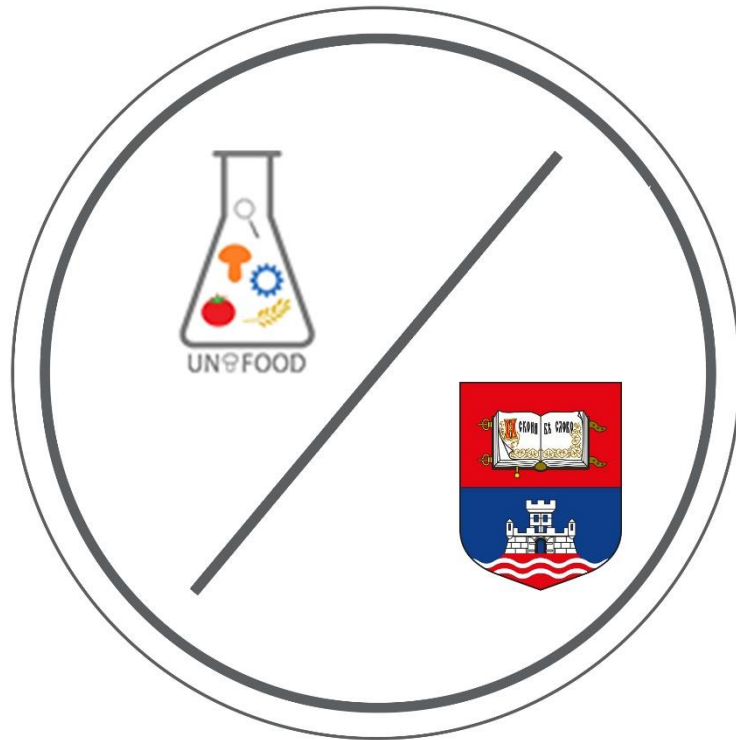


UNIFOOD CONFERENCE



University of Belgrade

Book of Abstracts

Belgrade, September 24-25, 2021

CIP - Kategorizacija u publikaciji Narodna biblioteka Srbije, Beograd

CIP - Каталогизација у публикацији - Народна библиотека Србије, Београд

663/664(048)

UNIFOOD conference (2021 ; Beograd)

Program i zbornik radova = Book of Abstracts / Unifood conference, Belgrade, September 24-25, 2021 ; [editors Mirjana Pešić, Živoslav Tešić].

- Belgrade : University of Belgrade, 2021 (Beograd : Razvojno-istraživački centar Grafičkog inženjerstva TMF).
- 197 str. ; 30 cm

Tiraž 30.

ISBN 978-86-7522-066-4

a) Храна - Апстракти

COBISS.SR-ID 47517705

UNIFOOD Conference, Belgrade September 24-25 2021

Book of Abstracts

Published by

University of Belgrade
Studentski trg 1
11000 Belgrade
www.bg.ac.rs,
email: kabinet@rect.bg.ac.rs

For Publisher

Ivanka Popović, rector

Editors

Mirjana Pešić
Živoslav Tešić

Cover Design Layout

Ivana Isaković

Circulation

30

ISBN 978-86-7522-066-4

Print

Razvojno-istraživački centar Grafičkog inženjerstva
Faculty of Technology and Metallurgy, Karnegijeva 4, Belgrade

Published

2021.



UNIFood2021 Conference

24th-25th September 2021 University of Belgrade

2nd International UNIFood Conference



SCIENTIFIC COMMITTEE

Prof. Dr Mirjana Pešić - University of Belgrade, Faculty of Agriculture, Serbia – President of Scientific Committee

Members:

