

Comparison of the Frying Quality Characteristics of French Fries prepared in Palm Olein and Refined Olive Oil

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The objective of this study was to compare two oils, palm olein and refined olive oil for their suitability in deep frying potatoes. Changes of chemical characterizations of the oil residues extracted from French fries were assayed for five consecutive batches fried at 1-hour intervals. The levels of free fatty acids, total polar compounds and phytosterol oxidation products were evaluated in fresh oils and French fries fried in both oils. The level of free fatty acids in fresh palm olein increased from 0.04 to 0.13% in final products. These figures for refined olive oil were 0.06–0.11%. The level of total polar compounds increased from 9.8 in fresh palm olein to 13.8% in final batches of French fries. The corresponding figures for refined olive oil were 4.6–7.3%. The total amount of phytosterol oxidation products in fresh refined olive oil was almost double that in fresh palm olein, and these differences remained rather constant in these two oils during frying. The total amount of phytosterol oxidation products in fresh palm olein increased from 1.9 to 5.3 $\mu\text{g/g}$ oil in final products. These figures were 5.1 to 9.6 $\mu\text{g/g}$ oil for refined olive oil. This study showed refined olive oil to be better than palm olein for deep frying of French fries in terms of the parameters free fatty acids and total polar compounds.