

BOOK OF ABSTRACTS



*XIV International Scientific Agriculture Symposium
"Agrosym 2023"
Jahorina, October 05-08, 2023*



BOOK OF ABSTRACTS

**XIV International Scientific Agriculture Symposium
“AGROSYM 2023”**



Jahorina, October 05 - 08, 2023

Impressum

XIV International Scientific Agriculture Symposium „AGROSYM 2023“

Book of Abstracts Published by

University of East Sarajevo, Faculty of Agriculture, Republic of Srpska, Bosnia
University of Belgrade, Faculty of Agriculture, Serbia
Mediterranean Agronomic Institute of Bari (CIHEAM - IAMB) Italy

International Society of Environment and Rural Development, Japan
Balkan Environmental Association (B.EN.A), Greece
Centre for Development Research, University of Natural Resources and Life Sciences
(BOKU), Austria
Perm State Agro-Technological University, Russia
Voronezh State Agricultural University named after Peter The Great, Russia
Tokyo University of Agriculture
Shinshu University, Japan
Faculty of Agriculture, University of Western Macedonia, Greece
Enterprise Europe Network (EEN)
Faculty of Agriculture, University of Akdeniz - Antalya, Turkey
Selçuk University, Turkey

University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania
Slovak University of Agriculture in Nitra, Slovakia
Ukrainian Institute for Plant Variety Examination, Kyiv, Ukraine
National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine
Valahia University of Targoviste, Romania
National Scientific Center „Institute of Agriculture of NAAS“, Kyiv, Ukraine
Saint Petersburg State Forest Technical University, Russia
University of Valencia, Spain
Faculty of Agriculture, Cairo University, Egypt
Tarbiat Modares University, Iran
Chapingo Autonomous University, Mexico

Department of Agricultural, Food and Environmental Sciences, University of Perugia, Italy
Higher Institute of Agronomy, Chott Mariem-Sousse, Tunisia
Watershed Management Society of Iran
Institute of Animal Science- Kostinbrod, Bulgaria
SEASN- South Eastern Advisory Service Network, Croatia
Faculty of Economics Brcko, University of East Sarajevo, Bosnia and Herzegovina
Biotechnical Faculty, University of Montenegro, Montenegro
Institute of Field and Vegetable Crops, Serbia
Institute of Lowland Forestry and Environment, Serbia
Institute for Science Application in Agriculture, Serbia
Agricultural Institute of Republic of Srpska - Banja Luka, Bosnia and Herzegovina
Maize Research Institute “Zemun Polje”, Serbia
Faculty of Agriculture, University of Novi Sad, Serbia
Institute for Animal Science, Ss. Cyril and Methodius University in Skopje, Macedonia
Academy of Engineering Sciences of Serbia, Serbia
Balkan Scientific Association of Agricultural Economics, Serbia
Institute of Agricultural Economics, Serbia

Editor in Chief

Dusan Kovacevic

Technical editors

Sinisa Berjan
Milan Jugovic
Rosanna Quagliariello

Website:

<http://agrosym.ues.rs.ba>

CIP - Каталогизација у публикацији
Народна и универзитетска библиотека
Републике Српске, Бања Лука

631(048.3)(0.034.4)

INTERNATIONAL Scientific Agricultural Symposium "Agrosym
2023" (14 ; Jahorina)

Book of Abstracts [Електронски извор] / XIV International
Scientific Agriculture Symposium "Agrosym 2023", Jahorina,
October 05 - 08, 2023 ; [editor in chief Dušan Kovačević]. - East
Sarajevo =Istočno Sarajevo : Faculty of Agriculture =Poljoprivredni
fakultet, 2023. - 1 електронски оптички диск (CD-ROM) : текст,
слика ; 12 cm

Системски захтеви: Нису наведени. - Насл. са насл. екрана. -
Регистар.

ISBN 978-99976-987-7-3

COBISS.RS-ID 139166465

RASPBERRY SEEDS AS A SOURCE OF ACTIVE COMPOUNDS FOR ENCAPSULATES

Milica SREDOJEVIĆ^{1*}, Ivanka ĆIRIĆ¹, Dragana DABIĆ ZAGORAC¹, Milica FOTIRIĆ-
AKŠIĆ², Biljana RABRENOVIĆ², Nataša OBRADOVIĆ³, Mina VOLIĆ³, Maja NATIĆ⁴

¹Innovative Centre, Faculty of Chemistry; University of Belgrade, Studentski trg 12-16, Belgrade, Serbia

²Faculty of Agriculture; University of Belgrade, Nemanjina 6, Belgrade, Serbia

³Innovation Center, Faculty of Technology and Metallurgy; University of Belgrade, Karnegijeva 4, Belgrade, Serbia

⁴Faculty of Chemistry; University of Belgrade, Studentski trg 12-16, Belgrade, Serbia

*Corresponding author: pantelicm@chem.bg.ac.rs

Abstract

The amount of fruits and vegetables losses in Republic of Serbia were over 150 000 t in 2020, according to FAOSTAT. United Nations Development Programme (UNDP) support innovative solutions that saves and renews natural resources and energy, prolongs the use of materials and products, and reduces waste. These solutions are of strategic importance and directly affect the protection of the environment. Seeds, peels, and pomace wasted in various stages of fruits processing are abundant in valuable components and considered as great source of antioxidants. Present research is designed to apply the principles of circular practices on green extraction procedures and characterization of natural active formulations from juice production industry waste. Starting raw material was raspberry seed, as source of ingredients with antioxidant and antimicrobial potential. Oils were extracted from seeds and the remaining cold-pressed cake was used for the extraction of polyphenols. Green extraction procedure was optimized by using several environmentally acceptable solvents and efficiency of applied eutectic mixtures were determined based on content of total polyphenols and antioxidant potential. Liquid and high-performance thin-layer chromatographies were used to estimate the contents of ellagic acid (free and total) and phenolic profile, respectively. Our goal is to encapsulate the obtained extracts, to ensure greater stability of active ingredients, their controlled and prolonged release, all in order to obtain technological solutions in food industry (e.g. edible coatings) and cosmetics. By protecting resources and the environment, our non-linear study is designed to promote the take-make-dispose-recycle approach and it is financially supported by the UNDP Serbia (2023).

Keywords: *Juice industry waste, Raspberry seeds, Green extraction, Circular economy.*