

Stability of Different Kinds of Vegetable Oils during Microwave Heating

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Many components naturally present in vegetable oils have been shown to have beneficial properties. When vegetable oils are heated at high temperatures, it leads to the changes in the fatty acid compositions. It was found that the rate of quality deterioration, such as oxidation, depends on the polyunsaturated fatty acid content. Many studies have been conducted to investigate the nutritional properties of food treated in a microwave oven, specifically in vegetable oils and fatty foods.

The aim of this study was compare stability of different kinds of vegetable oils under conventional and microwave heating. The peroxide value was taken as a measure for the degree of oxidation during the microwave and conventional heating of oil samples. It was observed that the peroxide value of oils increased gradually during the increasing heating time till they reached the highest values. Differences between fatty acid composition, especially polyenoic acid were not significant during conventional and microwave heating. The content of polymers increased with increasing time of heating. The content of polymers was after 30 minutes of microwave heating ranged from 7.7 to 11.6 % and after 30 minutes of conventional heating in the range 7.1 – 10.5 %. Soybean and sunflower oil showed a lower stability than the other analyzed samples.