Erasmus+

HEALTHY DIET - BETWEEN TRADITION AND INNOVATION
International Summer School

Online meeting: 1 September 2025
On site activities: 4 - 12 September 2025

BOOK OF ABSTRACTS

UNIVERSITY OF LJUBLJANA | BF Biotechnical Faculty

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- Rui FM Silva, Faculty of Pharmacy, University of Lisbon, Portugal
- Petra Terpinc, Biotechnical Faculty, University of Ljubljana, Slovenia

Program

Monday, 1 September

Virtual conference – presentations of students and their Universities/Faculties https://bf-uni-lj-si.webex.com/bf-uni-lj-si/j.php?MTID=m8e6197b023d2b1a944628611935d60c3	
10:00 – 10:10	**Introduction**
10:10 – 10:20	University of Ljubljana, Slovenia
10:20 – 10:30	Universidade de Lisboa, Portugal
10:30 – 10:40	Instituto Politécnico de Beja, Portugal
10:40 – 10:50	Universidade do Porto, Portugal
10:50 – 11:00	University of Chlef, Algeria
11:00 – 11:10	University of Łódź, Poland
11:10 – 11:20	University St. Kliment Ohridski - Bitola, North Macedonia
11:20 – 11:30	University of Yamanashi, Japan
11:30 – 12:00	**Coffee break**
12:00 – 12:10	University of Almería, Spain
12:10 – 12:20	Transilvania University of Brasov, Romania
12:20 – 12:30	Ghent University, Belgium
12:30 – 12:40	Amity University Uttar Pradesh, India
12:40 – 12:50	Stellenbosch University, South Africa
12:50 – 13:00	**Final remarks**

Thursday, 4 September

9:00 – 10:00	**Registration** Welcome drink
10:00 – 10:15	**Opening ceremony**
10:15 – 12:00	**Students' networking**

Friday, 5 September

Chairperson: Lea Pogačnik da Silva	
9:00 – 9:30	**Sprouted Buckwheat for Functional Bakery Products – Introduction to Experimental Work** *Tomaž Požrl, Petra Terpinc, Mateja Lušnic Polak, Mojca Kuhar, Mojca Korošec, Jasna Bertoncelj* University of Ljubljana, Biotechnical Faculty, Slovenia
9:30 – 11:30	**Introduction to Slovene Language** *Tanja Jerman* University of Ljubljana, Faculty of Arts, Centre for Slovene as a Second and Foreign language, Slovenia
11:45 – 13:00	Experimental work (Sprouting group)

Monday, 8 September

Chairperson: Maria João Barata de Carvalho	
9:00 – 9:30	**Diet and Human Evolution** *Patrizia Restani* University of Milan, Department of Pharmacological and Biomolecular Sciences, Italy
9:30 – 10:00	**Antioxidants - Challenges for Food Science and Health** *Mihaela Badea* Transilvania University of Brasov, Faculty of Medicine, Romania
10:00 – 10:30	**Polyphenols and *in vitro* Methods to Measure Potential Health Benefits** *Chiara di Lorenzo* University of Milan, Department of Pharmacological and Biomolecular Sciences, Italy
10:30 – 11:00	**Mycotoxins and Health: Health Risks and Strategies for Detection** *Jean-Louis Marty* University of Perpignan Via Domitia, France
11:00 – 12:00	**Coffee break/International village**
Chairperson: Patrizia Restani	
12:00 – 12:30	**A Sustainable Approach to Food Production** *Agata Biadała* Poznan University of Life Sciences, Poland
12:30 – 13:00	**What does the HACCP Mean?** *Renata Cegielska-Radziejewska* Poznan University of Life Sciences, Poland
13:00 – 13:30	**Gluten-free Food, Alternative Raw Materials, Production Methods** *Małgorzata Gumienna* Poznan University of Life Sciences, Poland
13:30 – 14:00	**Current Trends in the Vinification Process and Quality Enhancement of Grape Wines** *Małgorzata Lasik-Kurdyś* Poznan University of Life Sciences, Poland
14:00 – 16:00	Experimental work (Sprouting group)

Tuesday, 9 September

Chairperson: Jean-Louis Marty	
9:00 – 9:45	**Buckwheat - a Low Input Plant with Excellent Nutritional Value** *Ivan Kreft* Biotechnical Faculty, University of Ljubljana, and Nutrition Institute, Ljubljana, Slovenia
9:45 – 10:15	**Buckwheat is a Phytochemically Diverse Plant** *Samo Kreft* Sodobna fitoterapija - farmacevtsko raziskovanje, razvoj in svetovanje, Samo Kreft s.p.; Jazon d.o.o, Slovenia
10:15 – 10:45	**Buckwheat Plants and the Environment** *Mateja Germ* University of Ljubljana, Biotechnical Faculty, Slovenia
10:45 – 11:15	**Biochemical Characterisation of Buckwheat Grain Tissues** *Paula Pongrac* University of Ljubljana, Biotechnical Faculty, Slovenia
11:15 – 12:00	**Coffee break/tasting buckwheat tea**

Tuesday, 9 September

Chairperson: Dijana Blazhekovikj-Dimovska	
12:00 – 12:30	**Buckwheat from Culinary Tradition to Modern Trends in Gastronomy** *Blanka Vombergar* IC Piramida Maribor, Slovenia
12:30 – 13:00	**Buckwheat Noodles, After All: from a Traditional Staple to a Modern Dietary Choice in Japan** *Nagisa Moritoki Škof* University of Ljubljana, Faculty of Arts, Slovenia
13:00 – 13:30	**Dietary Habits that Promote Health Through the Use of Food Factors with Health Benefits** *Shiori Ishiyama* University of Yamanashi, Faculty of Life and Environmental Sciences, Japan
13:30 – 14:00	**Functional Food Trends and Innovation** *Debora van der Merwe* Stellenbosch University, South Africa
17:00 – 18:30	Visit of Botanical Garden

Wednesday, 10 September

9:00 – 13:00	Experimental work (Baking group)
10:30 – 13:00	Experimental work (Sensory group)
12:00 – 13:00	Experimental work (Sprouting group)
13:00 – 14:00	**Lunch break**
14:00 – 15:00	Experimental work (Sprouting group, Baking group, Sensory group)
15:00 – 17:00	Experimental work (Sensory group)

Thursday, 11 September

9:00 – 18:00	Fieldtrip to "Mahnič" farm, Visit of Koper city

Friday, 12 September

Chairperson: Rui FM Silva	
9:00 – 9:30	**Antimicrobial Activity of Medicinal Plants and their Potential Application in Aquaculture** *Dijana Blazhekovikj-Dimovska* University "St. Kliment Ohridski" - Bitola, R. N. Macedonia
9:30 – 10:00	**Black Seed and its Cold-pressed Oil – Health Benefits and Electrochemical Analysis** *Kamila Koszelska* University of Łódź, Faculty of Chemistry, Poland
10:00 – 10:30	**Principles of Good Practice in Sensory Analysis** *Jeannine Marais* Stellenbosch University, South Africa
10:30 – 11:00	**Sensory Analysis in Traditional Food** *Maria João Barata de Carvalho* Polytechnic Institute of Beja, School of Agriculture, Portugal
11:00 – 11:30	**Coffee break**

