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BOOK OF ABSTRACTS

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EKSTRAKCIJA AROMATIČNIH KOMPONENTI IZ KORE MANDARINE *Citrus unshiu* SUPERKRITIČNIM CO_2

SUPERCRITICAL CO_2 EXTRACTION OF AROMATIC VOLATILES FROM MANDARIN PEEL *Citrus unshiu*

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Citrus peel is considered as a source rich in volatile compounds and has been extensively studied for aromatic profile, mainly contributed by the presence of terpene hydrocarbons, esters, ketones, aldehydes, and alcohols. Supercritical CO_2 (SC-CO_2) extraction technique showed great potential in obtaining nonpolar and volatile components, being also promising green alternative to conventional methods.
In this study, mandarin peel *Citrus unshiu* has been extracted at temperature of 40 °C and at two different pressures (100 and 300 bar). The extracts were analysed in detail by gas chromatography/mass spectrometry (GC/MS), and results of quantification analysis were expressed as a percentage in total quantity (%). The obtained results indicated the predominance of limonone (13.16 – 30.65 %) in SC-CO_2 fraction, followed by α-farnesene (5.72 – 10.63 %), germacrene (4.11 – 6.66 %), linalool (1.85 – 2.18%), and α-terpineol (1.31 – 2.10 %). The content of volatile compounds, mainly including terpene and aldehydes, is commonly used as a commercial index of quality. Therefore, it could be concluded that SC-CO_2 extraction technique is applicable to food by-products processing, such as mandarin peel as it exhibited a strong potential for the industrial development in the production of the extracts rich in bioactive and aromatic compounds.

Keywords: citrus peel, by-products, SC-CO_2, volatile compounds

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