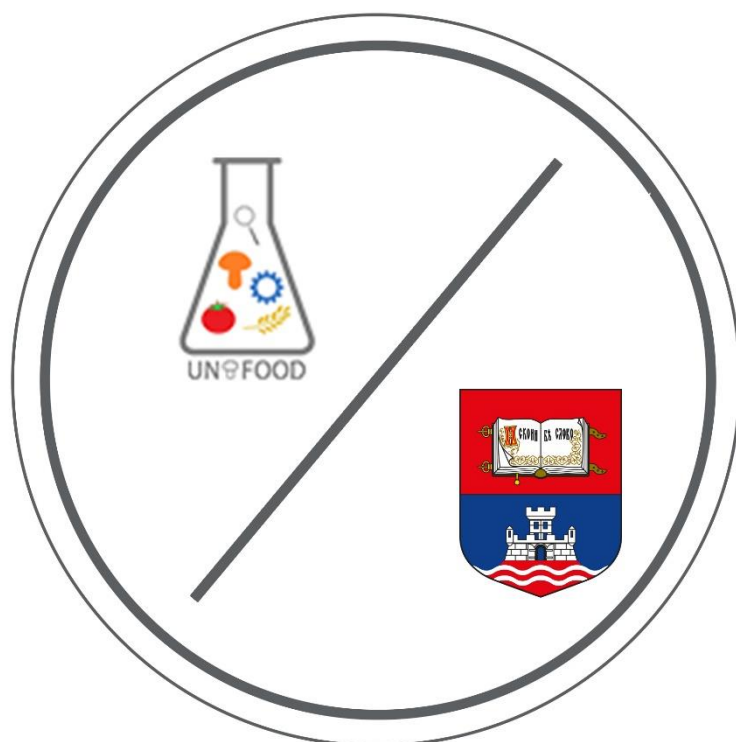


# UNIFOOD CONFERENCE



**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

24<sup>th</sup>-25<sup>th</sup> September 2021 University of Belgrade

## 2<sup>nd</sup> 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

24<sup>th</sup>-25<sup>th</sup> September 2021 University of Belgrade

## 2<sup>nd</sup> 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"



# UNIFood2021 Conference

24<sup>th</sup>-25<sup>th</sup> September 2021 University of Belgrade

## 2<sup>nd</sup> International UNIFood Conference



## The word of welcome

*Dear colleagues,*

We would like to welcome you to the **2<sup>nd</sup> UNIFood International Conference –UNIFood2021**. We hope that this gathering will engage not only academics, but also the stakeholders from all the relevant industries and business sectors, serving as a meeting point and a platform for proliferation of new ideas and development of new partnerships.

The first UNIFood conference, organized as national, was established 2018. year as one of the events in honor of the **210th Anniversary** celebration of the **University of Belgrade** that ranked at Shanghai list on 35<sup>th</sup> place for the 2017 year in subject *Food Science and Technology*. The University of Belgrade has been recognized as a leading international scientific institution by LERU when it was selected to be a member of CE7, an informal network of seven Central and Eastern European universities collaborating with LERU on key research and education challenges. Furthermore, University of Belgrade joined European University Alliance Circle U. Following the European Commission's launch of the European Universities initiative, a group of research-intensive universities has entered into a Memorandum of Understanding with the intention of establishing a new university alliance: Aarhus University, Humboldt University of Berlin, King's College London, UC Louvain, University of Belgrade, University of Oslo and Université de Paris.

We are pleased that you have decided to take part in this mutual conversation, where many will present their recent work, through poster sessions, oral communications or simply by asking questions. One of the goals of this Conference is cooperation between academia and food industry. Food scientists, technologists, researchers, nutritionists, engineers and entrepreneurs will exchange their knowledge about the latest advances in all aspects of food production, processing, sustainability, safety and security, nutrition and health, hi-tech equipment, ethics and knowledge transfer supporting environment. At this meeting, over 200 participants from 23 countries will take part.

Belgrade, one of the oldest city in the Europe, always young, at the confluence of the Sava and Danube rivers, will be your host. At the confluence of new ideas and experiences we again wish you a warm welcome.

