

BOOK of ABSTRACTS



International Conference
on Advanced Production and Processing

**2nd International Conference
on Advanced Production and Processing
20th-22nd October 2022
Novi Sad, Serbia**

Title:

Book of Abstracts of the 2nd International Conference on Advanced Production and Processing publishes abstracts from the following fields: Innovative Food Science and Bioprocesses, Nutraceuticals and Pharmaceuticals, Sustainable Development, Chemical and Environmental Engineering, Materials Design and Applications, Petroleum Refining and Production.

Publisher:

University of Novi Sad, Faculty of Technology Novi Sad,
Bulevar cara Lazara 1, 21000 Novi Sad, Serbia

For publisher:

prof. Biljana Pajin, PhD, Dean

Editorial board:

Jovana Petrović, Ivana Nikolić, Milica Hadnađev Kostić, Snežana Škaljac, Milana Pribić, Bojan Miljević, Branimir Pavlić, Olga Govedarica

Editor-in-Chief:

Prof. Zita Šereš, PhD

Design and Printing Layout:

Saša Vulić

CIP - Каталогizacija u publikaciji
Biblioteke Matice srpske, Novi Sad

658.5(048.3)

INTERNATIONAL Conference on Advanced Production and Processing (2 ; 2022 ; Novi Sad)
Book of abstracts [Elektronski izvor] / 2nd International Conference on Advanced Production and Processing, 20th-22nd October 2022, Novi Sad ; [editor-in-chief Zita Šereš]. - Novi Sad : Faculty of Technology, 2022

Način pristupa (URL): <https://www.tf.uns.ac.rs/download/icap-2022/book-of-abstracts.pdf>. - Opis zasnovan na stanju na dan 14. 10. 2022. - Nasl. s naslovnog ekrana.

