

12^{do} hranom zdravlja with food to health



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Scientific and Professional Conference
WITH FOOD TO HEALTH

Knjiga sažetaka s 12. međunarodnog
znanstveno-stručnog skupa
HRANOM DO ZDRAVLJA



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**Stela Jokić, Maja Molnar, Ana-Marija Cikoš*, Martina Jakovljević,
Marija Banožić, Silvija Šafranko**

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poster presentation

The mandarin peels are most valuable by-products due to their content of bioactive compounds which have shown health-related properties including antioxidant, anticancer and anti-inflammatory. The extraction of bioactive compounds can be performed in deep eutectic solvents (DESs), which are composed of a hydrogen bond acceptor and hydrogen bond donor components. The advantages of using DESs as extraction media are their non-toxicity, thermal stability, biodegradability and easy preparation.

The peels of *Citrus reticulata* Blanco cultivars of a different variety (*Zorica rana*, *Chahara*, *Okitsu*, *Kuno*) from the Opuzen were extracted in 15 different choline chloride based DESs at 50 °C for 30 min and with the 20% of added water. The extracts were analysed by high performance liquid chromatography (HPLC) to found the most suitable choline chloride based DES for the extraction of the highest amount of hesperidin. Screening showed that the best solvent was choline chloride:acetamide (1:2) and the highest amount of hesperidin was found in variety *Zorica rana*.

The results showed that the amounts of extracted hesperidin were completely different according to the used mandarin variety. Furthermore, the application of deep eutectic solvents for the extraction exhibited strong potential for the production of the extracts rich in bioactive compounds.

Keywords: by-product, mandarin peel, deep eutectic solvents, hesperidin

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