*Sincerely,*

*Prof. Dr Mirjana Pešić*

*President of the Scientific Committee  
of UNIFood2021*

*Prof. Dr Ivanka Popović*

*Rector of the University of Belgrade*

---



# UNIFood2021 Conference

24<sup>th</sup>-25<sup>th</sup> September 2021 University of Belgrade

## 2<sup>nd</sup> International UNIFood Conference



The conference organizers gratefully acknowledge the generous support provided by the following:

---

### CO-ORGANIZER



Република Србија  
МИНИСТАРСТВО ПРОСВЕТЕ,  
НАУКЕ И ТЕХНОЛОШКОГ РАЗВОЈА

---

### DONORS



---

### WITH SUPPORT FROM





# UNIFood2021 Conference

24<sup>th</sup>-25<sup>th</sup> September 2021 University of Belgrade

## 2<sup>nd</sup> International UNIfood Conference



### Sadržaj

Plenary lectures .....	1
Keynote speakers .....	5
Invited lecturers from University of Belgrade .....	11
Section lecturers .....	19
Lecture and oral presentation within sections .....	23
Section FOOD NUTRITION AND HEALTH .....	23
Section FOOD QUALITY AND SAFETY .....	33
Section FOOD PRODUCTION, PROCESSING, SUSTAINABILITY, ADDED-VALUE FOOD .....	43
Poster presentations within sections .....	53
Section FOOD NUTRITION AND HEALTH .....	53
Section FOOD QUALITY AND SAFETY .....	91
Section FOOD PRODUCTION, PROCESSING, SUSTAINABILITY, ADDED-VALUE FOOD .....	143

---



**UNIFood2021 Conference**  
24<sup>th</sup>-25<sup>th</sup> September 2021 University of Belgrade  
**2<sup>nd</sup> International UNIFood Conference**



**WALNUTS CONSUMPTION MODULATES ENDOGENOUS METABOLIC  
CONVERSION TOWARDS LONG-CHAIN FATTY ACIDS AND AFFECTS  
INDIVIDUAL FATTY ACID CONTENT IN PLASMA AND LIVER OF  
FRUCTOSE-FED RATS**

***Irena Krga<sup>1</sup>, Manja Zec<sup>1</sup>, Marija Takić<sup>1</sup>, Jasmina Debeljak-Martačić<sup>1</sup>, Goran Korićanac<sup>2</sup>, Slavica Ranković<sup>1</sup>, Tamara Popović<sup>1</sup>, Marija Glibetić<sup>1</sup>***

*<sup>1</sup>Centre of Excellence in Nutrition and Metabolism Research, Institute for Medical Research, National Institute of Republic of Serbia, University of Belgrade, Belgrade, Serbia*

*<sup>2</sup>Laboratory for Molecular Biology and Endocrinology, Vinča Institute of Nuclear Sciences, National Institute of Republic of Serbia, University of Belgrade, Belgrade*

\* Corresponding author: [irena.krga@imi.bg.ac.rs](mailto:irena.krga@imi.bg.ac.rs)

Disturbed plasma and tissue fatty acid profiles have been linked with metabolic syndrome, a cluster of metabolic abnormalities associated with increased cardiovascular disease risk. Walnuts are rich in dietary fats, and growing evidence suggests various cardiometabolic benefits of their consumption. However, no previous study investigated the metabolic breakdown of fats contained in walnuts following their consumption. Therefore, this study aimed to evaluate the impact of 6-week walnut consumption on plasma and liver fatty acid metabolic conversion toward longer-chain products and individual fatty acid composition in rats with a cluster of metabolic disturbances. Three-week-old male Wistar rats were fed for 9 weeks a standard diet with or without 10% fructose in drinking water. Afterwards, a diet of half of the animals of each group was supplemented with walnuts (2.4 g/day) for additional 6 weeks. Total lipids were extracted from plasma and liver and fatty acids determined by gas chromatography. Our results revealed that walnut consumption decreased arachidonic/linoleic and palmitoleic/palmitic acid ratios in plasma and liver total lipids. It also significantly affected the docosahexaenoic/alpha-linolenic acid ratio, with up to a 4-fold decrease in the animals at metabolic risk. We also observed that walnuts consumption induced changes in profiles of individual fatty acids. It increased linoleic and eicosapentaenoic acid levels and decreased palmitoleic acid levels in rat plasma, while increasing liver linoleic and docosahexaenoic acid levels. Independently of the fructose-induced metabolic risk, walnuts induced up to a 3-fold increase in alpha-linolenic acid and decreased arachidonic acid in both tissues. They also reduced palmitic, oleic, and adrenic acid levels and increased docosapentaenoic acid content. Taken together, these results suggest the beneficial effects of walnuts on fatty acid profiles in rats and highlight the promising potential of walnuts in the prevention and treatment of metabolic syndrome.

*Keywords: Walnuts, Fatty acid profiles, Plasma, Liver, Metabolic syndrome*