Friday, 12 September

Chairperson: Mihaela Badea	
11:30 – 12:00	**Should I be Stressed?** *Laura Gaman* Carol Davila University of Medicine and Pharmacy, Bucharest, Romania
12:00 – 12:30	**Are Natural Food Polyphenols Good for the Brain?** *Rui FM Silva* University of Lisbon, Faculty of Pharmacy, Portugal
12:30 – 13:30	**Group presentations** (Sprouting group, Baking group, Sensory group)
13:30 – 14:00	**Closing ceremony**

Sprouted Buckwheat for Functional Bakery Products Introduction to Experimental Work

Tomaž Požrl, Petra Terpinc, Mateja Lušnic Polak, Mojca Kuhar, Mojca Korošec, Jasna Bertoncelj
Biotechnical Faculty, Department of Food Science and Technology, University of Ljubljana, Slovenia

Abstract
Buckwheat is a traditional Slovenian crop that belongs to the pseudo-cereals and is characterised by high-quality protein with polyunsaturated essential fatty acids, minerals, vitamins, fibre and resistant starch. Germination is a natural process that significantly influences the chemical composition and nutritional value of buckwheat. The participants' tasks will include the preparation of the germinated seeds that will be used as food additive. Muffins are small baked goods that are popular for their quick and easy preparation, delicate texture and intense taste. To develop healthy muffins, germinated buckwheat seed will be incorporated into the recipe. Muffins with non-sprouted seeds, muffins with non-pasteurised germinated seeds and muffins with pasteurised germinated seeds will be produced alongside the control group (no buckwheat added). We assume that the addition of buckwheat seeds will strongly influence the nutritional value and sensory properties of the end product. The nutritional value will be determined and compared by analysing the antioxidant content. The sensory quality and acceptability of the muffins will be tested by means of sensory analysis in which all participating students will serve as a consumer panel. For this purpose, we will use the qualitative descriptive method and the 9-point hedonic scale to compare the sensory profiles and acceptability of the prepared muffins from the consumers' point of view.

Keywords: buckwheat, germination, antioxidants, functional muffins, sensory quality

Biographies


Mojca Korošec, associate professor of nutrition at the Biotechnical Faculty of the University of Ljubljana, received her PhD in 2012. Her research area is food composition, sensory properties and perception. She has supervised one PhD student and more than 50 graduate students and published more than 40 research papers. She has presented over 120 papers at international and national scientific meetings. She is chair of the National hub for food sensory research, and a member of the Sensory analysis Working group of the International Honey Commission.

Jasna Bertoncelj is an associate professor at the Department of Food Science and Technology, Biotechnical Faculty, University of Ljubljana. She teaches and researches in the area of food quality assessment (macro and micronutrients; food analytical methods; food legislation), bee products characterization, sensory analysis (sensory methods; trained panels and consumers; food acceptability), and nutrition (healthy and balanced diets for various population groups; nutrition policy). She has supervised more than 50 students and published more than 30 scientific papers. She is a member of the national and international panels for sensory assessment of honey.

Mateja Lušnic Polak is an assistant professor at Biotechnical faculty, Department of Food Science and Nutrition. She graduated in 2008 and defended her PhD in 2014. She is a researcher in a research programme Integrated Food and Nutrition and author or co-author of 28 original scientific papers. In recent years, she has participated in several European projects. She has a partial teaching load as assistant in BSc and MSc programmes and supervised or co-supervised more than 20 graduate students. She is also a member of the sensory panel in the field of meat and meat products.

Petra Terpinc is an assistant professor at Biotechnical faculty, Department of Food Science and Nutrition. She graduated in 2006 and defended her PhD in 2012. She teaches in the area of field crops, with emphasis on oil, bakery and brewing. She is a member of the national beer sensory panel. She has mentored more than 20 graduate students and 1 Ph.D student. She has published 21 original scientific papers and 4 reviews in international journals, mainly in the field of polyphenols, antioxidants and functional cereal products.

Assoc. prof. dr. Tomaž Požrl works at the Biotechnical Faculty, Department of Food Science in Ljubljana since 1998. In the Chair of Plant Food Technologies and Enology he is a teacher and researcher in area of crop processing and food packaging. Recently, his research topics have focussed on the germination processes of alternative cereal raw materials (buckwheat, spelt, oats) and their use for the production of new functional products with high nutritional value and improved sensory properties, suitable for a wide range of consumers. He is chairman or member of various evaluation committees for the assessment of food quality.

Introduction to Slovene Language

Tanja Jerman
Centre for Slovene as a Second and Foreign Language at the Faculty of Arts of the University of Ljubljana, Slovenia

Abstract

A survival course of Slovene. In a fun and exciting way, you will learn basic information about Slovene language, how to pronounce Slovene words and how to say some common and useful expressions which will make your stay in Slovenia more pleasant. All you need is a pen, curiosity, and lots of good humour. No knowledge of Slovene is required.

Keywords: survival Slovene

*Biography

Tanja Jerman is employed as the head teacher of Slovene as a second and foreign language at the Centre for Slovene as a Second and Foreign Language at the Faculty of Arts of the University of Ljubljana. She teaches adult foreigners at all levels and is a co-author of textbooks, didactic and online materials for Slovene as a second and foreign language. She trains teachers and participates in national and international projects. She is also a rater for exams testing knowledge of Slovene as a second and foreign language.

Diet and Human Evolution

Patrizia Restani*, Corinne Bani, Francesca Mercogliano, Chiara Di Lorenzo
Department of Pharmacological and Biomolecular Sciences, Università degli Studi di Milano, Italy

Abstract
Diet has played a decisive role in promoting the evolution of human beings; however, it remains an open question to define the type of diet that has most influenced this phenomenon.

The differentiation of man from other animal species has been promoted by many factors; among these, the variation of diet over time and in the various geographical areas, inhabited in ancient times, has critically affected the development of the nervous system.

This presentation aims to: (1) outline the relationship between diet and human evolution; (2) evaluate how a variation in the consumption and type of food may have contributed to the enhancement of cognitive and adaptive capacities.

The most widespread diet among ancient populations that showed the highest levels of civilization (i.e. well-organized societies, which used advanced technical tools and promoted art and science) was very close to what is now called the Mediterranean diet (little meat and little fish; abundant cereals, legumes, fruit, vegetables and wine), which together with other factors may have modulated the cognitive evolution of man.

Among the active molecules present in a diet rich in vegetables, polyphenols deserve special attention, since their health-promoting activity has been re-evaluated and demonstrated in recent decades.

Keywords: brain, Mediterranean diet, polyphenols, antioxidants

*Biography

Prof. Patrizia Restani has a degree in Pharmaceutical Chemistry and Technology and a PhD in Toxicology. Currently retired, she was Full Professor of Food Chemistry at the University of Milan. As a contract professor she continues to teach Dietetic Products for the Faculty of Pharmacy of the same University.

