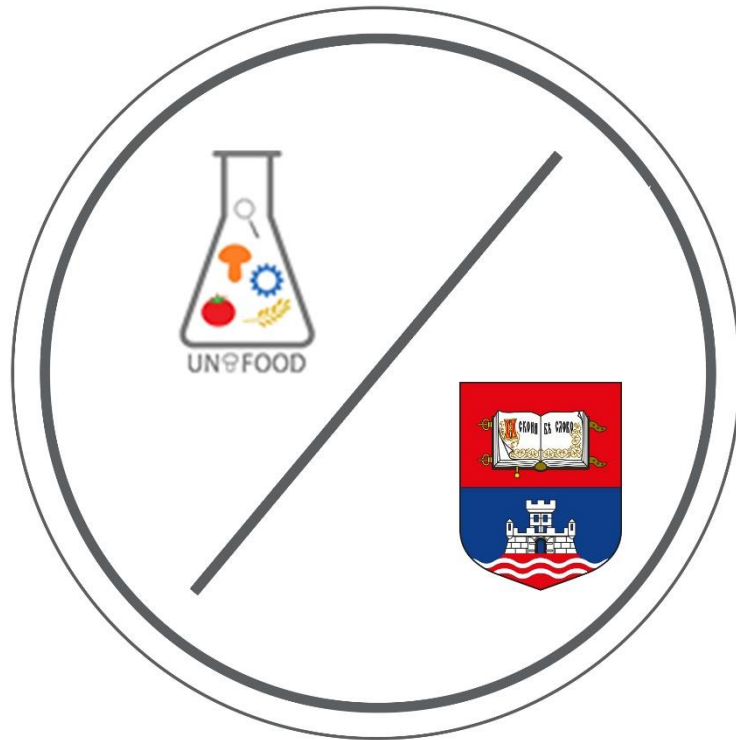


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The word of welcome

Dear colleagues,

We would like to welcome you to the **2nd 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 35th 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



***DROSOPHILA MELANOGASTER* AS A MODEL SYSTEM IN STUDYING
NUTRITION – THE KNOWLEDGE OBTAINED IN WORK WITH FLY STRAINS
MAINTAINED FOR MORE THAN TWO DECADES ON DIFFERENT DIETS**

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Fruit fly *Drosophila melanogaster* has been representing one of the most suitable model systems for studying underlying mechanisms in various biological research for more than a hundred years. Findings in the field of genetics and genomics certainly paved the way for this model system to be used in the study of the mechanisms underlying complex human diseases, such as Alzheimer's, Parkinson's and others. It can be also used in studying the effects of nutrition and/or malnutrition, and to some extent, be extrapolated to humans. In the year 2000, we collected *D. melanogaster* flies from natural population and established and maintained five “nutritional” strains. Flies were reared on standard cornmeal laboratory food and four fruit/vegetable diets. All substrates were analysed for protein/carbohydrate ratios, and their antioxidant properties were established. During the years of running *in vivo* studies, we have shown that diet can affect individuals on many levels. As the most pertinent to the fitness, we observed the impact of diet on body morphology (the size, shape and symmetry of certain body traits), the chemistry of odors essential for social and sexual recognition, behavior, and life history traits. We also considered food choice in those flies in order to find out how they maintained nutritional homeostasis. In addition, we experimented with standard *Drosophila* diet by adding chemicals and some bioactive plant components in growing substrates (such as the black chokeberry fruit extract), widely used as a supplementary source in human diet and medicine. Here we will present a short overview of the most important results of our research, dealing with the fruit fly nutrition. Having in mind the key similarity in some metabolic pathways in *Drosophila* and mammals, our studies could be applicable for understanding the possible effects of various diets, drug-treatments and their potential benefits for humans.

Keywords: Drosophila, nutrition, human health benefits

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