



BOOK OF ABSTRACTS

International Summer School FOOD SAFETY AND HEALTHY LIVING FSHL – 2023

ON SITE and ONLINE

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**FOOD SAFETY AND HEALTHY LIVING
– FSHL 2023**

C1	Healthy living including food safety Laura GAMAN (1), Mihaela BADEA (2) (1) Faculty of Medicine, “Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania (2) Faculty of Medicine, Transilvania University of Brasov, Romania	10
C2	The laboratory – partner of the clinician in the diagnosis of gastrointestinal diseases Antoanela CURICI (1,2) (1) “Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania (2) Synevo Romania	14
C3	Nutritional assessment in advanced liver disease Sandica BUCURICA (1,2), Mariana JINGA (1,2), Florentina IONITA-RADU (1,2), Laura GAMAN (3), Mihaela PAVALEAN (1,2) (1) Department of Gastroenterology, “Carol Davila” University of Medicine and Pharmacy Bucharest, Bucharest, Romania (2) Department of Gastroenterology, “Carol Davila” University Central Emergency Military Hospital, Bucharest, Romania (3) Department of Biochemistry, “Carol Davila” University of Medicine and Pharmacy Bucharest, Bucharest, Romania	16
C4	Functional food components, dysbiosis in patients with inflammatory bowel disease and cancer Camelia RÂTEA Pronutrition Prevention Center, Targu Mures, Romania	18
C5	New trends on uric acid electroanalysis Ligia CHELMEA (1,2,3), Mihaela BADEA (1,2), Ioan SCARNECIU (4) (1) Department of Fundamental, Prophylactic and Clinical Disciplines, Faculty of Medicine, Transilvania University of Brasov, Romania (2) Research Center for Fundamental Research and Prevention Strategies in Medicine, Research and Development Institute of the Transilvania University of Brasov (3) Department of Infectious Diseases, Pulmonology and Infectious Diseases Clinical Hospital of Brasov, Romania (4) Department of Medical and Surgical Specialties, Faculty of Medicine, Transilvania University of Brasov, Romania	19
C6	Aspects regarding the superior valorization of marine biomass in human nutrition Livi GACEU Faculty of Food and Tourism, Transilvania University of Brasov, Romania	21
C7	The importance of fish in human nutrition with special emphasis on essential fatty acids Dijana BLAZHEKOVIKJ – DIMOVSKA Faculty of Biotechnical Sciences, University “St. Kliment Ohridski”, Bitola, Republic of North Macedonia	23

Food Safety and Healthy Living – FSHL 2023 – Book of Abstracts

C8	Valorization approaches of bioactive compounds recovered from by-products of olive oil industry and their application as functional ingredients in food matrices Ariola DEVOLLI (1), Edlira SHAHINASI (1), Katerina PIKULI (2) (1) Department of Chemistry, Faculty of Biotechnology and Food, Tirana Agricultural University, Albania (2) Department of Agrifood, Faculty of Agriculture, Fan S.Noli University of Korça, Albania	26
C9	Increasing consumer and business awareness on health effects and environmental impact of reheated cooking oil and its use as an alternative source on bio-based products Edlira SHAHINASI (1), Ariola DEVOLLI (1), Elias MAZLOUM (2), Armida ALIKAJ (2) (1) Department of Chemistry, Faculty of Biotechnology and Food, Tirana Agricultural University, Albania (2) Social Development Investment (Non Government Organisation), Tirana, Albania	28
C10	Transformations of pesticides within food processing Polonca TREBŠE Faculty of Health Sciences, University of Ljubljana, Slovenia	31
C11	Mastication / food preparation and cognitive impairment Corrado PAGANELLI (1), Teresa VALLELONGA (2), Maria Grazia PIANCINO (2) (1) Faculty of Medicine, University of Brescia, Italy (2) Faculty of Medicine, University of Turin, Italy	34
C12	Nutritional tools for infertility management Monica TARCEA, Irina MATRAN, Roxana MARTIN-HADMAS Department of Community Nutrition and Food Safety, “G.E. Palade” University of Medicine, Pharmacy, Science and Technology, Targu Mures, Romania	38
C13	Forest fruits and their applicability in dermatology Cristina-Ștefania GĂLBĂU, Lorena DIMA, Andreea NECULAU, Marius IRIMIE, Mihaela BADEA Transilvania University of Brasov, Romania	40
C14	Heavy metals and human health Mihaela HORHOCEA (1,2), Daniel HORHOCEA (1,2), Gabriela MARIN-STEFAN (1,2), Laurențiu NEDELCU (1,2), Mihaela BADEA (1) (1) Faculty of Medicine, Transilvania University of Brasov, Romania (2) Clinical County Hospital of Brașov, Romania	43
C15	Rare diseases, diagnosis and monitoring, a continuous challenge Corina DELIA (1,2), Geanina TOMA (1), Madalina VLAD (1,2), Mihaela CUTIERU (1), Michaela NANU (1), Daniela IORGULESCU (1), Florentina MOLDOVANU (1), Ioana ARDELEANU (1,3) (1) National Institute for Mother and Child Health “Alessandrescu Rusescu”, Bucharest, Romania (2) Faculty of Biology, University of Bucharest, Romania (3) “Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania	45