Prof. Restani has been responsible for numerous national and international research programs in the field of Food Safety, Development of Dietetic Products (in particular in the field of allergies and celiac disease) and Safety of Food Supplements.

She carries out activities in commissions of the Ministry of Health, the World Organization of Vine and Wine (OIV) and collaborates as a CTU (Technical Consultant of the Office) with several Italian Courts. Prof. Patrizia Restani is the author or co-author of over 360 publications in national and international journals and books.

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Antioxidants - Challenges for Food Science and Health

Mihaela Badea
Transilvania University of Brasov, Romania

Abstract

Antioxidants - found abundantly in fruits, vegetables, cereals, mushrooms, beverages, flowers, spices, traditional medicinal herbs, and dietary supplements—play crucial roles in promoting health and preserving food quality.

Natural antioxidants present in plant sources primarily include polyphenols, carotenoids, and vitamins. Their health benefits depend on factors such as the chemical structure and concentration of the bioactive compounds, their ability to reach specific organs, the redox balance within tissues, and the antioxidant's capacity to perform its intended biological function.

Numerous studies have investigated the disease-preventive potential of antioxidants, often using them as nutritional supplements. Research conducted in cell cultures, animal models, and some human trials has linked various antioxidants to protective effects against diseases associated with reactive oxygen species (ROS), such as cancer, cardiovascular and neurodegenerative disorders, and aging. However, some studies also report that high doses of antioxidants may exert toxic or pro-oxidant effects, highlighting limitations in accurately predicting health outcomes.

Keywords: nutritional supplements, reactive oxygen species, diseases, natural antioxidants

*Biography

Mihaela Badea

• Professor of Biochemistry, Laboratory techniques, Organic chemistry, Analytical chemistry, Methodology of scientific research at Faculty of Medicine, Transilvania University of Brasov, Romania
• Habilitation in Medicine (2017) - University of Medicine and Pharmacy Carol Davila from Bucharest; • PhD in Chemistry (2005) - Babes-Bolyai University of Cluj-Napoca; • PhD in Medicine (2021) – Transilvania University of Brasov; • Member of the Academic Nutritional Science PhD's staff of the University of Milan (Italy) (since 2019).
• Research results applied in life sciences – environmental monitoring, food control and medicine – author of more than 60 papers in ISI WOS journals, coauthor for one patent. She acted as editor and contributor in books in the field of life sciences (medicine, environment, nutrition) with the international scientific teams
• She successfully coordinated conferences - New Trends on Sensing-Monitoring-Telediagnosis for Life Sciences- NT SMT-LS -2014-2024, Healthy Nutrition and Public Health - IC-HNPH 2011, was chairing the organisation of International Summer Schools -Food Safety and Healthy Living -FSHL 2018-2024; Telemonitoring and Telediagnostic for Life Sciences – TTLS 2013; Bioanalytical Methods for Life Sciences -BMLS 2011

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Polyphenols and *in vitro* Methods to Measure Potential Health Benefits

Chiara Di Lorenzo*, Carola Pozzoli, Corinne Bani, Francesca Mercogliano, Patrizia Restani
Dept. Pharmacological and Biomolecular Sciences "Rodolfo Paoletti", Università degli Studi di Milano, Milan, Italy

Abstract
Polyphenols are plant-derived compounds widely studied for their potential health benefits. They are classified into flavonoids (e.g., flavonols, anthocyanins) and non-flavonoids (e.g., phenolic acids, stilbenes, tannins) based on their chemical structure. In recent years, increasing attention has been given to polyphenols from various food sources, including agri-food by-products, due to their antioxidant and anti-inflammatory properties. These biological effects are particularly relevant in the context of chronic diseases such as type 2 diabetes, cardiovascular disease, and inflammatory bowel conditions, where oxidative stress and inflammation play a key role. To investigate these properties, several *in vitro* methods are commonly used. Antioxidant activity can be assessed using spectrophotometric methods such as DPPH radical scavenging capacity test, Folin–Ciocalteu and FRAP assays. Anti-inflammatory potential can be explored using *in vitro* models of gastric inflammation, while enzyme inhibition assays—such as those targeting dipeptidyl peptidase IV (DPP-IV)— are useful in evaluating the role of polyphenols in glucose metabolism and diabetes management. This study aims to provide a practical overview of some techniques used to study polyphenol bioactivity. These methods are essential for understanding their role in human health and for selecting promising compounds to be used in the formulation of functional foods or dietary supplements.

Keywords: nutraceuticals, *in vitro* assays, oxidative stress, gastric inflammation

*Biography
Chiara Di Lorenzo

- Associate Professor in Food Chemistry and Toxicology
  Dept. of Pharmacological and Biomolecular Sciences
  University of Milan (from 2020)
- Researcher in Food Chemistry and Toxicology
  University of Milan (2017-2020)
- Post-doc in Food Chemistry and Toxicology
  University of Milan (2013-2017)
- PhD in Pharmacology, University of Milan (2013)
- Specialization in Hospital Pharmacy, University of Milan (2008)
- Graduation in Pharmacy, University of Milan (2004)

The main area of research includes quality control of plant food supplements and characterization of botanical ingredients. The main analytical techniques used are chromatography (HPLC, TLC, HPTLC, GC); electrophoresis applied to food analysis and dietetic products; immunoenzymatic techniques (immunoblotting and ELISA) for the detection of food allergens in complex food matrices.

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Mycotoxins and Health: Health Risk and Strategies for Detection

Jean Louis Marty
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Abstract

Mycotoxins are toxins produced by certain molds. They are natural contaminants of many plant-based foods intended for human consumption. They are also present in foods intended for animal consumption and can be found in milk, eggs, meat or offal, if the animals have been exposed to contaminated food.

The toxic effects are varied. Some have hepatotoxic (aflatoxins), estrogenic (zearalenone), neurotoxic (patulin) and nephrotoxic (ocharatoxin) properties. Some are recognized as carcinogenic.

The European Commission has set maximum levels for the mycotoxins to protect human and animal health.

The current tendency has driven the development of biosensors or bioassays as new analytical tools able to provide fast, reliable, and sensitive measurements with low cost; Biosensors are defined as analytical devices incorporating a biological material, or bio mimic, intimately associated with or integrated within a physicochemical transducer or transducing microsystem. The main advantages of biosensors are short times of analysis, low cost of assays, portable equipment, real-time measurements, and suitability as remote devices. These new technologies have been applied in quantitative analysis of various target analytes.

Recently, a new class of namely aptamers have been emerged as promising alternative to replace the antibody in the design of biosensors. An aptamer is a sequence of single or double stranded DNA or RNA, selected from a random library according to its ability to bind a target molecule.

The presentation mainly focuses on the methods development in the sense that how mycotoxins can be detected through apta-sensors and apta-assays.

