

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

ABSTRACT

The effect of supercritical fluid extraction (SFE) fractionation of three oil fractions (1st, 2nd, 3rd fraction) on the fatty acid composition and antioxidant activity of oils from two cultivars of cantaloupe were investigated. Rock melon oil (RMO) and Golden Langkawi oil (GLO) were extracted using SFE and the major fatty acids for both cultivars 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 in reducing the oxidation of pi-carotene in beta-carotene bleaching assay (BCB) and the quenching of 1,1-diphenyl-2-picrylhydrazyl (DPPH).

Keyword: Antioxidant activity; 1,1-diphenyl-2-picrylhydrazyl; Beta-carotene bleaching assay; Cantaloupe; Fatty acid; Supercritical fluid extraction.