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SUPERCRITICAL CO₂ EXTRACTION OF VOLATILE COMPOUNDS FROM MANDARIN PEELS

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poster presentation

During the industrial processing of mandarin, large amounts of wastes, including peels, are produced. Since it was shown that the peels contain higher concentration of bioactive compounds compared to pulps and thus have more potential for being used as source of bioactive compounds. Mandarin peels, due to its compounds, have been found to have health-related properties including antioxidant, anticancer and anti-inflammatory.

The peels of *Citrus reticulata* Blanco cultivars of different varieties (*Zorica rana*, *Chahara*, *Okitsu*, *Kuno*) from the Opuzen were extracted by supercritical CO₂ (SC-CO₂) at extraction temperature of 40°C and at two different pressures (100 and 300 bars). The extracts were analysed in detail by gas chromatography/mass spectrometry (GC/MS). The limonene predominance was found in samples from varieties *Zorica rana*, *Okitsu* and *Kuno*, followed by eremophylene in varieties *Zorica rana*, *Chahara* and *Okitsu*, and γ -terpinene in variety *Kuno*.

The results showed that volatile compositions were completely different among investigated mandarin varieties. Furthermore, SC-CO₂ extraction applied to food by-products such as mandarin peel exhibited a strong potential for the industrial development in the production of the extracts rich in bioactive compounds.

Keywords: mandarin peel, by-product, supercritical CO₂ extraction, GC-MS

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