Keywords: Mycotoxins, health, biosensor

*Biography

Jean Louis MARTY is Honorary Professor at the Universite de Perpignan Via Domitia and biotechonology consulting. His background is in the field of biotechnology. He has extensive experience in the domain of optical and electrochemical biosensors and bio receptors immobilization techniques. His specialization also includes but not limited to implementation of biosensors for the detection of pesticides, marine toxins, mycotoxines, drugs.... He is the founder of three companies in the field of biotechnology and biosensor. He was awarded with number of national and international projects in the field of biosensors mainly funded by European Agency projects. He has supervised 30 PhD with 25 foreign students from 11 nationalities.
He is author of more 300 publications and 50 chapters of books.

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A Sustainable Approach to Food Production

Agata Biadała*, Renata Cegielska – Radziejewska, Małgorzata Lasik – Kurdyś, Małgorzata Gumienna
Poznań University of Life Sciences, Faculty of Food Science and Nutrition, Poznań, Poland

Abstract
A sustainable approach to food production focuses on meeting current food needs without compromising the ability of future generations to meet theirs. It seeks to balance environmental health, economic profitability, and social equity. Key strategies include: regenerative agriculture, agroecology, water efficiency, integrated pest management, reduced food waste, local and seasonal consumption, sustainable livestock practices, technology and innovation.
The direction of agricultural development and its transformation is to ensure food security and sustainable development of agriculture around the world, including poor countries. The intensification of production in the agricultural sector is often associated with the use of unsustainable agricultural practices, which in turn leads, among others, to the degradation of forest areas, increased greenhouse gas emissions, reduction of biodiversity or degradation of soil and water resources. Implementation of the assumptions for sustainable food production and processing requires multi-directional activities, in which biological systems and achievements of biotechnology have a significant share. Biotechnological innovations offer solutions to various civilisation challenges faced by today's world, including broadly understood sustainable agriculture, from improving crops through reducing waste from the agri-food industry to improving food. Biotechnological solutions can contribute to sustainable development by helping to end hunger and achieve food security.

Keywords: Sustainability, food, challenges, agriculture

*Biography


Research interests include the assessment of the quality and safety of food and the implementation of new technological solutions supporting the shape of the quality of food products, also in terms of the natural increase in the content of ingredients with functional properties. Professional experience includes scientific work at the Poznań University of Life Sciences, as well as work of several years at a large international concern, in the quality department. Other interests and competences include implementation and maintenance of integrated quality management systems, as well as improving the methods of estimating and limiting risk in the entire food chain.

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What does the HACCP Mean?

Renata Cegielska-Radziejewska*, Agata Biadała, Małgorzata Lasik - Kurdyś, Małgorzata Gumienna
Faculty of Food and Nutrition Sciences, Poznan University of Life Sciences, Poland

Abstract
Health safety is an essential property of food, for which the producer is held responsible. The HACCP is a system which identifies, evaluates and controls hazards which are significant to food safety. Hazard Analysis and Critical Control Point that is HACCP.

The HACCP system, which is science based identifies specific hazards and measures for their control to ensure the safety of food. HACCP should be applied throughout the food chain from primary production to final consumption and its implementation should be based on evidence of human health risks. HACCP is considered an efficient system. Its universal nature is evidenced by the fact that experts developing the ISO standard, BRC and IFS standards for associations of food wholesale and retail companies have incorporated the system's requirements into their requirements.

Important sources of food hazards are primary raw material, food additives, packaging materials, people, animals and production environment. All food processing operations should be carried out in a way in which the risk of contamination is avoided. Communication along the food chain is essential to ensure that all food safety hazards are identified and controlled at each step within the food chain.

Keywords: food safety, food hazards, CCP, risk evaluation

*Biography
RESEARCH AREAS:

Systemic assurance of safety and quality in food production (GMP/GHP, HACCP, ISO 9001, ISO 22000; BRC, IFS standards). Implementation, improvement and verification of food safety and quality management systems. Monitoring the state of hygiene in the course of production processes. Use of microbiological methods in assessing food safety in the food chain. Analysis of the antimicrobial activity of monomer and modified lysozyme from egg white and the possibility of their use in food fixation. Determination of antimicrobial activity of natural compounds of a fixative nature (plant extracts). The use of modified atmosphere to extend the shelf life of food. Occurrence of bacteria, microscopic fungi and mycotoxins in eggs and egg products.

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Gluten-free Food, Alternative Raw Materials, Production Methods

Małgorzata Gumienna*, Małgorzata Lasik-Kurdyś, Agata Biadała, Renata Cegielska-Radziejewska
Poznan University of Life Sciences, Faculty of Food Science and Nutrition, Poznan, Poland

Abstract
Gluten-free food is a product whose gluten content does not exceed 20 ppm, following EU standards. It includes naturally gluten-free products and specially processed ones. Nutritional values are important in the diet of people with gluten intolerance, which is why products, including fermented ones, obtained from cereals such as buckwheat, amaranth, or quinoa, are gaining importance.

Beer is not a necessary product in the everyday diet for the normal function of the body, but it may give variety to the diet. Beer is one of the most popular beverages in the world, traditionally brewed from water, malt, hops, and yeast. Recently, despite a slight decline in beer consumption, interest in non-alcoholic and gluten-free beers is on the rise.

Gluten-free beers are aimed at people with celiac disease, wheat allergy, or non-celiac gluten sensitivity. Celiac disease is a chronic autoimmune disease caused by gluten, leading to intestinal damage. Gluten hypersensitivity causes both intestinal and systemic symptoms, but has no autoimmune basis. European demand for gluten-free beer is estimated at 5.5 million hectoliters per year. Production is based on naturally gluten-free cereals (buckwheat, sorghum, millet, quinoa) or traditional (barley, wheat), from which gluten is removed enzymatically (e.g., proline endoprotease) or by hydrodynamic cavitation.

Alternative raw materials (e.g. oats, amaranth, buckwheat, and quinoa) have not only technological properties, but also high nutritional value - they contain fiber, antioxidants, vitamins, and minerals.

Keywords: Celiac disease, Gluten-free beers, Wheat allergy, Pseudocereals,

*Biography


Professor Małgorzata Gumienna, PhD, DSc in her scientific activity deals with the biosynthesis of secondary metabolites, surfactants using, among others, waste products of the food industry with the participation of various microorganisms, as well as research on biologically active compounds contained in plant raw materials and their use in increasing the nutritional value of products, taking into account the interaction of intestinal microflora in a model of the gastrointestinal tract *in vitro*, and in particular their effect on the process of inhibition of enzymes of bacterial origin. In addition, leads research on using unconventional raw materials for the production of alcoholic beverages and methods of their preparation for the fermentation process with the use of alternative microorganisms.

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Current Trends in the Vinification Process and Quality Enhancement of Grape Wines

Małgorzata Lasik-Kurdyś*, Małgorzata Gumienna, Agata Biadała, Renata Cegielska-Radziejewska
Poznan University of Life Sciences, Faculty of Food Science and Nutrition, 624 Poznan, Poland

Abstract

The vinification process has undergone significant advancements in recent years, driven by the need to enhance wine quality, improve efficiency, and address challenges such as global warming and sustainability.

