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University of Belgrade
210th Anniversary
OCTOBER 5-6 2018

**PROGRAM
I
ZBORNIK RADOVA**

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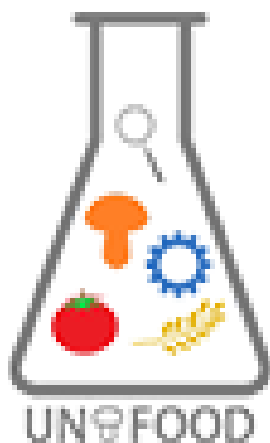
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UNIFood Conference

October 5-6 2018 University of Belgrade **210th Anniversary**



16-18h Svečana sala (Congress Hall)	SEKCIJA (SECTION): FOOD SAFETY AND QUALITY	Moderatori: Prof. Dr Jevrosima Stevanovic, Prof. Dr Dušanka Milojković-Opsenica Moderators: Dr Jevrosima Stevanovic, Prof. Dr Dušanka Milojković-Opsenica
16:00-16:15	Minimalizam u analizi hrane, ali maksimalni priliv informacija Minimalism in food analysis, but maximal information <i>Sekcijsko predavanje (Sectional Lecture)</i>	Gertruda Morlock Rukovodilac odeljenja za Ispitivanje hrane, Justus Liebig Univerzitet, Nemačka Chair of Food Sciences, Justus Liebig University Giessen, Germany
16:15-16:25	3D planarna hromatografija zasnovana na autmotizovanoj head HPTLC-MS Open source 3D printed add-on for automated elution head-based HPTLC-MS	Häbe and Morlock Rukovodilac odeljenja za Ispitivanje hrane, Justus Liebig Univerzitet, Nemačka Chair of Food Sciences, Justus Liebig University Giessen, Germany
16:25-16:35	Optimizacija uslova ekstrakcije fenolnih jedinjenja izolovanih iz cvetova kestena Optimization of the extraction of phenolic compounds from chestnut tree flowers	Prieto (Caleja et al) Fakultet za ispitivanje i tehnologiju hrane, Univerzitet u Vigu, Španija Nutrition and Bromatology Group, Faculty of Food Science and Technology, University of Vigo, Ourense, Spain
16:35-16:45	Hemijska analiza i evaluacija biološkog porekla meda sa Malte Chemical analysis and evaluation of botanical origin of some Maltese honey	Tosti et al. Hemijski fakultet, Univerzitet u Beogradu, Srbija Faculty of Chemistry, University of Belgrade, Serbia
16:45-16:55	Polifenolni i šećerni profil meda od heljde Polyphenol and sugar profile of buckwheat honey	Nešović et al. Institut za opštu i fizičku hemiju, Beograd, Srbija Institute of general and physical chemistry, Belgrade, Serbia



BKH3 / FQS3 U/O

UNIFood Conference

Predavanje i usmene prezentacije u okviru sekcija/Lecture and oral presentation within sections
BEZBEDNOST I KVALITET HRANE / FOOD SAFETY AND QUALITY



Optimization of the extraction of phenolic compounds from chestnut tree flowers

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The chestnut tree fruits represent one of the most economically important agro-food material in the northeastern region of Portugal. Tones of bio-residues are generated annually (branches, leaves, flowers, etc) and used, in the better cases, as natural fertilizers or, in a less environmental friendly cases, burned. Otherwise, scientific reports have been relating the consumption of some synthetic compounds present in foods with undesirable effects on the human health. Such results are pushing the food-industry to look for alternatives that meet consumer needs towards a more natural market. Therefore, the aim of this work was to valorise chestnut flowers' (CF) bio-residues and to develop a profitable natural antioxidant.

Although less exploited for economical purposes, CF have been used since ancient times in the preparation of infusions due to the high concentration of active phenolic compounds (PC) beneficial to the human health. Recent research has shown that CF possesses high abundance of PC that can be used in the preservation of foods due to their capacity to inhibit lipid peroxidation and microbial proliferation. However, to compete with the price-value of synthetic antioxidants typically applied, the PC extracted from CF need to be maximized. Therefore, the conditions of time (t), temperature (T) and solvent (S) that favours the extraction by maceration of PC were optimized by response surface methodology using a 5-level experimental design. The responses used as criteria were the quantification of the fourteen individual PC by HPLC-DAD and the extraction yield of the obtained extract (E). The models developed were successfully fitted to the data and used to determine optimal extraction conditions ($t = 120.0 \pm 12.4$ min, $T = 85.0 \pm 6.7$ °C and $S = 44.5$ % of ethanol) producing 55.37 ± 2.20 mg PC/g E.

The results highlight the potential of valorising CF bio-residues as a productive source of PC for the development of a natural preservative that may be able to compete with synthetic compounds typically applied in the food-industry.

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