

# 12<sup>do</sup> hranom zdravlja with food to health



Book of Abstracts of the 12<sup>th</sup> International  
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WITH FOOD TO HEALTH

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Knjiga sažetaka s 12. međunarodnog  
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HRANOM DO ZDRAVLJA



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- P-28 LC-(HESI)-MS/MS STUDY OF THE POLYPHENOLIC PROFILE OF PEEL OF 'BOBOVAC' - A TRADITIONAL APPLE CULTIVAR FROM CROATIA**  
*Ante Lončarić, Perla Ferrer, Tihomir Kovač, Antun Jozinović, Drago Šubarić, Jurislav Babić, Marija Celeiro, Marta Lores*
- P-29 KARAKTERIZACIJA HLAPLJIVIH SPOJEVA IZ TRAJNE KOBASICE BOSANSKI SUDŽUK**  
**CHARACTERIZATION OF VOLATILE COMPOUNDS FROM DRY FERMENTED SAUSAGE BOSANSKI SUDŽUK**  
*Zvonimir Marijanović, Josipa Pupačić, Mladenka Šarolić, Tomislav Svalina, Marko Šuste*
- P-30 ELECTROCHEMICAL DETECTION OF VITAMIN C IN REAL SAMPLES**  
*Jelena Blažević, Anamarija Stanković, Silvija Šafranko, Stela Jokić, Martina Medvidović-Kosanović*
- P-31 NUTRITIONAL AND AROMATIC CHARACTERIZATION OF CAROB LIQUEUR**  
*Karla Hanousek Čiča, Jasna Mrvčić, Siniša Srećec, Vlatka Petravić Tominac, Damir Stanzer*
- P-32 ANTIBACTERIAL AND ANTIOXIDATIVE EFFECTS OF ORANGE PEEL (*Citrus sinensis* Osbeck cv. Washington navel) EXTRACTS OBTAINED BY ULTRASOUND ASSISTED EXTRACTION**  
*Valentina Pavić, Katarina Batrnek, Maja Molnar, Martina Jakovljević, Stela Jokić*
- P-33 NUTRITIVE AND SENSORIAL QUALITY OF ISTRIAN AND SLAVONIAN DRY-FERMENTED SAUSAGES**  
*Jelka Pleadin, Greta Krešić, Tina Lešić, Ana Vulić, Nina Kudumija, Tanja Bogdanović, Mladenka Malenica Staver, Ivica Kos, Blanka Sinčić Puljić, Nada Vahčić*
- P-34 COMPARISON OF TWO *IN VITRO* DIGESTION METHODS FOR EVALUATION OF BIOACCESSIBILITY OF MINERALS IN FRESH WHEATGRASS JUICE**  
*Andrijana Rebekić, Sanja Grubišić, Marija Kristić, Miroslav Lisjak, Zdenko Lončarić, Katarina Mišković Špoljarić*
- P-35 VOLATILE COMPOUNDS OF ANISE – FLAVOURED SPIRIT „ANIŽETA“**  
*Mladenka Šarolić, Nikolina Bosnić, Emilija Friganović, Žana Delić, Marko Šuste, Tomislav Svalina, Boris Dorbić, Zvonimir Marijanović*
- P-36 THE INFLUENCE OF *ORIGANUM VULGARE* ON THE VOLATILE COMPOUNDS OF BEATEN GOAT CHEESE**  
*Erhan Sulejmani, Hava Miftari, Gafur Xhabir, Xhezair Idrizi, Xhabir Abdullahi*
- P-37 INSTRUMENTAL TECHNIQUES IN VITAMIN C ANALYSIS**  
*Ivana Tomac, Ivana Buljeta, Jozo Ištuk, Lidija Jakobek*

**ANTIBACTERIAL AND ANTIOXIDATIVE EFFECTS OF ORANGE PEEL  
(*Citrus sinensis* Osbeck cv. Washington navel) EXTRACTS OBTAINED BY  
ULTRASOUND ASSISTED EXTRACTION**

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Orange peel has been extensively studied due to its rich phytochemicals content such as triterpenes, glycosides and flavonoids most of which are considered as very strong antioxidants that can have a beneficial effect on human health. Ultrasound-assisted extraction is ecologically acceptable extraction technique for obtaining such polar compounds. The aim of this study was to determine how different conditions of ultrasonic extraction affects total concentration of phenolic compounds, antioxidative and antibacterial activity on Gram-positive and Gram-negative human pathogens. The results showed that the higher solvent-solid ratio results in higher yields of total phenolic compounds, but higher ultrasound extraction temperature leads to an increased total antioxidant activity. The decrease in antibacterial activity was observed with higher ethanol:water ratio. The highest total phenolic content was recorded in the extract obtained at 70 °C, 50 mL/g solvent-solid ratio, ethanol:water ratio 50% v/v and for 30 min. The strongest antibacterial activity was recorded in the extract obtained at 30 °C, 50 mL/g solvent-solid ratio, ethanol:water ratio 50% v/v and for 30 min.

**Keywords:** orange peel, ultrasound-assisted extraction, antioxidative activity, antibacterial activity

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