One of this innovations is organic and biodynamic viticulture focuses on the use of local grape varieties, indigenous yeasts, and minimal additives to produce wines. Another significant movement within the winemaking industry is no- and low-alcohol wines (NoLo wines) trend, which is largely driven by changing consumer preferences towards healthier lifestyle. Innovative techniques are tested to maintain sensory qualities while reducing alcohol content, following the modern wine consumption trend.

Furthermore AI technologies, such as machine learning and predictive modeling, are being used to optimize grape cultivation, fermentation, and aging processes. These technologies predict optimal harvest time, monitor fermentation kinetic, and identify potential risks, ensuring that wines meet high-quality standards.

Another critical aspect of modern winemaking is the recovery and valorization of wine industry by products (grape pomace, grape stalks, and wine lees) with their novel applications in food industry, cosmetics, pharmaceutical, agricultural, livestock fields and in energy recovery systems.

This presentation indicate selected technological innovations in the vinification process and their impact on the quality enhancement of grape wine.

Keywords: innovative vinification, biodynamic wine, NoLo wines, by-products valorisation

*Biography

Małgorzata Lasik-Kurdyś PhD (Associate Professor)
Scientific interests are: technology of vinification, brewing and malting, valorization of by-products, up-cycling, processing of plant-based foods, especially biotechnological processing and bioactive food ingredients, food design, with strong regard to sustainable development goals.

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Buckwheat - a Low Input Plant with Excellent Nutritional Value

Ivan Kreft*
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Abstract

Common buckwheat (*Fagopyrum esculentum* Moench) and Tartary buckwheat (*F. tataricum* Gaertn.) originate in mountain areas of Himalaya. Common buckwheat is widely cultivated in central Asia, Korea, Japan, Tasmania and central and eastern Europe. Tartary buckwheat is mainly cultivated in China, Bhutan, northern India, Nepal, and central Europe (Slovenia, Italy, Bosnia and Herzegovina). Tartary buckwheat has high content of flavonoids, shows greater cold resistance than common buckwheat, and has traits for drought tolerance. Buckwheat can provide health benefits due to its contents of resistant starch, mineral elements, proteins, and in particular phenolic substances, which prevent the effects of several chronic human diseases, including cardiovascular diseases, hypertension, obesity, and gallstone formation. The contents of the flavonoids rutin and quercetin are very variable among Tartary buckwheat samples from different origins and parts of the plants. Quercetin is formed after the degradation of rutin by the Tartary buckwheat enzyme rutinosidase, which mainly occurs after grain milling during mixing of the flour with water. High temperature treatments of wet Tartary buckwheat material prevent the conversion of rutin to quercetin.

Key words: common buckwheat, Tartary buckwheat, flavonoids, rutin, nutrition

*Biography

Ivan Kreft graduated at Ljubljana University in Biology and Agronomy, at the University of Lund, Sweden - M.Sc. (Genetics), in Ljubljana Ph. D., and at Slovak Agricultural University in Nitra received his Dr. h.c. From 1983 teaching genetics, and evaluation of plant products, for the students of agronomy, biology, biotechnology, food science and nutritional studies. In 1992-1993 visiting professor at Kyoto University, Japan, in 2001 visiting professor at Shanxi University, Taiyuan, China, in 2010 visiting professor at Kobe Gakuin University, Japan. From 2016 employed at the Nutrition Institute, Ljubljana, Slovenia. He performed many scientific excursions and field experiments in Europe, China, Korea, Japan, Bhutan, Philippines, and Australia (Tasmania).

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Buckwheat is a Phytochemically Diverse Plant

Samo Kreft
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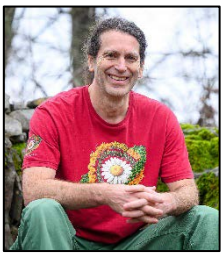
Common buckwheat (*Fagopyrum esculentum*) and tartary buckwheat (*F. tataricum*) are examples of plants with high phytochemical diversity, offering valuable compounds in both their seeds and green parts. Their seeds contain high levels of flavonoids, especially rutin—a compound with antioxidant, anti-inflammatory, and capillary-strengthening properties. Rutin makes buckwheat one of the best dietary sources of this important flavonoid.

In addition to the seeds, the aerial parts (herba) of the buckwheat plant also contain significant amounts of polyphenols and other secondary metabolites. However, they also contain a group of compounds known as fagopyrins—phototoxic naphthodianthrone derivatives similar in structure to hypericin from St. John's Wort. These substances can cause photosensitivity reactions in animals and humans when consumed in large quantities, particularly when the skin is exposed to sunlight. Hypericin is poorly soluble in water, therefore the tea made from buckwheat herb can be used safely.

In our research, we studied the differences in metabolite content across various parts of the plant, different buckwheat species, developmental stages of sprouts, and the effects of UV radiation. Understanding the chemical makeup of buckwheat is crucial for its safe and effective use, whether in food, herbal teas, or other applications.

Keywords: Rutin, Fagopyrins, Photosensitivity, Polyphenols

*Biography



Samo Kreft (born in 1972, Slovenia) is a pharmacognosist and natural product chemist with research experience in the field of medicinal plants. He served as a professor at the Faculty of Pharmacy, University of Ljubljana, where he studied phytochemical composition of buckwheat (*Fagopyrum esculentum*), purple coneflower (*Echinacea purpurea*), St. John's wort (*Hypericum perforatum*), silver fir (*Abies alba*), hemp (*Cannabis sativa*), willowherbs (*Epilobium spp*.). His scientific work focuses on secondary metabolites such as flavonoids, lignans and other polyphenols, alkaloids (particularly toxic pyrrolizidine alkaloids), and canabinoids, with a special emphasis on their pharmacological activity and toxicological profiles. Professor Kreft has published over 100 peer-reviewed articles. As an expert member of the European Medicines Agency (EMA), he has participated in the work of the Committee on Herbal Medicinal Products (HMPC), helping shape the regulatory framework for the safe use of traditional herbal remedies. In addition to his academic contributions, he is also active in public education, developing professional courses for herbalists and healthcare professionals, and continues to work as an independent scientific consultant, supporting innovation and evidence-based practices in phytotherapy

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Buckwheat Plants and the Environment

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Abstract
Common buckwheat and Tartary buckwheat belong to Polygonaceae family. They are pseudocereals and grow all over the world. Both species contain high concentrations of flavonoids, so they are potential sources of smart food. Tartary buckwheat and common buckwheat are cultivated in mountain regions of China, Korea, the northern parts of India, Bhutan, and Nepal. Plants growing in high elevations are subjected to intense UV radiation, which might damage vulnerable sites in the plants. Plants protect themselves against radiation by producing UV-absorbing compounds. Drought will probably become more severe in the future due to climate change. UV radiation and drought are environmental parameters that pose stress to plants. These effects can be synergistic or antagonistic. Selenium and silicon protect plants that are subjected to UV radiation or drought. Selenium acts as an antioxidant. Silicon is an abundant element in Earth's crust. Selenium and silicon are not essential elements for vascular plants (except horsetail); however, they may positively affect plants. Selenium and silicon can be added to the growth media to improve crop yield and quality, enhance abiotic and biotic stress resistance, and improve plant growth.

