop such new vanadium catalysts, capable of operating at low temperatures and contributing efficiently to catalytic transformations of organic substrates of importance to industrial synthetic processes, new V(V)-peroxido complexes were synthesized in the presence of amphotERICALLY configured novel organic zwitterionic substrates. The newly emerging ternary vanadium(V)-peroxido materials were characterized by elemental analysis, FT-IR, Raman, NMR spectroscopy in solution and the solid state, UV-Visible, cyclic voltammetry, TGA, and X-ray crystallography.

The reaction media linked to the catalytic profile of the vanadium species had a strong influence on the reactivity of the catalyst.⁴ It was found that a double phase system, having being composed of water–acetonitrile–benzene, is an efficient solvent system for the hydroxylation of the benzene. The physicochemical properties of the title compounds were amply exemplified in their catalytic reactivity toward organic substrates, employing GC-MS-TIC and GC-FID techniques.⁵ The cumulative findings emphasize the importance of appropriately designed synthetically isolated vanadium-peroxido species in promoting hydroxylation transformations of benzene.

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A mechanical property study of composite biomaterial scaffolds used as substrates in tissue development applications

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The use of scaffolds is at the forefront of research in tissue engineering, for the construction of implants and/or grafts, with a variety of biomedical applications in different types of tissues. The construction of such scaffolds faces difficulties related to biocompatibility conditions of the materials used, their structural integrity in vivo, and their biological behavior when pursuing development of new tissue(s).^{1,2}

The research goals of this work include the study of the a) structure and composition of new materials used in scaffold fabrication, and b) internal geometric morphology and distribution of the material in the desired scaffold, collectively creating a nucleus of tissue regeneration, able to integrate into the tissue mass at the treatment site. Scaffold morphology must combine robustness and resistance to mechanical stress, with the existence of a suitable "empty" space acting as a "guide" to the growth of cell structure and, ultimately, tissue development. To that end, parameters related to the type of tissue to be regenerated, the original structure, and its location as a whole, must be combined with the characteristics of the patient receiving the implant. These characteristics are related to age, diet, exercise, etc.

Based on the aforementioned grounds, fabrication of the appropriate scaffold must combine the systematic design of porosity, the natural porosity of the material to be used, with the possibility of developing nutrition transfer channels in the cells, removing residues and creating a vascular network. An important factor in the effectiveness of such substrates, which is studied in this work, is the mechanical properties of the networks and how they are affected by the type of internally designed morphology, the natural porosity of the material and the material itself. For those reasons, cylindrical specimens of diameter $D = 10$ mm and height $H = 20$ mm, bearing different internal structure, were constructed using a 3D printer and PLA as base material. Subsequently, they were subjected to mechanical compression tests. The results show the behavior of the new scaffolds in both the elastic region and the collapse region, indicating the behavior of a foam polymeric material related to the design porosity of the structure. Future goals of this work include the study of changes in the scaffold structure so that it is used to assess in vitro biological effects, crucial to developing biomaterials.

Acknowledgments. This research is supported by the Operational Program "Human Resources Development, Education and Lifelong Learning" (NSRF 2014-2020), Act: "Strengthening the Human Research Resources through the Implementation of Doctoral Research" - MIS 5000432

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Design and synthesis of liposomic nanoparticles in drug delivery

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Liposomes are spherical vesicles having at least one lipid bilayer. Liposomes can be used as delivery vesicles for the administration of nutrients and pharmaceutical drugs, including lipid nanoparticles in mRNA/DNA vaccines [1,2,3]. These vesicles are able to create emulsions, such as oil in water (o/w) or water in oil (w/o), thus projecting a potential for the development of appropriate carriers to treat diseases that require hydrophilic or hydrophobic drug agents. For that purpose, a research activity was launched in our Laboratory, in order to develop liposome carriers able to act as hosts for the encapsulation and delivery of natural products with medicinal action. As such carriers, liposomal nanoparticles have been selected for development, based on dipalmitoylphosphatidylcholine (DPPC), distearoylphosphatidylcholine (DSPC) or both, which are stabilized in o/w emulsions. The target material in this case was natural propolis. The aforementioned liposomal particles were prepared according to protocols in the literature, including cholesterol in an appropriate molar ratio for their stabilization. The prepared liposomes a) blank, and b) containing encapsulated propolis, were isolated and purified by size exclusion chromatography (SEC). The resulting new materials were isolated in such a way that they were evenly distributed in the emulsion, with the subsequent physicochemical characterization indicating their identity (SEM microscopy). DLS experiments showed that their diameter was around 128 nm, with ζ -potential measurements indicating values ranging very close to -30 mV. These new propolis-containing nanocarrier materials are currently used in biological experiments that address oxidative stress and cell integrity to resist oxidative damage in sensitive tissues, such as the hippocampus in the brain and insulin-producing β -pancreatic cells against Diabetes mellitus II.

