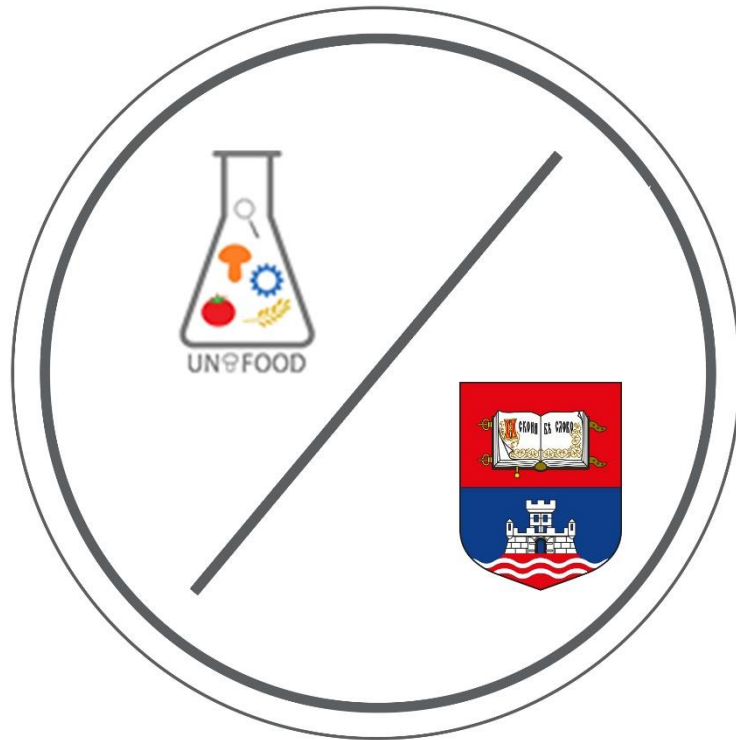


UNIFOOD CONFERENCE



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



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DETECTION OF CHOKEBERRY ADULTERATION BY HPTLC-BASED METABOLOMICS

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Chokeberry is a plant belonging to the family Rosaceae which has a long history of edible and medicinal use. The aims of this study are: i) to investigate of HPTLC profile of berries samples using HPTLC technique based metabolomics approach, ii) to determine the botanical origin of investigated chokeberry adulterations iii) to identify the most important botanical markers responsible for classification.

A simple, rapid, and high-throughput planar chromatography (HPTLC) method was applied in combination with multivariate techniques for differentiating chokeberry samples and identification of the main metabolites of chokeberry and four common adulterants. Images of HPTLC chromatograms obtained using two different detections i.e. visible light and derivatization with natural products reagent were used as a dataset for multivariate analysis.

Principal component analysis and Orthogonal Partial Least Squares Discriminant Analysis confirmed the discrimination of five botanically different samples and recognized their main markers such as responsible for differences between chokeberry and four common adulterants.

The obtained results showed that the HPTLC-based metabolomics approach can be a very reliable technique for the detection of chokeberry adulteration.

Keywords: Chokeberry, High-performance thin-layer chromatography, Adulteration, Metabolomics.

Acknowledgements: This work was financed by the Organization for the Prohibition of Chemical Weapons, grant No. L/ICA/ICB/218811/19.