Analytical Investigation of Murcott (Honey) Tangerine Peel Oil

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Abstract

Peel oils of the variety Murcott (Honey) tangerine were investigated analytically. The comparison of commercial Brazilian Murcott oils with other available mandarin oil varieties, as well as the analytical distinction to orange oils, constituted the main emphasis of the present work.

GC analysis permitted the identification of 88 components in the volatile range. As in all citrus oils, limonene was the main constituent. Components, which are characteristic for many mandarin oils, such as gamma-terpinene, N-methyl-methylantranilate or thymol, did not occur in the Murcott variety.

Both, the volatile composition of Murcott oils, as well as the enantiomeric distribution of alpha-pinene, limonene and linalool pointed to a close relationship to orange, whereas chiral analysis of citronellal permitted the analytical distinction to orange. On the other hand, the enantiomeric purity of (+)-alpha-pinene served as distinctive feature to other mandarin varieties.

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Murcott oils were characterized by a mandarin-typical UV pattern of the non-volatile constituents when subjected to HPLC separation. Six polymethoxylated flavones were identified, quantitatively tangeretin constituted the most significant representative of this compound class.

In sensorial terms, Murcott tangerine peel oil is described as aldehydic, flowery and resembling orange-tangerine.