Food Safety and Healthy Living – FSHL 2023 – Book of Abstracts

C16	Prevention of foodborne illnesses through targeted interventions aiming to change consumer practices during cooking and storing food Anca Ioana NICOLAU Faculty of Food Science and Engineering, “Dunărea de Jos” University of Galati, Romania	47
C17	Contribution of high-pressure assisted technologies toward achieving food safety objectives Daniela BORDA Faculty of Food Science and Engineering, “Dunărea de Jos” University of Galati, Romania	49
C18	Comparative study of vitamin D status in children during the pandemic and after the pandemic period Madalina VLAD (1,2), Corina DELIA (1,2), Daniela HAIDAUTU (1), Nicoleta LACATUS (1), Geanina TOMA (1) (1) National Institute for Mother and Child Health “Alessandrescu Rusescu”, Bucharest, Romania (2) Faculty of Biology, University of Bucharest, Romania	51
C19	Gonadotropins in pediatric population – characteristics and particularities Madalina VLAD (1,2), Anisoara CIMPEAN (2), Corina DELIA (1,2), Daniela HAIDAUTU (1), Nicoleta LACATUS (1) (1) National Institute for Mother and Child Health Alessandrescu Rusescu, Bucharest, Romania (2) Faculty of Biology, University of Bucharest, Romania	53
C20	Chemical and biological characterization of bioactivities from natural sources Lea POGAČNIK (1), Rui F.M. SILVA (2) (1) Department of Food Science and Technology, Biotechnical Faculty, University of Ljubljana, Ljubljana, Slovenia (2) Research Institute for Medicines (iMed.Ulisboa) and Department of Pharmaceutical Sciences and Medicines (DCFM), Faculty of Pharmacy, Universidade de Lisboa, Lisbon, Portugal	54
C21	Basics of sensory processing: the chemical senses Rui F.M. SILVA (1), Lea POGAČNIK (2) (1) iMed.Ulisboa and DBBH, Faculty of Pharmacy, University of Lisbon, Portugal (2) Department of Food Science and Technology, Biotechnical Faculty, University of Ljubljana, Slovenia	56
C22	Biosensors – an opportunity for the future Jean Louis MARTY (1,2) (1) Sensbiotech, Ceret, France (2) Université de Perpignan, Perpignan Cedex, France	58
C23	Rapid detection of mycotoxins – from research to applications Gaelle CATANANTE (1), Jean Louis MARTY (2,3) (1) BAE équipe projet Biocapteur analyse environnement, Université de Perpignan and LBBM Observatoire Océanologique de Banyuls-sur-Mer Pierre Fabre 66650 Banyuls/Mer, France (2) Sensbiotech, Ceret, France	60

Food Safety and Healthy Living – FSHL 2023 – Book of Abstracts

	(3) Université de Perpignan Via Domitia, Perpignan, France	
C24	Electrochemical sensors – a weapon in the fight against antimicrobial resistance Bogdan FEIER, Denisa CAPATINA, Alexandra CANCIU, Mihaela TERTIS, Andreea CERNAT, Oana HOSU, Cecilia CRISTEA Department of Analytical Chemistry, Faculty of Pharmacy, "Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania	62
C25	Determination of antioxidant properties by spectrometric and electrochemical methods. Correlations among results Constantin APETREI, Irina Georgiana MUNTEANU, Alexandra Virginia BOUNEGRU Department of Chemistry, Physics and Environment, Faculty of Sciences and Environment, "Dunărea de Jos" University of Galați, Romania	64
C26	Valorization of food processing by-products Chiara DI LORENZO (1,2), Corinne BANI (1), Francesca MERCOGLIANO (1), Patrizia RESTANI (1,2) (1) Department of Pharmacological and Biomolecular Sciences "Rodolfo Paoletti", Università degli Studi di Milano, Milan, Italy (2) Coordinating Research Center "Innovation for Well-Being and Environment" (CRC), Università degli Studi di Milano, Milan, Italy	66
C27	Vitamin D in the context of COVID-19 on pediatric patients Maria TOTAN (1, 2), Ionela MANIU (3, 4) (1) Faculty of Medicine, "Lucian Blaga" University of Sibiu, Sibiu, Romania (2) Clinical Laboratory, Clinical Pediatric Hospital, Sibiu, Romania (3) Mathematics and Informatics Department, Research Center in Informatics and Information Technology, Faculty of Sciences, "Lucian Blaga" University, Sibiu, Romania (4) Pediatric Research Team, Clinical Pediatric Hospital, Sibiu, Romania	68
C28	Anticancer mechanisms of natural compounds Teodora-Cristiana GRĂDINARU (1), Mădălina PETRAN (1), Dorin DRAGOȘ (2,3), Marilena GÎLCĂ (1) (1) Department of Functional Sciences I/Biochemistry, Faculty of Medicine, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania (2) Department of Medical Semiology, Faculty of Medicine, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania (3) 1st Internal Medicine Clinic, University Emergency Hospital Bucharest, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania	71
C29	L-Citrulline – new wonder supplement for cardio-vascular health? Elena VASILICĂ Department of Functional Sciences I/Biochemistry, Faculty of Medicine, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania	73
C30	Ketogenic diet as a therapeutic tool Patrizia RESTANI, Corinne BANI, Francesca MERCOGLIANO, Chiara DI LORENZO	75

