

Abstract

The Study of Apricot Kernel Oil Resistance to Oxidation [†]

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Abstract: Apricot kernels, which are a by-product in food processing, still contain 40 to 55% of oil rich in nutrients and bioactive substances, so they can be successfully used in the production of cooking oils and in medicine. The aim of the study was to evaluate the resistance to oxidation of two commercial cold pressed oils from apricot kernel: M1 and M2. The oxidative stability of tested oils was measured by pressure differential scanning calorimetry (PDSC) under isothermal conditions at five different temperatures: 100, 110, 120, 130, 140 °C and an oxygen pressure of 1350–1400 kPa. The acid value and the fatty acid composition were also determined in the analyzed oils. Apricot kernel oils contained mainly unsaturated fatty acids in the amount of 91.89 and 88.92%, of which oleic acid (68.33 and 45.81%) and linoleic acid (22.07 and 42.01%) were detected in the highest amount. Saturated fatty acids were mainly represented by palmitic and stearic acids. As expected, the induction time of the tested oils decreased with increase in temperature. The M2 apricot kernel oil with the highest content of polyunsaturated fatty acid was characterized by lower induction time in each temperature range (from 187.20 min. in 100 °C to 6.35 min. in 140 °C) compared to M1 oil, for which induction times ranged from over 700 min. at 100 °C to 31.15 min. at 140 °C. Vegetable oils, due to the high content of unsaturated fatty acids, are less oxidative stable, however, during cold pressing, natural antioxidants are retained, which increases their resistance to oxidation.

Keywords: apricot kernel oil; oxidative stability; PDSC

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