

# A Study on the Stability of Re-used Deep Frying Cooking Oil Upon Storage

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2006

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## ABSTRACT

This study was to evaluate the stability of the re-used cooking oil (extra virgin olive oil and canola oil) at constant temperature, 180°C for 30 minutes by direct heat at different intervals over 14 days. Stability of two coking oils (olive and canola oil) was evaluated after heat treatment at 180°C (deep frying temperature). The oils were stored for two weeks and were reheated for 30 minutes on day 1, 3, 5, and 7. The stability of oils was determined by chemical tests, Peroxide value (PV) and (IV) test content of fatty acid was determined using gas chromatograph-flame ionization detector (GC-FID). Results showed that, PV for both oils increase significantly ( $P < 0.05$ ) and IV shows no significant difference throughout the storage period. In olive oil sample, palmitic acid incase significantly ( $P < 0.05$ ) while linolenic decrease significantly ( $P < 0.05$ ). No significant changes ( $P > 0.05$ ) of all fatty acids in term of percentage in canola oil throughout the storage period. When the rates of change of the various parameters in the oils were compared for both oils, significant differences ( $P < 0.05$ ) were noted for PV and percentage of palmitic acid of total fatty acids only. Both canola and olive oil are stable under this heat treatment and storage duration but olive oil sows higher stability to lipid oxidation.