Food Safety and Healthy Living – FSHL 2023 – Book of Abstracts

	Department of Pharmacological and Biomolecular Sciences, Università degli Studi di Milano, Milan, Italy	
C31	Nutritional benefits in patients with chronic conditions Andrea Elena NECULAU, Anca Maria LACATUS, Laura ISOP Department of Fundamental, Clinical and Prophylactic Sciences, Transilvania University of Brasov, Romania	77
C32	Nutrition and food safety during pregnancy Laura Ioana GAVRILAȘ Department of Bromatology, Hygiene, Nutrition, Faculty of Pharmacy, “Iuliu Hatieganu” University of Medicine and Pharmacy, Cluj-Napoca, Romania	80
C33	Do microplastics in vineyard soil affect the bioavailability of vine nutrition? Erika JEZ (1), Elisa PELLEGRINI (2), Lorena BUTINAR (1), Jan RESCIC (1), Marco CONTIN (2) (1) University of Nova Gorica, Nova Gorica, Slovenia (2) Department of Agricultural, Food, Environmental and Animal Sciences, University of Udine, Udine, Italy	82
C34	Yeast-produced volatiles can act as antifungal bioagents against phytopathogen Botrytis cinerea Mitja MARTELANC University of Nova Gorica, School for viticulture and enology, Wine research centre, Vipava, Slovenia	84
C35	Lateral flow assay and food safety Arash MOHAMMADINEJAD Faculty of Medicine, Research and Development Institute of the Transilvania University of Brasov, Romania	87
C36	Aptamer - based detection of lysozyme Alina VASILESCU International Centre of Biodynamics, Bucharest, Romania	89
C37	Investigating the potential use of propolis in veterinary medicine Vesna KARAPETKOVSKA – HRISTOVA (1), Ivan PAVLOVIĆ (2) (1) Faculty of Biotechnical Sciences, University “St. Kliment Ohridski”, Bitola, N. Macedonia (2) Department of Microbiology and Parasitology, Scientific Institute of Veterinary Medicine of Serbia, Serbia	91
C38	Resilience and burnout. A systemic approach since the academic training period Liliana ROGOZEA (1,2), Florin LEASU (1,2), Mihaela BADEA (1), Daniela POPA (1) (1) Transilvania University of Braşov, Brasov, Romania (2) Brasov Pneumophthisiology and Infection Disease Clinical Hospital, Brasov, Romania	94

C26 VALORIZATION OF FOOD PROCESSING BY-PRODUCTS

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The food-processing industry produces a very high amounts of wastes or by-products that may represents a valuable and sustainable source of bioactive compounds. Wine industry is one of the sectors where secondary products are generated, with a potential negative impact on environment and human health. For this reason, international guidelines promote a circular approach for the management of winemaking wastes. Despite winemaking by-products are generally used to produce distillates, fertilizers and livestock feed, an alternative approach could be the formulation of healthy products, due to their content in polyphenols. The aim of the study was the application of *in vitro* methods for a preliminary evaluation of the phenolic pattern and the associated biological properties of wine making by-products from different red grape varieties. The methods included: 1) Folin-Cocalteau's assay for the assessment of total polyphenol content; 2) the vanillin assay for the quantification of total procyanidin content; 3) the pH differential method for the determination of total anthocyanin content; 4) DPPH assay for the measurement of total antioxidant activity; 4) dipeptidyl peptidase (DPPIV) inhibition assay to evaluate possible effects on glucose homeostasis. The results showed that winemaking by-products had potential positive effects on oxidative stress and promising effects on DPPIV.

Keywords: Winemaking residues, circular economy, polyphenols, biological properties

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Chiara Di Lorenzo is Associate Professor in Food Chemistry and Toxicology at the University of Milan. 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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