Acknowledgments. This research is supported by the Operational Program "Human Resources Development, Education and Lifelong Learning" (NSRF 2014-2020), Act: "Strengthening the Human Research Resources through the Implementation of Doctoral Research" - MIS 5000432.

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Determination of physico-chemical characteristics of some varieties of bread with seed mixtures

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Foods high in carbohydrates are an important part of human diet and grain-based products have an important role in people's regular diets. Bakery products and bread making is one of the oldest occupations in Romania, bread being one of the main components of Romanian people daily food. The raw materials used for bakery products were rye, oat, barley, rice and corn, either mixed or separately, and more recently, wheat.

Over the years, the favorite bread type of high-income people was white bread, while middle and poor people used to eat black bread. In 20th century, diet preferences changed and black bread became the favorite bread variety due to its superior nutritional value. In the last decade integral bread started to be enriched with different types of seeds to optimize the bread quality and taste.

The present paper aims to assess the quality of bread with seed mixtures using organoleptic and physico-chemical analyzes. The salt content ranged from 0.8 – 1.3%, moisture in the range of 38.8 - 45.7%, while porosity analysis indicated values between 62.5% to 67.7%, and acidity ranged between 2.7° to 5.4°.

Mathematical models were used to identify the seed mixtures with best complementary influence on nutritional bread quality

As concluding data, all analyzed bread samples were within the standard values.

Keywords: seed mixtures, bread types, evaluation of quality, cluster analysis

P₄₅

Food pH - new selection criterion in the diet of consumers

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An amount of information from various sources can be studied by accessing the expression "alkaline diet" on the internet. It is promoted as a healing cure for many diseases such as cancer, diabetes, cardiovascular diseases or osteoporosis. Information materials, often erroneous, are actually offered for commercial purposes, aiming at placing so-called healing products on the market. Among consumers, a new criterion for assessing the benefits of food products to the body has emerged, with some consumers having obsessively linked the quality of a product to its pH (alkalinity). This is wrong because it cannot be submitted, for example, a citrus fruit has an alkaline pH. From a scientific point of view, the alkalinity or acidity of food in the body is assessed using the PRAL index (potential Renal acid load). In other words, protein-rich foods with positive PRAL increase the acid production of the organism (decrease the pH) and those with NEGATIVE PRAL, such as vegetables and fruits, increase the alkalinity (increase the pH). This documentary research analyzes the existence of clinically confirmed data which are supporting the adoption of a 'alkaline diet'. Clinical studies have shown that there is a link between the 'alkaline diet' and the maintenance of the health status of the organism. However, this strict diet is beneficial for a short period of time. To conclude, there are certain reservations, with the benefits of any diet depending on the organism and individual characteristics. In order to determine whether a strict diet can be followed without endangering the health of the organism, it is recommended to consult specialist nutritionists. The criterion related to food alkalinity is insignificant in relation to the maintenance of a balanced diet, age-specific and adapted to the state of health of the organism.

Keywords: healthy food, alkaline diet, disease, PRAL index, pH

Moringa oleifera - nutritional and antimicrobial properties. A review

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Moringa oleifera is a tree native to southern Asia. Phytochemical characteristics have led to its cultivation in other parts of the globe. There are attempts to acclimatize even in Romania. The richness in minerals, vitamins, amino acids, sugars far exceeds the content of some agri-food products, and the content in unsaturated fatty acids of the seeds recommends it as a promoter of human health. In this review we presented the nutritional and antimicrobial properties of this plant from which everything can be capitalized, from the root to the seeds. The paper is based on extensive documentation and selection of essential results. The benefits of this miraculous tree are many and the compounds it contains can make up for the nutritional deficiencies in the diets of people in many countries. The range of bioactive compounds is an argument of antimicrobial activity and the possibilities of their use in pharmacological formulas.

