

Fatty acid composition and antioxidant activity of two seed oils from different cultivars of Cantaloupe melons extracted by supercritical fluid extraction

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Abstract

The effect of supercritical fluid extraction (SFE) fractionation of three oil fractions (1st, 2nd, 3rd fraction) on fatty acid composition and antioxidant activity of oils from two species of cantaloupe were investigated. Rock melon oil (RMO) and Golden Langkawi oil (GLO) were

extracted using SFE and the major fatty acids for both species were linoleic, oleic, palmitic, and stearic acid. The SFA decreased from 15.78 to 14.14% in RMO 1st fraction, and MUFA decreased from 18.30 to 16.56% in RMO 2nd fraction, while PUFA increased from 65.9 to 69.30% in RMO 3rd fraction. On the other hand SFA decreased from 16.35 to 13.91% in GLO 1st fraction, and MUFA decreased from 17.50 to 15.57% in GLO 2nd fraction, while PUFA increased from 66.15 to 70.52% in GLO 3rd fraction. The different fractions of the two oils showed high antioxidant activity on reducing the oxidation of β -carotene in beta-carotene bleaching assay (BCB) and quenching of 1,1-diphenyl-2-picrylhydrazyl (DPPH).

Key words: Antioxidant activity, cantaloupe, 1,1-diphenyl-2-picrylhydrazyl (DPPH), beta-carotene bleaching assay (BCB), supercritical fluid extraction (SFE), fatty acid.