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## Statistical Analysis Investigation on Vegetable Oils Stability during Deep Frying using Selected Quality Parameters

(Conference Paper) (Open Access)

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### Abstract

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The frying process is complicated because of a large number of parameters involved and the interactions between them. High stability liquid oils are in great demand. The best way to decide on the fats and oils suitability for frying is to study their natural stability to oxidation. In this study, consecutive deep-fat frying was done by using potato chips in palm oil, cottonseed oil and groundnut oil at 170 °C. All oils used were refined, bleached and deodorised from good quality authentic crude oils. The study was used to investigate the influence of frying time on oil quality by measuring the concentration of tocopherol content (TC), iodine value (IV), peroxide value (PV), free fatty acids (FFA) and polymer content (PC). Changes in these parameters were determined on the oil samples taken periodically during frying. A MANOVA statistical model was used for the investigations of oil quality parameters while used continuously in frying potato chips. The analysis which was implemented using XLSTAT is showing that the frying time has a significant impact on the compositions of the frying oil. A significant increase in PV, FFA and PC was observed during frying while a decrease in the concentration of TC and IV values was observed. The result concluded that refined, bleached deodorised palm oil is more stable during deep-fat frying compared to cottonseed oil followed by groundnut oil. © Published under licence by IOP Publishing Ltd.

### SciVal Topic Prominence

Topic: Adulterated Products | Extra-Virgin Olive Oil | Oils and Fats

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### Chemistry database information

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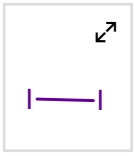
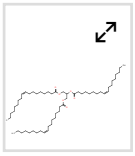

### Author keywords

Deep frying | IV | MANOVA | Polymer content | PV | Tocopherols | Vegetable oils | XLSTAT

### Indexed keywords

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