Keywords: God's tree, phytochemicals, antimicrobial potential, nutritional properties

A new perspective on the nutritive and bioactive properties of chestnuts flour for use as a functional food ingredient

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In the food industry, the research in recent years has been conducted in order to explore the potential of some unconventional materials in order to design healthier and more nutritionally valuable foods. The interest in value-added food product has risen in the past few years. Moreover, the need for innovative and fortified food products is imperative. Consumers are more and more interested in food and nutrition as a broader issue than just a way of eating to function. Therefore, a new generation of food products are needed on the market. There are still lots of resources that have not been used at all, or haven't been used enough. One of these resources is represented by chestnuts. The aim of this study is to gather comprehensive knowledge and get an insight of the use of chestnuts flour in different value-added foods and to identify the possible gaps in the current knowledge. The chestnut as a raw material has been brought to light nowadays, but its properties are not yet sufficiently exploited. Chestnuts flour is obtained from chestnuts that are dried for several hours in a stream of warm air, peeled and then subjected to grinding. The resulted flour can be stored for several months at room temperature or for several years at 4°C before use and/or sale. Its biochemical composition is similar to that of many cereals: starch is the main component, while its content of proteins, lipids, minerals and vitamins (B1, E and C), recommend the chestnuts flour as an excellent substitute for people who need a gluten-free diet. The commercial use of chestnuts flour has increased in the food industry, especially in European countries, this being used as valuable ingredient to obtain cakes, cookies, pasta, milky pudding products, bread, breakfast cereals, soups and sauces. Our work will overview the current trends registered in exploring the nutritive and functional properties of chestnuts flour in order to be used as valuable ingredient for designing value-added foods. Moreover, the development of new products would meet consumer expectations and will contribute both to the generation of the revenue for the food industry and to a more sustainable use of chestnuts.

Keywords: chestnuts flour, functional foods, value-added food products, nutritive and bioactive properties

The role of stabilizers on the physicochemical and organoleptic properties of milk-based ice cream

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Ice cream is one of the most nutritive dairy products. It is obtained by freezing a mixture consisting of milk, milk products (cream, milk powder), sugar, aromatic substances and stabilizers, with air incorporation in this mixture during freezing. Stabilizers are natural or synthetic compounds added in small amounts in ice cream, that improve the aeration, structure and texture of the finished product. The aim of this study was to characterize the effects of selected stabilizers on the physicochemical properties of milk ice cream. Two stabilizers were used: xantan gum (0.2, 0.6, 0.8 and 1.2 g/100 g of the mixture) and kappa carrageenan (0.2, 0.4, 0.6 and 0.8 g/100 g of the mixture). The addition of these two stabilizing systems, on physicochemical (density, pH, overrun, viscosity, melting time) and sensorial properties of ice cream samples was done after a specified storage time of: 24 h, 1 month and 6 months. The results showed that increasing concentration of both selected stabilizers resulted in a decrease in the melting time of ice cream. The lowest overrun value and shorter melting time was found in the samples with k- carrageenan addition. On the other hand, no influence of stabilizing systems on pH of examined ice cream was found. Addition of xantan gum and k- carrageenan cause statistically significant changes in density and viscosity values of ice cream samples during the storage period. The highest scores in the sensory evaluation were obtained for ice cream with xantan gum, and 0.2 g/100 g and 0.4 g/100 g of k- carrageenan.

Keywords: ice cream; xantan gum; kappa carrageenan

Research on the mineral content of different types of dry pasta

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Pasta is a food product obtained by drying the dough of wheat or corn flour, to which salt or eggs can be added. Pasta can also contain vegetables or other ingredients (cheese, meat). Some types do not contain flour at all, being obtained exclusively from vegetables (e.g. red lentils). In this study we evaluated from the nutritional point of view, 10 assortments of pasta available on the Romanian market. Experimental analysis of the mineral content of dry pasta assortments were performed using the X-ray fluorescence spectral analyzer (FRX). The results show that although the mineral content varies from one assortment to another, the pasta types taken in the analysis have significant amounts of Fe, Mg, Zn, K and Mn. Therefore, from the study of literature and from our own research we can conclude that products from lentils, corn, or those with added greens, vegetables and meat are characterized by an increased nutritional value, being recommended for consumption as an alternative to the classic assortments of pasta.