Prof. Dr Ivanka Popović, University of Belgrade, Faculty of Technology and Metallurgy, Rector
Prof. Dr Petar Marin - University of Belgrade, Faculty of Biology, Vice-rector
Prof. Dr Viktor Nedović - University of Belgrade, Faculty of Agriculture
Dr Marina Soković - University of Belgrade, Institute for Biological Research "Siniša Stanković"
Prof. Dr Živoslav Tešić - University of Belgrade, Faculty of Chemistry
Prof. Dr Bojana Vidović - University of Belgrade, Faculty of Pharmacy
Prof. Dr Jelena Lozo - University of Belgrade, Faculty of Biology
Prof. Dr Ljiljana Gojković-Bukarica - University of Belgrade, School of Medicine
Prof. Dr Dušanka Milojković-Opsenica - University of Belgrade, Faculty of Chemistry
Prof. Dr Branko Bugarski - University of Belgrade, Faculty of Technology and Metallurgy
Prof. Dr Jevrosima Stevanović - University of Belgrade, Faculty of Veterinary Medicine
Prof. Dr Milica Fotirić-Akšić - University of Belgrade, Faculty of Agriculture
Prof. Dr Slađana Stanojević, University of Belgrade, Faculty of Agriculture
Prof. Dr Aleksandar Kostić - University of Belgrade, Faculty of Agriculture
Doc Dr Steva Lević - University of Belgrade, Faculty of Agriculture
Prof. dr Nikola Tomić - University of Belgrade, Faculty of Agriculture
Dr Dragana Stanić-Vučinić - University of Belgrade, Faculty of Chemistry
Dr Jelena Begović - Institute of Molecular Genetics and Genetic Engineering
Dr Nataša Golić - University of Belgrade, Institute of Molecular Genetics and Genetic Engineering
Dr Vuk Maksimović - University of Belgrade, Institute for Multidisciplinary Research
Dr Nevena Mihailović-Stanojević - University of Belgrade, Institute for Medical Research
Dr Uroš Gašić - University of Belgrade, Institute for Biological Research "Siniša Stanković"
Dr Tomislav Tosti - University of Belgrade, Faculty of Chemistry
Dr Bojana Balanč - University of Belgrade, Faculty of Technology and Metallurgy
Prof. Dr Je Yang - Shanghai Institute of Materia Medica, Chinese Academy of Sciences (SIMM), China
Prof. Dr Farid Chemat - Université d'Avignon et des Pays du Vaucluse, Avignon, France
Prof. Dr Jose Maria Lagaron - Institute of Agrochemistry and Food Technology (IATA) of the Spanish Council for Scientific Research (CSIC) , Valencia, Spain
Prof. Dr Charalampos Proestos, National and Kapodistrian University of Athens Zografou, Athens, Greece
Dr Didier Dupont, French National Institute for Agriculture Research, France
Dr Linda Giblin, Teagasc Food Research Centre, Moorepark, Ireland
Prof Dr Marco Arlorio, Associate Professor of Food Chemistry at the Dipartimento di Scienze del Farmaco, Università del Piemonte Orientale, Novara, Italy
Prof. Dr Isabela Ferreira - Polytechnic Institute of Braganca, Coordinator of the Mountain Research Centre (CIMO), Portugal
Dr Irena Vovk –National Institute of Chemistry, Ljubljana, Slovenia
Prof. Dr Gertrud Morlock - Justus Liebig University Giessen, Germany
Sokol Abazi, Canadian institute of technology, Tirana and Noval Laboratory Durres, Albania
Prof. Dr Verica Dragović-Uzelac – Faculty of Food Technology and Biotechnology, Zagreb, Croatia
Nikolaos Tzortzakis, Cyprus University of Technology, Department of Agricultural Sciences, Biotechnology and Food Science, Limassol, Cyprus
Prof. Dr Dražen Lušić, Department of Environmental Health Faculty of Medicine, University of Rijeka Croatia
Dr Dorisa Čela, Noval Laboratory, Durres, Albania



UNIFood2021 Conference

24th-25th September 2021 University of Belgrade

2nd International UNIFood Conference



ORGANIZING COMMITTEE

Ivana Isaković - University of Belgrade, Serbia

Nevena Arandjelović - University of Belgrade, Serbia

Nikola Savić - University of Belgrade, Serbia

Dr Ana Salević - University of Belgrade, Faculty of Agriculture, Serbia

MSc Petar Batinić, Institute for Medicinal Plant Research „Dr Josif Pančić“, Belgrade, Serbia

MSc Danijel Milinčić – University of Belgrade, Faculty of Agriculture, Serbia

MSc Dušan Radojević, University of Belgrade, Institute of Molecular Genetics and Genetic Engineering, Serbia

MSc Marina Kostić - University of Belgrade, Institute for Biological Research "Siniša Stanković"



ELEMENTAL PROFILE OF RECORDED AND UNRECORDED FRUIT SPIRITS AND HEALTH RISK ASSESSMENT

*Ljilja, D., Torović^{1,2}, Branislava, U., Srdjenović-Čonić^{1,3}, Nebojša, V., Kladar^{1,3}, Nebojša, Salaj²,
Milan, Lj., Jovanović², Danijela, R., Lukić², Sanja, V., Bijelović^{1,2}*

¹University of Novi Sad, Faculty of Medicine, Novi Sad, Serbia

²Institute of Public Health of Vojvodina, Novi Sad, Serbia

³University of Novi Sad, Faculty of Medicine, Center for Medical and Pharmaceutical Investigations and Quality Control, Novi Sad, Serbia

*Corresponding author: ljilja.torovic@mf.uns.ac.rs

Home production of fruit spirits has a very long tradition in Serbia. Such spirits are often not being taxed nor captured by official sale statistics, and therefore are termed “unrecorded alcohol”. Unrecorded alcohols also escape safety control but reach numerous consumers, thus raising health risk concerns.

A total of 153 samples of fruit spirits was collected during 2020 in Vojvodina, 26 with tax stamp (recorded), and 127 produced in private homes or small-scale distilleries and obtained mainly directly from producers (unrecorded). Profiles of 22 elements were provided by ICP-MS and a direct mercury analyser. Daily intake of elements was estimated at different consumption levels, considering the share of recorded and unrecorded alcohol consumption. Hazard quotient (HQ)/hazard index (HI) method was used to estimate health risk, as well as comparison with benchmark doses (BMDLs).

Only copper and lead concentrations exceeded toxicological thresholds proposed by the AMPHORA project (73.2 and 8.5% of all samples, respectively). The mean copper content of unrecorded spirits was substantially higher than that of recorded ones (8.2 vs 1.2 mg/l), probably due to the different materials used for processing equipment. Exposure assessed in average and regular drinker scenarios translated into HQs was below the limit level of 1 for both men and women. Furthermore, HI, a sum of individual elements' HQs for a sample, also remained low (maximum 0.4). In chronic heavy drinker scenarios, only if total alcohol consumption was considered attributable to unrecorded spirits HIs exceeded 1 for 15% of the samples for men and 9.4% for women. In the same scenario, exposure to lead at a high percentile exceeded the BMDL for nephrotoxicity, whereas arsenic exposure was below the BMDL in all exposure scenarios.

No legal limits for elemental contaminants in spirits have yet been set, although some of them can cause toxic effects even at low concentrations.

Keywords: Fruit spirits, Elements, Risk assessment, ICP-MS