Key words: common buckwheat, Tartary buckwheat, elements, UV radiations, drought

*Biography

M. Germ studies growth, physiological and biochemical parameters, concentration of minerals and metabolites of crops, response of crops to different kind of stress, including UV radiation, draught and their combinations, the effect of mineral elements often in deficit in human nutrition (I, Se and Zn) on growth and quality of crops, optimisation of barley for sustainable use and high quality functional foods, effect of I, Se and Si on growth and quality of crops. M. Germ is national expert for aquatic plants for the implementation of Water Framework Directive (Directive 2000/60/EU. She is co-author of products developed and marketed in Slovenia, Croatia, Sweden and Korea

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Biochemical Characterisation of Buckwheat Grain Tissues

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Abstract
Plant organs comprise different tissues, each with a specific biochemical composition tailored to perform its physiological role. Their biochemical characterisation is challenging because no single analytical technique to capture their multi-faceted makeup exists. In addition, sample handling and preparation can disintegrate tissues, making subsequent analyses inaccurate. Therefore, correlative imaging workflows are being developed to visualize and relate biochemical composition to anatomical, physiological, and genetic traits of tissues. Ideally, it couples different imaging techniques on different spatial scales on a single sample prepared in a non-destructive manner.

Four distinct Tartary buckwheat (*Fagopyrum tataricum*) grain tissues, namely endosperm, cotyledons, embryo and pericarp were characterized using six sequential imaging techniques: bright-field and autofluorescence microscopy (morphology and fluorophore presence), fluorescence micro-spectroscopy (fluorophore composition), MeV-secondary ion mass spectrometry (molecular composition at 5 µm scale), micro-particle induced X-ray emission (element composition at micrometre scale, sensitivity 1-10 ppm), scanning electron microscopy coupled with energy dispersive X-ray spectroscopy (morphology and element composition at <1 µm scale, sensitivity ~ 1% dry weight) and laser-ablation-inductively-coupled-plasma-mass spectrometry (element composition ~ 20 µm scale, sensitivity <1 ppm).

Characterisation of Tartary buckwheat grain tissues using stepwise addition of the desired information across several classes of biomolecules and several spatial scales will be presented.

Keywords: correlative imaging, *Fagopyrum tataricum*, elemental composition, secondary metabolites

*Biography
As a researcher at the Jožef Stefan Institute, Slovenia and at the Biotechnical Faculty, University of Ljubljana, Slovenia, I am involved in research on the localisation of elements and their ligand environment in plant tissues, focusing on elements lacking in diets and those potentially toxic.

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Buckwheat from Culinary Tradition to Modern Trends in Gastronomy

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Abstract

Buckwheat has been used in Slovenian cuisine for several centuries. We have many products and dishes made from buckwheat that were traditionally prepared in the past, as well as some typical regional specialties in different Slovenian regions, such as buckwheat bread, buckwheat *pogača*, buckwheat *žganci*, buckwheat *zlevanka*, buckwheat black sausage, etc. The preparation and consumption of buckwheat products in Slovenia is nowadays not as common as we would like. It mainly means additional offerings on menus. Unfortunately, dishes and products made from Tartary buckwheat are still very rare on the Slovenian market. Modern trends bring an increasing offer of innovative dishes and products made from common and Tartary buckwheat. Consumers are increasingly interested in health-friendly foods, which are by a good nutritional composition of buckwheat and the local production environment often mean a lot. Demand is also increasing due to special nutritional requirements and improved eating habits of people. Fashionable food trends are also becoming important. At EC Piramida Maribor, we are developing the possibilities of using common and Tartary buckwheat in modern gastronomy. We have developed more than 100 different products and dishes from common and Tartary buckwheat. We are also studying technologies for making different types of buckwheat dough and possibilities of use in gastronomy. Buckwheat is also becoming important in the offer of gluten-free products and for gluten-free dishes in the culinary arts.

Key words: common buckwheat, Tartary buckwheat, bakery, confectionary products, buckwheat dishes

*Biography

Blanka Vombergar, graduated at the Biotechnical Faculty, University of Ljubljana. She completed a one-year specialization in food microbiology at the Faculty of Technology in Novi Sad, Serbia. Received Ph.D. in post-graduation studies in biotechnical and biotechnological sciences, at the University of Ljubljana. Assistant Professor for Food Safety at the Faculty of Education, University of Maribor and Lecturer at the Education Centre Piramida Maribor, Higher Vocational College for Food and Nutrition. Researches in the field of flavonoids and tannins in buckwheat. Develops and evaluates baking and confectionary technologies for cereals and other crops. Member of editorial board of Fagopyrum journal and of professional magazines. The president of the Association of Food and Nutrition Professionals of the NE Slovenia, the President of the Slovenian Association for Buckwheat Promotion Fagopyrum, and the Head of the Healthy Nutrition Project at the Society for Cardiovascular Health for Maribor and region Podravje.

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Buckwheat Noodles, After All: from a Traditional Staple to a Modern Dietary Choice in Japan

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Abstract

Buckwheat, known as *soba* in Japanese, refers not only to the plant itself but also to the food products derived from it—most notably, noodles. This presentation traces the historical development of *soba*, examining how it evolved from a general food source into a staple noodle dish, ultimately becoming a key element of Japanese history.

Although buckwheat has been present in southern Japan for approximately 9,400 years, it was not until the 14th century that it began to be consumed in noodle form. The widespread popularity of *soba* noodles emerged in the 16th century, facilitated by the diffusion of milling technology such as the millstone across Japan.

This study also investigates the cultural contexts that shaped the development of *soba*, both within Japan and in relation to neighbouring Asian countries. Through the lens of this humble plant, the presentation explores broader themes of Japanese lifestyle, cultural identity, and historical interregional exchange.

Keywords: Buckwheat, Technological Diffusion, Transnational Exchange, Japan.

*Biography

Dr Nagisa Moritoki Škof is Assistant Professor of Japanese Studies at the Department of Asian Studies, Faculty of Arts, University of Ljubljana, Slovenia. Her research interests include Japanese linguistics, language teaching, corpus linguistics, la
nguage policy and special needs education. She is currently working on a curriculum for Japanese language teacher training for non-native speakers. She collaborates with researchers in Central Europe and Japan on various topics related to linguistics and language education and has lectured in Japan, Croatia, Poland, Turkey, etc. She is also an external researcher of the National Institute of Japanese Language and Linguistics (2017-2021, 2023-) and the University of Tsukuba, Chair of the Association of Teachers of Japanese in Europe (2020-2023), Chair of the Global Network for Japanese Language Education (2020-2023).

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Dietary Habits That Promote Health Through the Use of Food Factors with Health Benefits

Shiori Ishiyama*
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Abstract

Along with the increasing number of patients worldwide suffering from lifestyle-related diseases such as type 2 diabetes, fatty liver, and nephropathy, people have become increasingly concerned about healthy eating and dietary habits worldwide in recent years. At the same time, however, the prevalence of extreme diets is causing some people to suffer health problems, and there is a need for people to know information and make choices based on scientific evidence.