Keywords: FRX method, pasta assortments, nutritional value

P₅₀

Eco-efficient valorification of some by-products in order to obtain gellified products

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The increasing number of diabetes and obesity cases has led a growing the request for low-sugar products such as jellies and jams. Five jelly formulations, named peltea, were prepared using quince and apple by-products (peel and stub). This study was focused on the effect of total or partial substitution of sugar with xylitol (0–100% xylitol) on CIE L* a* b* color, texture profile analysis, rheological behavior, consistency, sensorial characteristics, phytochemical compounds and antioxidant activity for each gellified products. After rheological evaluation it was observed that the jelly samples presented a time independent pseudoplastic behavior (characteristic for non-Newtonian fluid) with high values of the regression coefficient R^2 . The instrumental analysis of texture revealed that the sugar substitution with xylitol induced a firmer structure, proportional with the xylitol concentration until 75%. Above this value, the jelly firmness decreased to values comparable with the control samples. Also, we found that gellified products sweetened with xylitol present lower values for some sensorial characteristics, however, they showed more intense red colour. This research confirms that it is possible to use xylitol as an alternative sweetener to total or partial replacement of sugar in peltea production.

Keywords: quince, apple, by-products, sugar reduction, xylitol, rheology, sensory analysis

P₅₁

The eating behavior of the Romanian consumer - preliminary study

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In recent years, Romanians are increasingly aware of the food-nutrition-health relationship, so that more and more people choose to eat healthy from a quantitative and qualitative point of view. However, excessive concern for healthy foods and their preparation can have unintended physical, psychological and social consequences (malnutrition, social isolation, development of mental disorders, etc.). Obsessive-compulsive disorder for healthy eating is a deviant behavior known as orthorexia.

The purpose of this study was to observe the eating behavior of the Romanian consumer. In this context, the survey method used was a questionnaire with 29 items based on the validated Ortho-15 questionnaire model. The study involved 237 respondents aged between 18 and 60 years, of which 31.2% were male and 68.8% female, most being young people, students and pupils, aged 18- 25 years; 30.38% with BMI (kg /m²)> 25 (of which 21.94% overweight).

The study data show that 35% of those who participated in this survey consider that they have a healthy diet; 10.1% underestimate their weight, and 62% believe that their physical appearance is closely related to the consumption of healthy foods. Only 15% of respondents know the term orthorexia, most being familiar with the terms anorexia (51%) and bulimia (34%).

The results obtained may be the base for a further research on eating disorders of young people in Romania.

Keywords: eating behavior, orthorexia, food, health

P₅₂

Intermittent fasting-an efficient diet for a healthy body and an active lifestyle for students- short study case

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Due to the pressures which students are subjected to on passing exams and completing projects, they face a particularly high prevalence in terms of body weight instability, which leads to decreased cognitive, affective, psychomotor functions, but also changes in body structure. Restricting food intake over a period of time brings benefits with a broad spectrum of health, with significant positive effects on both the brain (attention, focusing, memory) and physical appearance (maintaining body proportions).

This study aimed to evaluate the beneficial effects of intermittent fasting diet (18:6) on body composition, cognitive function, and general well-being of students. The study was conducted over a period of 10 weeks and consisted in time-restricted eating, without reducing the daily energy intake and without changing the quantitative and qualitative profile of macronutrients in the diet. The results showed small variations in anthropometric measurements (circumference: arms, chest, waist, abdomen, hips, thighs, legs and weight) and blood biochemical parameters. There was an overall improvement in metabolic health markers, optimization of circadian clocks, self-esteem and energy, and an increase in cognitive abilities.

In conclusion, adopting an intermittent fasting diet as a lifestyle may be an effective strategy for increasing students performance.

Keywords: fasting diet, health benefits, cognitive functions, well-being

P₅₃

Food traceability - concept and perceptions in the european context

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The aim of this paper was to emphasize the importance and defining elements of food traceability. The objectives of traceability along the food chain, from producer to consumer, were presented.

Traceability is a multiple, modern and complex food concept at European level that guarantees a high level of protection for food consumers.

Traceability was generated on the one hand by the concern for consumer protection and on the other by the concept specific to large companies, in which the production of goods is organized on macrosocial principles, ie where the world of producers does not intersect and is not known to the world. consumers, ie where the producer is anonymous to the consumer, even if they both live in the same city.

Traceability, as a means of managing risks, substantially influences the reduction in the likelihood of delivering dangerous products to consumers, as it allows the identification of the cause of non-compliance, the tracking of products, raw materials and contaminated materials.