ISBN 978-86-6253-160-5

a) Tehnologija - Proizvodnja - Apstrakti

COBISS.SR-ID 77341961



**2nd International Conference
on Advanced Production and Processing
20th-22nd October 2022
Novi Sad, Serbia**

CONFERENCE CHAIRMAN

Prof. Biljana Pajin, Dean of the Faculty of Technology Novi Sad

HONORARY COMMITTEE

Professor Marijana Carić,

Emeritus Professor at University of Novi Sad, Serbia

Professor Radmila Marinković Nedućin,

Emeritus Professor at University of Novi Sad, Serbia

Professor Miodrag Tekić,

Emeritus Professor at University of Novi Sad, Serbia

Professor Vladimir Srdić,

Corresponding member of Serbian Academy of Sciences and Arts,

Faculty of Technology Novi Sad, University of Novi Sad, Serbia

Professor Jasna Čanadanović–Brunet,

highest cited professor at Faculty of Technology

Novi Sad, University of Novi Sad, Serbia

ORGANISING COMMITTEE

from the Faculty of Technology Novi Sad, University Novi Sad, Serbia

Prof. Zita Šereš

Prof. Jaroslav Katona

Prof. Nataša Đurišić Mladenović

Prof. Lidija Petrović

Prof. Jelena Pejin

Prof. Dragan Govedarica

Prof. Senka Vidović

Prof. Jelena Pavličević

Prof. Bojana Ikonić

Prof. Ljiljana Popović

Prof. Marija Milanović

Prof. Ivana Nikolić

Prof. Milica Hadnađev Kostić

Prof. Olga Govedarica

Prof. Jadranka Fraj

Prof. Senka Popović

Prof. Marija Jokanović

Prof. Zorica Stojanović

Branimir Pavlić, Assistant Professor

Uroš Miljić, Assistant Professor

Snežana Škaljac, Senior Research Associate

Sanja Panić, Senior Research Associate

Bojan Miljević, Senior Research Associate

Jovana Petrović, Research Associate

Mirjana Petronijević, Research Associate

Vesna Vasić, Research Associate

Ana Đurović, Research Associate

Aleksandra Cvetanović Kljakić, Research Associate

Nataša Nastić, Research Associate

Ljiljana Spasojević, Research Assistant

Jelena Tanasić, Research Assistant

Andrea Nesterović, Research Assistant

Milana Pribić, Teaching Assistant

Julijana Blagojević, Teaching Assistant

Jelena Škrbić, Research Trainee

Sonja Stojanov, Research Trainee

SCIENTIFIC COMMITTEE

- Prof. Viktor Nedović, Faculty of Agriculture, University of Belgrade, Serbia
- Prof. Zorica Knežević-Jugović, Faculty of Technology and Metallurgy, University of Belgrade, Serbia
- Anamarija Mandić, Principal Research Fellow, Institute of Food Technology in Novi Sad, University of Novi Sad, Serbia
- Prof. Verica Dragović-Uzelac, Faculty of Food Technology and Biotechnology, University of Zagreb, Croatia
- Prof. Dragana Šoronja Simović, Faculty of Technology Novi Sad, University of Novi Sad, Serbia
- Prof. Sandra Budžaki, Faculty of Food Technology, Josip Juraj Strossmayer University of Osijek, Croatia
- Prof. Sonja Smole Možina, Biotechnical Faculty, University of Ljubljana, Slovenia
- Prof. Drago Šubarić, Faculty of Food Technology, Josip Juraj Strossmayer University of Osijek, Croatia
- Prof. Zsuzsanna László, Faculty of Engineering, University of Szeged, Hungary
- Prof. Aleksandra Tepić Horecki, Faculty of Technology Novi Sad, University of Novi Sad, Serbia
- Vesna Đorđević, Principal Research Fellow, Institute of Hygiene and Meat Technology, Belgrade, Serbia
- Prof. Małgorzata Korzenowska, Wrocław University of Environmental and Life Sciences, Poland
- Prof. Cecilia Hodúr, Faculty of Engineering, University of Szeged, Hungary
- Prof. Gordana Dimitrovska, Faculty of Biotechnical Sciences, University "St. Kliment Ohridski", Bitola, Macedonia
- Prof. Borislav Malinović, Faculty of Technology, University of Banja Luka, Bosnia and Herzegovina
- Prof. Zoran Zeković, Faculty of Technology Novi Sad, University of Novi Sad, Serbia
- Prof. Ljijana Đekić, Faculty of Pharmacy, University of Belgrade, Serbia
- Prof. Predrag Putnik, Department of Food Technology, University of the North, Croatia
- Prof. Rita Ambrus, Inst. of Pharmaceutical Technology and Regulatory Affairs Faculty of Pharmacy, University of Szeged, Hungary
- Prof. Vlada Veljković, Corresponding Member of Serbian Academy of Sciences and Arts, Faculty of Technology in Leskovac, University of Niš, Serbia
- Perica Bošković, Assistant Professor, Faculty of Chemistry and Technology, University of Split, Croatia
- Prof. Olivera Stamenković, Faculty of Technology in Leskovac, University of Niš, Serbia
- Prof. Gülsün Akdemir Evrendilek, Bolu Abant İzzet Baysal University, Bolu, Turkey
- Marinella Farré, Principal Research Fellow, Institute of Environmental Assessment and Water Research, CSIC, Barcelona, Spain
- Prof. João Crespo, NOVA School of Science and Technology, Universidade Nova de Lisboa, Portugal
- Prof. Zoran Petrović, Full member of Serbian Academy of Sciences and Arts, Kansas Polymer Research Center, Pittsburg State University, Pittsburg, USA
- Prof. Vladimir Srdić, Corresponding member of Serbian Academy of Sciences and Arts, Faculty of Technology Novi Sad, University of Novi Sad, Serbia
- Prof. Branka Pilić, Faculty of Technology Novi Sad, University of Novi Sad, Serbia
- Branko Matović, Principal Research Fellow, Vinča Institute of Nuclear Sciences, University of Belgrade, Serbia,
- Prof. Ana Brás, Faculty of Engineering and Technology, Liverpool John Moores University, United Kingdom
- Lucretia Miu, Principal Research Fellow, National Research & Development Institute for Textile and Leather, Bucharest, Romania
- Polonca Ropret, Principal Research Fellow, Head of Research Institute at Institute for the Protection of Cultural Heritage of Slovenia, University of Ljubljana, Slovenia
- Prof. Alexander Knyazev, Chemical Faculty, Lobachevsky State University of Nizhni Novgorod, Russia
- Prof. Dmitry Grishin, Full member of Russian Academy of Sciences, Lobachevsky State University of Nizhni Novgorod, Russia
- Prof. Blaž Likozar, National Institute of Chemistry, Slovenia