Food is not only a necessary act to sustain human life, but also a means to protect one's own health in today's society. Many food cultures remain in each region, which can either preserve or worsen health conditions. Food is also a kind of enjoyment of life, as people feel happiness through the sensations and tastes they experience and share with others when they consume food. So, what kind of dietary life can be enjoyed while protecting one's health?

In this seminar, we will discuss the dietary habits that protect our health with information based on the scientific evidence available at the present stage.

Keywords: dietary fiber, postprandial hyperglycemia, diabetes, barley

*Biography

Dr. Shiori Ishiyama is an Assistant Professor at the Faculty of Life and Environmental Sciences, University of Yamanashi, Japan. Her research focuses on elucidating the mechanisms by which complex environmental factors—such as the embryonic environment, fetal undernutrition, and high-fat diets after birth—contribute to the development of lifestyle-related diseases including type 2 diabetes. She also explores food factors with potential preventive or suppressive effects on these conditions, using both animal models and human data.

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Functional Food Trends and Innovation

J. Debora van der Merwe*
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Abstract

Functional foods are foods that offer health benefits beyond basic nutrition and are at the forefront of innovation in the global food system.

Consumers are increasingly demanding foods that support health outcomes such as metabolic health, cognitive performance and immune support. This demand is driven by consumer awareness of the potential role of nutrition in preventative health and an increased awareness and knowledge on diet-related non-communicable diseases.

Innovation in functional foods include novel bioactive compounds, improved delivery systems and the use of biotechnology. Other key innovations in this field that highlight recent trends and scientific advancements include mood and mental wellness support, gut microbiome modulation, food as medicine, plant-based functional ingredients, personalized nutrition and AI integration and performance and active lifestyle products.

This presentation invites participants to engage with trends and innovation related to functional foods and to reflect on how functional foods can contribute to health strategies. It also considers the ethical and regulatory challenges of translating scientific innovation into accessible dietary solutions.

Keywords: bioactives, prevention, health, nutrition

*Biography

Dr Debora van der Merwe [PhD Food Science | Diploma in Nutrition]
Debora lectures on New Product Development (NPD) and Functional Foods and does research at the Department of Food Science, Stellenbosch University. Her undergraduate studies were on functional foods, rooibos and honeybush teas - indigenous SA herbal teas. Her research focusses on several aspects of NPD with a strong emphasis on nutrition and she is also interested in working on innovation of the NPD Process.

With over a decade of hands-on experience in New Product Development (NPD), Food Legislation and Consultancy, she brings a rare blend of academic insight and real-world expertise.

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Antimicrobial Activity of Medicinal Plants and their Potential Application in Aquaculture

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Abstract
Numerous compounds derived from plant extracts demonstrate significant potential for the prevention and management of fish pathogens in aquaculture. Phytotherapy has seen a steady increase in the use of plant-derived compounds and the potential to find new essential oils, plant extracts, and bioactive compounds. However, more research is required to demonstrate the effectiveness of these plant-derived compounds and their antimicrobial activities for controlling fish pathogens. The objective of this research was to explore if the essential oil from the plant *Thymus tosevii* Vel. subsp. *tosevii* var. *degenii* (Lamiaceae), a species endemic to Pelister, Baba Mountain (Bitola, Macedonia), exhibits specific antimicrobial properties against selected microorganisms. The essential oil was extracted from the aerial parts during the flowering phase through hydro-distillation, utilizing the Unger apparatus to derive the essential oil from this plant. The antibacterial properties of the oil were assessed using a disc diffusion method. The essential oil derived from the plant *Thymus tosevii* Vel. subsp. *tosevii* var. *degenii* (thyme) exhibited varying antimicrobial effects against the microorganisms assessed, which depended on both the concentration of the essential oil and the specific type of microorganism. Conversely, natural substances such as essential oils extracted from plants can improve food safety and quality by reducing microbial growth in food items, potentially extending shelf life and preventing spoilage in these products.
Keywords: plants, essential oils, antimicrobial activity, aquaculture

*Biography

Prof. Dr. Dijana Blazhekovikj - Dimovska is a full Professor at University "St. Kliment Ohridski", Faculty of Biotechnical Sciences, Bitola, R. N. Macedonia, as well as, Vice Dean for Science and International Cooperation. She graduated in 2004 at the Faculty of Biotechnical Sciences, University "St. Kliment Ohridski" - Bitola obtaining a professional title Engineer in processing of animal products. In 2009, she defended the master thesis at Faculty of Agricultural Sciences and Food, University "St. Cyril and Methodius" in Skopje, gaining an academic title of Master of Agricultural Sciences from the field of Food Technology/scientific field Microbiology. In 2013, she defended doctoral thesis under the title "Parasite fauna and mycoses in cyprinid fish in the fish breeding facilities in the Republic of Macedonia", thus gaining a scientific degree of Doctor of Biotechnical Sciences. Since 2007, gains a full-time employee status at the Faculty of Biotechnical Sciences - Bitola. She is involved in realization of the teaching of all three cycles of studies at this Faculty in the following subjects: Fish technology, Quality and safety of fish and fish products, Hygiene and safety in aquaculture, Fisheries, Aquaculture, Modern technologies in aquaculture and Technology and safety of fish and fish products. Her research expertise includes studies in fisheries, aquaculture, and fish quality and safety, resulting in numerous projects, scientific publications and conference presentations.

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Black Seed and its Cold-Pressed Oil – Health Benefits and Electrochemical Analysis

Kamila Koszelska*
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Abstract

Nigella sativa, commonly known as black seed, has gained increasing attention due to its wide range of pharmacological properties and traditional use in natural medicine. Its cold-pressed oil is rich in biologically active compounds and is known to support immune function and digestive health. Thymoquinone is considered the most valuable active compound in black seed oil, and its concentration significantly influences the oil's therapeutic potential and antioxidant activity.

This presentation explores the health-promoting effects of cold-pressed black seed oil. Moreover, original electrochemical studies aimed at determining the thymoquinone content in black seed oil samples will also be presented. The electrochemical approach offers a rapid, sensitive, and cost-effective method for the quantification of this key bioactive compound.

Keywords: thymoquinone, voltammetry, analytical chemistry, SWV

*Biography

My research focuses on the analysis of biologically active compounds—including pesticides, pharmaceuticals, and biomolecules—using electrochemical techniques, primarily cyclic voltammetry (CV) and square wave voltammetry (SWV). I am particularly interested in the development and fabrication of novel sensors tailored for voltammetric analysis.
In addition, my work involves investigating the mechanisms of electrode processes through advanced electrochemical methods. A significant part of my research is also dedicated to studying interactions between small molecules and DNA, with the aim of better understanding their binding mechanisms and potential biological activity.
Since November 2021, I have been employed as an Assistant Professor at the Faculty of Chemistry, Department of Inorganic and Analytical Chemistry, University of Lodz

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Principles of Good Practice in Sensory Analysis

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Abstract
As the global food industry evolves to meet consumer demands for healthier, sustainable, and culturally relevant products, the role of sensory science becomes increasingly critical. Sensory analysis provides essential insights into how people perceive food, bridging traditional preferences with innovative formulations. This presentation explores key principles and challenges in sensory science, with a focus on ensuring reliable and valid results. Topics include sound experimental design, the influence of product differences, and the complexities of working with human assessors.