Keywords: food traceability, food safety, consumer protection

P₅₄

The global danger of food insecurity

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Global conflicts, climate change, the COVID-19 pandemic and the current war in Ukraine are plaguing the world in a dizzying global food crisis and at the same time, they are putting pressure on food security around the world and their disastrous impact. affects the ability of many families to feed their children.

A study by a group of high-level food security and nutrition experts found that the impact of the Covid 19 pandemic continues to affect food systems and jeopardize the global population's access to balanced nutrition. The global food crisis has caused not only major supply chain disruptions and a significant downturn in the global economy, but also the emergence of uneven steps towards recovery, which has led to an imbalance in the supply of food to the population.

Although it is not possible to fully quantify the impact of the current conflict in Ukraine and the pandemic between 2020 and 2022, it remains clear that society is facing serious problems, which raises global concerns about the conditions for the fair production and distribution of pandemics. food, amid the global economic downturn and income inequality associated with rising food prices and volatility.

All of these consequences can be a factor in food insecurity if political authorities fail to take appropriate measures to ensure food security and deliver healthy food at affordable prices.

Keywords: food insecurity, food crisis, Covid 19



Proximate composition of noodles with addition of nettle leaf powder (*Urtica Dioica*)

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Stinging nettle (*Urtica dioica*) is a valuable source of nutritional and biologically active compounds with beneficial effects on health. The leaves of this plant contain increased amounts of fiber, minerals and vitamins, as well as a number of antioxidant compounds (polyphenols, carotenoids, etc.). In view of these considerations, this study aims to obtain the noodles of improved nutritional composition, using as raw material wheat flour potentiated with nettle powder and evaluating their proximate composition. White wheat flour with the addition of 0;5; and 10% nettle powder obtained from the young leaves of stinging nettle (*Urtica dioica*) from spontaneous flora was prepared for pasta. The results obtained from the proximate composition analysis show that the pasta enriched with nettle powder obtained with 5, respectively 10% nettle powder has significantly higher contents of minerals, proteins, fibers and less fats than of noodles obtained from wheat flour without the addition of nettle powder (witness). The concentration of carbohydrates in the analyzed noodle samples decreases as the percentage of nettle added to wheat flour increases. These values are due to the increased content of minerals, fiber, protein and even fat and lower carbohydrates from nettle. This experiment reveal that the use of wheat flour enriched with nettle powder improves the nutritional qualities these pasta types.

Key words: Noodles, nettle powder, nettle noodles, proximate composition.

Sensory analysis of classical and flavored beer products – discrimination by PCA multivariate statistical analysis

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The objective of the study was the sensory analysis of some sorts of beer flavored with various fruit flavors and, for comparison, of some sorts of classic beer. Similarity / dissimilarity of samples was assessed using PCA (Principal Component Analysis) multivariate statistical analysis [1-4].

For the sensory analysis, a panel of 12 subjects was used using the "5-1" scale method for maximum acceptability, respectively minimum acceptability, in the case of significant sensory parameters: appearance, color, foaming capacity, smell and taste. Six varieties of beer were evaluated, namely: flavored beer with cranberry flavor (C), grapefruit (G), lime and mint (M), lemon (L), classic non-flavored blond beer (B), respectively classic non-flavored dark beer (N). The results of the sensory analysis were processed using PCA analysis, which led to the following conclusions: (1) there is an obvious acceptability for blond beer samples compared to black beer; (2) the samples of beer flavored with fruit flavors show varying acceptances, the best rated being the beer flavored with lemon flavor, while in the case of the other samples the acceptability of consumers was very different; (3) there was a great similarity between the samples of classic blond beer and those of beer flavored with lemon; (4) The most important parameters in terms of consumer acceptability for beer samples are smell / taste and appearance, and in some cases foaming.

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Antioxidant activity and kinetics of cereal pasta functionalized with forest fruits

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The aim of this study was to evaluate the antioxidant activity of functionalized pasta with berries using the DPPH· (2,2-diphenyl-1-picryl-hydrazyl) method and to differentiate functionalized pasta from conventional pasta by evaluating the reaction kinetics of antioxidant compounds present in food [1-5].