POLYPHENOLS PROFILE OF WILD THYME EXTRACTS OBTAINED BY CONVENTIONAL SOLID-LIQUID AND ULTRASOUND-ASSISTED EXTRACTION

Živan Mrkonjić¹, Dušan Rakić¹, Muammer Kaplan², Nemanja Teslić³, Zoran Zeković¹, Ivana Lazarević¹, Branimir Pavlić¹

¹University of Novi Sad, Faculty of Technology Novi Sad, Bulevar cara Lazara 1, 21000 Novi Sad, Serbia, zivan_mrkonjic@hotmail.com

²TUBITAK Marmara Research Centre, Institute of Chemical Technology, P.O. Box 21, 41470 Gebze, Kocaeli, Turkey

³University of Novi Sad, Institute of Food Technology, Bulevar cara Lazara 1, 21000 Novi Sad, Serbia

Thymus serpyllum extracts, potentially enriched with a wide spectrum of polyphenols, were subjected to LC-MS-MS analysis in order to determine their qualitative polyphenols profile. Analyses were conducted in the sample with the highest polyphenols yield and antioxidant activity obtained by conventional extraction using 60% of ethanol for 24 h at shaking speed of 150 rpm (Sample CE), sample obtained by ultrasound-assisted extraction at 65 °C for 55 min using 60% ethanol (Sample UAE-CP) and sample obtained at the temperature of 70.28 °C, extraction time of 70 min and using 45% ethanol as a solvent (Sample UAE-OPT). According to results of identification, the Sample UAE-CP contained the highest number of compounds, 31, a total of 30 different compounds were identified in the Sample CE and 27 compounds in the Sample UAE-OPT. Identified flavonoid subgroups were flavanones, flavan-3-ols, flavonols, flavones and isoflavones. Some of them were identified in aglycone form only. On the other side, flavanones were identified not only in aglycone form, but also in a form of their 7-*O*-glucoside, e.g. naringenin-7-*O*-glucoside. Finally, flavonols were identified in various forms, as compounds in aglycone form, then in form of their 3-*O*-glycosides with rutinose, glucose and galactose as the carbohydrate compounds, but in form of glucuronide and hexoside isomer as well. Identified phenolic acids were gallic, vanillic, ellagic, caffeic, 3-*p*-coumaroylquinic, 4-*p*-coumaroylquinic acid, coumaric acid hexoside isomer, *p*-coumaric, *cis*- and *trans*-couteric acid. Taking into account the discrepancy in the polyphenols profiles of aforementioned extracts, it could be concluded that different extraction techniques under different extraction conditions or using different extraction solvent could be of a great importance for establishing the adequate polyphenols profile of *T. serpyllum* extracts.

Keywords: Thymus serpyllum, Herbal dust, By-product, Antioxidants.

Acknowledgements: This research was supported by the Science Fund of the Republic of Serbia, [7750168], Novel extracts and bioactive compounds from under-utilized resources for high-value applications— BioUtilize.

2nd International Conference on Advanced Production and Processing 20th-22nd October 2022, Novi Sad, Serbia



International Conference
on Advanced Production and Processing



Министарство просвете,
науке и технолошког
развоја



University of Novi Sad
Dr Zorana Đinđića 1,
21000 Novi Sad, Serbia



Faculty of Technology Novi Sad
Bulevar cara Lazara 1,
21000 Novi Sad, Serbia



Thank you for Mr. Branislav Bogdanović dipl.ing. and for Biljana Bogdanović dipl.ing., members of the ALUMNI CLUB of Faculty of Technology Novi Sad for their donation of sweets for ICAPP2022.