A Research on the Oxidative Stability of Edible Vegetable Oils

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Abstract

Oxidative stabilities of selected vegetable oils, containing different amounts of monoenoic, dienoic or trienoic fatty acids, which are grouped under different categories in term of fatty acid profile were researched. Refined sunflower oil, refined soybean oil and riviera type olive oil were placed in beakers and stored in an oven at constant temperature (100 ^{0}C) to accelerate oxidation of the oil samples. Peroxide value, free fatty acids, refractive index value and iodine value of the samples kept at 100°C were determined on 0, 16th., 30th and 50th days of the storage. Data obtained from these analyses were evaluated to determine the oxidative stabilities of the samples. In addition to this, statistical interactions among oxidative stability and free fatty acid amount, refractive index value and iodine value of the oils were determined. Soybean oil was the highest oxidative stability, followed by olive oil and sunflower oil. Significant differences were found among the oxidative stabilities of the oil samples ($p<0.001$).

Key words: Heated oils, chemical tests, oxidative stability**,** statistical interactions