Pasta was obtained from various types of flour (wheat, rice or oats), without or with the addition of eggs, respectively functionalized with berries (blueberries or blackberries). The dried and ground pasta was subjected to solid-liquid extraction in ethanol, and the filtered and normalized extract was monitored spectrophotometrically at 517 nm in the presence of the ethanolic solution of DPPH· 0.1 mM. The free radical scavenging activity (RSA) was calculated with the relation: $RSA (\%) = 100 - A_t/A_0 \cdot 100$ at different reaction times (A_0 - represents the absorbance of the initial mixture / at moment t). The reaction kinetics of antioxidant compounds in berry-functionalized pasta extracts were evaluated as average reaction rates over representative time intervals, resulting from the analysis of the variation of DPPH· concentration over time.

The evaluation of the antioxidant activity of functionalized berry pasta led to the following main conclusions: (1) functionalized berry pasta has significant antioxidant activity compared to non-functionalized pasta, especially when using blueberries; (2) functionalized pasta with berries, obtained with the addition of egg, has an important antioxidant activity for a longer time due to the interaction of antioxidant compounds in berries with the food matrix with a higher protein content, according to kinetic data.

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P₅₈

The influences of *Aloe Vera* gel added in yoghurt

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This paper presents some results of our work about a yoghurt with different proportions of *Aloe vera* gel (0 – 14%). We prepare yoghurt from cow milk and raw *Aloe* gel (direct from leaves). The results show that smell and taste of yoghurt were not variated by *Aloe vera* gel added, but consistency and syneresis were negativ influenced by increase of *Aloe vera* gel content. The acidity was not influenced by gel amount, but the polyphenols content and antioxidant activity were directly correlated by *Aloe vera* gel added. By microbiological point of view was not observed any semnificative influences consecutive *Aloe vera* gel added.

Obtaining and characterisation of an innovative dessert from nuts

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The aim of this work was to obtain an innovative sweet range products from four kinds of nuts: peanuts, walnuts, hazelnuts and chestnuts, as a spreadable cream or a desert ready-to-eat, to general consumption, being very suitable for people with diabetes or those on a ketogenic diet. So, we prepared a range of mixtures from nuts, cocoa and erythritol as a sweetener. According to the recipe and technology process, we obtained spreadable cream or different forms of dessert. These products were evaluated by sensorial examination and some physical-chemical characteristics (acidity, fat, protein, sugar, polyphenols content and antioxidant activity). The results of this work show a very good acceptability of all products: appearance - different, depending on the recipe and the degree of crushing: spreadable paste or in various forms: balls or slices, aroma and smell - characteristic of roasted nuts and cocoa, taste – specific, sweet, delicious. The contents of fat, protein were depending on the recipes, but the sugar content was much lower compared with similar products from the market.

The quantitative methods of water determination in food

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Water plays an essential role in the physical and chemical functions of our body, the food we consume, and the materials around us.

The determination of the humidity constitutes one of the essential methods used in the control of the food. The humidity is checked for all the foodstuff, either directly valuing the quality of water, or indirectly by measuring the dry substance remaining after the removal of water.

The water content is also important for the processing and handling of the following categories of products: cosmetics, pharmaceuticals, food, personal care in the pulp and paper industry, etc.

The purpose of this study was to highlight and compare the different types of analyses used in the quantitative determination of water in various foods. The determination of water from various products can be done by physical or chemical methods, and by direct or indirect methods. Measuring the amount of water contained in certain materials can be very difficult due to the complexity of the water molecule and its strong intermolecular binding capabilities. In most cases, the measurement of water is better defined as the measurement of moisture content.

Key words: moisture, method, drying, water content

P₆₁

Polyphenols content in some berry fruits from Romania

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Berry fruits are valued mainly for their nutraceutical properties, and are among the fruits with the highest antioxidant activity due to their high content of phenolic compounds. The aim of this research was to assess the total polyphenol content of fruits from two regions of Romania. The total polyphenol content was determined according to the Folin - Ciocalteu modified method, Registered. Due to records of the high values of polyphenol content in berry fruits, these fruits can be considered potential sources of antioxidants for direct consumption or for use as ingredients for food products or food supplements. Differences of total polyphenol content are observed both between populations from the same region and from different regions. The accumulation of polyphenols in berry fruits is influenced by changes in environmental conditions.