Understanding and applying good sensory practices not only enhances the credibility of product evaluations but also supports informed decisions in developing appealing, nutritious foods. In an era where consumer expectations are shifting, maintaining scientific rigour in sensory assessments is vital to aligning innovation with authentic eating experiences.

Keywords: Acceptance testing; Descriptive sensory analysis; Experimental design; Sensory panellists

*Biography


Dr. Jeannine Marais is a Lecturer in the Department of Food Science at Stellenbosch University, South Africa. She specialises in Sensory Science, with a particular focus on the evaluation of agricultural food products such as meat. Her research centres on the measurement of human perceptions towards food, complemented by physicochemical measurements of product quality. Through interdisciplinary collaboration with academic and industry partners, her research supports the development of nutritious, palatable, high-quality foods aligned with consumer needs and preferences.

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Sensory Analysis in Traditional Food

Maria João Carvalho[*1,2,3], **Rita S. Inácio**[1, 2,4], **Teresa Santos**[1, 2], **Antónia Macedo**[1,2,5], **Manuela Costa**[1], **Miguel Floro**[1], **Célia Lampreia**[1], **Silvina Ferro Palma**[1,2]

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Abstract

The evaluation of stimuli to products perceived through the senses of sight, smell, touch, taste, and hearing has been used since antiquity, nevertheless today is a scientific procedure to measure, analyze, and interprete sensory features. Historically, it was considered a methodology that complements technological and microbiological safety when assessing the quality of food, and is one of the most important methodologies to certify final product acceptance and define traditional foods characteristics as part of a nation heritage. Traditional foods are often related to artisanal foods denoting specific location of production and a people know-how. This uniqueness often is referred to as “authenticity”, being often used for cultural goods.

Évora is a Protected Designation of Origin (PDO) cheese considered one of the most traditional Portuguese cheeses, due to its unique sensory profile and long-lasting cultural heritage. This artisanal cheese is manufactured in the Northeast Alentejo region from ovine raw milk and extracts of *Cynara cardunculus* L., with a ripening time of at least 30 days for a semi-hard texture and 90 days for a hard texture, a fat content from 45% to 60%, a spicy and sour taste, which contributes to the Portuguese ‘familiarity with this product attributes and its potential overall acceptability.

Keywords: Cheese, Taste, Aroma, Texture

*Biography

PhD Food Technology in Faculdad de Veterinaria- Universidad de Extremadura (UNEX), Cáceres. MSc in Food Technology/Quality in Faculdade de Ciência e Tecnologia, in Universidade Nova de Lisboa, Caparica. Agro-Industrial Engineering in Instituto Superior de Agronomia (ISA) in Lisbon University, Lisbon. Professor/Researcher in Agriculture School in Polytechnic University of Beja (IPBeja); Director of Agriculture School in Polytechnic University of Beja (since 14th February 2023). Sensory Laboratory Director (since 2012) with assays accredited by EN IEC/ISO 17 025:2017: Certified PDO Cheeses – SERPA, NISA, ÉVORA panel responsible; bread panel responsible; meat and seafood panels responsible; Certified PDO Cheeses – SERPA, NISA, ÉVORA panelist; Olive-oil panelist, bread and breadmaking products panelist; fruits, meat, fish and seafood panelist. Coordinator of a short-cycle degree in “Innovation and Food Technology” (Desp.102/PIPB/2015). Coordinator in International Mobility in Food Science and Technology Master. Member of IPBEJA Evaluation and Quality Council (CQA). Member of IPBeja Academic Coordination and Evaluation Council (CCAA). Coordinator of National and International PRR Projects: AgroDigiTech@Sul and GRACE, respectively.

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Should I be Stressed?

Laura Elena Gaman
Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

Abstract

There are many definitions of stress: a state of worry, a mental tension, or " a nonspecific response of the body to any demand", as described first time by Hans Selye.

There are many "stressors": different diseases, a "mileu interieur" of our body, social life, job, age and so on.

All these state of events could (or not) be explained by the "homeostasis of cortisol".

Finaly, we should be able to ask ourselves this: is at always undoubtedly wrong to be stressed or can something good come out of it?

*Biography

• Associate Professor, Department of Biochemistry, Faculty of Medicine, „Carol Davila" University of Medicine and Pharmacy

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Research Interests

Main research interest is the oxidative stress associated with different diseases:

mitochondrial disease in children, atherosclerosis and cardiovascular disease, neurological diseases like schizophrenia and Alzheimer's, diabetes, chronic renal disease.

Are Natural Food Polyphenols Good for the Brain?

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Abstract

Dementia affects over 55 million people globally, with around 10 million new cases diagnosed each year. It is the seventh leading cause of death and poses a growing economic and social burden, with global costs projected to rise from US$ 1.3 trillion in 2019 to over US$ 2.8 trillion by 2030.

Despite ongoing research, there is no cure for major forms of dementia, such as those caused by Alzheimer's and Parkinson's diseases. A key challenge is that neuronal degeneration begins well before symptoms appear, limiting the effectiveness of current treatments that primarily slow progression. This highlights the urgent need for preventive strategies. Dietary interventions, particularly those rich in polyphenols, are gaining attention as cost-effective neuroprotective measures. The Mediterranean diet, high in polyphenols, has shown promise in this regard. Our previous research demonstrated that epigallocatechin gallate (EGCG), a key green tea polyphenol, crosses the blood-brain barrier and protects neurons from oxidative stress. Moreover, EGCG and green tea extracts have been shown to disrupt amyloid-beta aggregation, a hallmark of Alzheimer's disease, without significant side effects.

Overall, polyphenol-rich diets offer a promising approach to delay or prevent neurodegenerative diseases, potentially reducing the global burden of dementia.

Keywords: Dementia, neuroprotection, oxidative stress, cell death

*Biography

Rui Silva is Professor of Histology & Embriology and of Neurobiology at Universidade de Lisboa, Faculdade de Farmácia, Portugal. He is an expert on cell biology, namely nerve cell cultures, cell signalling, cell death mechanisms and neurotoxicology. His main research interests are on the neurosciences area, in the topics of neurobiology, neurotoxicology, neurodevelopment and glial function associated to neurologic conditions and neurodegeneration. Neuroprotection mechanisms is the most relevant area of intervention, embracing the neuroprotective properties of food natural products and food-borne molecules, either introduced in the regular diet or as additives or medicines, by several cell and molecular mechanisms, beyond the traditional antioxidant properties described for food polyphenols. He has published more than 90 research articles, mentored over 30 post-graduate students, and given more than 150 communications in scientific meetings in several countries. He is an Editorial Board Member of scientific journal Antioxidants, guest editor of special issue Dietary Polyphenols and Neuroprotection (Antioxidants) and Associate Editor of Frontiers in Cellular Neuroscience - Non-Neuronal Cells.

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