

Utilization of Natural Antioxidants for Improving Physicochemical Changes of Sunflower Oil During Heating Processes

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Abstract:

During heating the oil is subjected to high temperature for long periods of time which causes severe damage to the oil. The aim of this work is to monitor the physicochemical changes and quality of sunflower oil during heating process with some industry wastes containing natural antioxidants like orange and lemon peels to improve its stability.

Sunflower oil was heated at 160° C for 60 hours (6 hours daily for ten days) with and without orange and lemon peels. Samples were collected after 30 and 60 hours of heating and evaluated for their chemical and physical properties (peroxide value, acid value, iodine value, carbonyl value, anisidine value, diene value, oxidized fatty acids%, carotene content, viscosity, colour index and lovibond colour). Fatty acids composition of the samples were also determined.

It was found that the resistance of the oil against oxidation was improved with heating in the presence of orange or lemon peels. Results showed that orange peels have antioxidant activity higher than lemon peels.