Key words: berry fruit, polyphenol content; Folin - Ciocalteu method

Pressure. Alternative to thermal processing

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Search for and consumption of minimally processed foods increases significantly. To meet these requirements, food industry is trying to replace advanced heat treatments (HTST (High Temperature/short Time), UHT (Ultra High Temperature)), with treatments at lower temperatures, close to those of human body. Sensory, nutritional, functional limits, remaining bioactivity transferred to finished food product are also conditioned by "seriousness" of technological process and advanced processing. Knowledge, innovation, access, development of minimally invasive processes, having as a substrate physical principles of action/transformation, non-thermal, with minimal impact on food matrix, can be alternative of advanced processing. In this area, a section is also assigned to study of action of phenomena/processes that have as an operating element superior hydrostatic pressures (HHP) and/or superior pressure processing (HPP) (100÷1000 MPa), for a determined time (seconds/minutes), at temperatures in range of 20÷70°C. In literature, term "high pressure sterilization" (HPS) is also circulated, case of inactivation of spores to achieve "commercial sterilization". An important attribute is minimal effect on covalent bonds, being alternative to conventional thermal processing technologies (blanching/pasteurization/sterilization), by "non-thermal" inactivation of the enzymatic/microbiological activity without interventions on qualities of product, generating safety and extending shelf life. Effectiveness of process on food quality and safety is not only influenced by extrinsic factors (process (time of action, pressurization/decompression rate, pressure and temperature size)), but also by intrinsic factors of food matrix (elementary structure, ratio of structural elements (especially mode of binding and weight of water) and physiological states of microorganisms). This emerging method of processing does not require intervention of synthetic additives that induce negative perceptions of consumer. Specialized studies demonstrate potential, capacity, access to pressure potential as an alternative to obtaining food products with qualitatively sensorial attributes/nutritional and salubrious bioavailability [1–6].

Key words: pressure, minimal processing, food matrix, enzymatic/microbiological activity, alternative.

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Acknowledgement: The authors are indebted to the Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania", Faculty of Food Engineering, Timișoara, for financial and technical support.

P₆₃

The biocatalytic influence of amylase in milling and baking technology

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This study presents the influence of amylase in milling and baking technology. The rheological characteristics of the dough was determined by using the alveographic method. The positive or negative effect of amylase on flour depends on the type of flour. The addition of amylase has a positive effect on the rheological properties of flour. As a result, the enzyme controls the adjustment of the falling index, stimulates the growth in the oven, improves the browning process and prolongs the storage time of the finished product, which indicates an increased volume and an improvement of the structure and a better porosity of the core. The quality of bakery products depends largely on the enzymatic activity of the flour from which they are obtained. The amylase activity of the baking flour influences the production process of the baking products, ensuring the proper development of the dough fermentation process, as well as the baking process.

Key words: dough, flour, rheological characteristics, amylase

Enzymatic action of protease in cracker biscuits production technology

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This study presents the influence of protease in cracker biscuits production technology. The rheological characteristics of the dough was determined by using the alveographic method. Adding protease in the dough improves finished product quality, making the biscuits more crispy, more porous (easily melts in the mouth) and more tender. Protease weakens the dough stability, improves the dough extensibility and better quality of gluten flour type which can be considered suitable for the preparation of biscuit dough. Addition of proteases in the bakery is for strong gluten flour or regular flour for the purpose of modeling certain rheological parameters for a number of specific processes such as those for obtaining biscuits etc. The dough proteases hydrolyze peptide bonds from the dough which are present in protein molecules. Proteases should be added very carefully in controlled amounts. They have irreversible weakening effects on gluten and therefore are used to treat very strong flours. Proteases help gluten softening during long fermentation at low pH of the dough for biscuits.

Key words: biscuits, rheological characteristics, protease

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58. Frîncu Mihai

G

59. Georgescu Liviu-Andrei
60. Gribiniuc Mihaela

H

61. Hădărugă Daniel Ioan
62. Hădărugă Nicoleta Gabriela
63. Hatzidimitriou Antonios
64. Hegheduş-Mîndru Gabriel
65. Hegheduş-Mîndru Ramona Cristina

