

Fast Antiradical Test for Monitoring Deep-fried Oils

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The main goal of the present work was to compare and correlate the results of physicochemical parameters and antiradical performance of vegetable oils during deep frying which will be an initial indicator for applying antiradical test for monitoring deep-frying oils. Vegetable oils and oil blends were evaluated during intermittent frying of French fries on two consecutive days for 16 h with oil replenishing after 8 h. Changes in fatty acid profile and some physicochemical parameters (peroxide value, colour index, viscosity, total polar compounds and UV-absorbance at 232 and 270 nm) were used to evaluate the alteration during frying. A quick spectrophotometric method was developed to assess deep-frying oil quality. In the 2,2-diphenyl-1-picrylhydrazyl (**DPPH**) method, the neutralization of the stable radical DPPH by antioxidants present in the oil during frying was measured. Radical scavenging activity (**RSA**) of vegetable oils was recorded during frying. It was evident from the results that a proportional correlation and positive relationship was between levels of fatty acids and physicochemical characteristics of vegetable oils and their RSA. The results obtained allow us to suggest that antiradical measurement could be used to quantify the oxidative and hydrolytic deterioration of vegetable oils upon frying.

Literature:

Ramadan M. F., Amer M. M. A. and Sulieman A. E. (2006) Correlation Between Physicochemical Analysis and Radical Scavenging Activity of Vegetable Oil Blends as Affected by Frying of French Fries. *European Journal of Lipid Science and Technology* 108: 670-678.

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