I

66. Ion Violeta Alexandra
67. Ionica Dina
68. Isac (Mocanu) Mirela
69. Ivanis Delia

J

70. Jakšić Sandra M.
71. Jimborean Mirela

K

72. Karakosta Cleopatra
73. Karakosta Vasileia
74. Kioseoglou Efrosini

75. Kiss Andreea – Annemarie
76. Koutsotolis L.

L

77. Leahu Ana
78. Løes Anne-Kristin

M

79. Madosa Emilian
80. Manoliu Andreea
Georgiana
81. Măntăilă Silviu
82. Marculescu Ioana Simona
83. Maroulis Marios
84. Martău Adrian Gheorghe
85. Martis Georgiana
Smaranda
86. Matei Anca-Sorina
87. Matsia Sevasti
88. Medeleanu Madalina-
Lorena
89. Megyesi Corina Iuliana
90. Michiu Delia
91. Mihaljev Željko A.
92. Militaru Madălina
93. Mișcă Corina Dana
94. Miteluț Amalia C.
95. Mitroi Cristina
96. Mocanu Gabriel Dănuț
97. Moigradean Diana
98. Moldovan Camelia
99. Moraru Dana - Iulia
100. Mudura Elena
101. Mureșan Andruța E.
102. Mureșan Crina C.
103. Mureșan Teodora
104. Mureșan Vlad
105. Muste Sevastița

N

106. Neagu Corina
107. Nebancea Nicoleta
108. Negraru (Tănase)
Anamaria
109. Nicolae Alexandru
110. Nicolae Cătălina I.
111. Nistor Oana Viorela

O

112. Ochiană Andreea Petruța
113. Oltean Alexandra Iulia

114. Ostan Mihaela

P

115. Pahipetis A.
116. Páll Emöke
117. Pantea Neli
118. Parvulescu Oana Cristina
119. Pașca Claudia
120. Pelić Miloš M.
121. Perepelytsia Iryna
122. Perikli Maria
123. Perța-Crișan Simona
124. Petre Izabella
125. Pinto Ricardo Pereira
126. Pîrvulescu Luminița
127. Poiana Mariana Atena
128. Pop Anamaria
129. Pop Carmen Rodica
130. Pop Ioana-Alina
131. Popa Elena Elisabeta
132. Popa Elisabeta E.
133. Popa Mirela Viorica
134. Popa Mona Elena
135. Popescu Georgeta- Sofia
136. Popescu Paul A.
137. Popescu Sorina
138. Popov Nenad S.
139. Pușcaș Andreea

R

140. Raba Diana Nicoleta
141. Rad Maria
142. Rădoi Petru Bogdan
143. Radu Daniela
144. Radu Florina
145. Radu Steluta V.
146. Rădulescu (Corpaș) Laura
147. Ranca Aurora
148. Ranga Floricuța
149. Reis Núria
150. Rinovetz Alexandru
151. Ravis Adrian
152. Rodrigues Rui M. D.
153. Rogkotis Konstantinos
154. Rogkotis K.
155. Rončević Srđan D.
156. Ropciuc Sorina
157. Rotar Ionela-Marinela
158. Rotariu Lia-Sanda
159. Rusu Alexandru

S

- 160. Salanță Liana C.
- 161. Salifoglou Athanasios
- 162. Santos Joana
- 163. Scedei Daniela
- 164. Semeniuc Cristina
Anamaria
- 165. Sestraș Adriana F.
- 166. Sestraș Radu
- 167. Simon Elemér Lajos
- 168. Sirbulescu Claudia
- 169. Socaci Sonia Ancuța
- 170. Socaciu Maria-Ioana
- 171. Spaller Giorgiana A.
- 172. Stanciu Ioana
- 173. Stoin Daniela

Ș

- 174. Ștef Ducu-Sandu
- 175. Ștef Lavinia

T

- 176. Tănase (Butnariu) Luiza
Andreea
- 177. Tanislav Anda Elena
- 178. Teodorescu Răzvan Ionuț
- 179. Țiuleanu Daniela
- 180. Tofană Maria
- 181. Toma Stefan -Lucian
- 182. Trașcă Teodor Ioan
- 183. Truță Alina Maria
- 184. Tsimpris Athanasios
- 185. Tsirca K.
- 186. Tudor Valerica
- 187. Turturică Mihaela

U

- 188. Ungur Rodica
- 189. Ursachi Claudiu-Ștefan

V

- 190. Vaz Velho Manuela
- 191. Velciov Ariana- Bianca
- 192. Vlaic Romina A. Marc
- 193. Vodnar Dan Cristian
- 194. Voilă Raul

Z

- 195. Zippenfening Simelda
Elena
- 196. Živkov-Baloš Milica M.