Effect of saturated/unsaturated fatty acid ratio on physicochemical properties of palm olein-olive oil blend.

ABSTRACT

Although blending polyunsaturated oil with more saturated or monounsaturated oils has been studied extensively, there is no similar information regarding the partial replacement of palm olein with olive oil (OO). Therefore the main objective of this study was to investigate the effects of OO partial replacement (0, 25, 50, 75, 90 and 100% w/w) on the chemical stability of palm olein oil (POO). The physicochemical properties of oil samples namely iodine value, peroxide value (PV), anisidine value, TOTOX value (total oxidation value, TV), free fatty acid (FFA), cloud point, color and viscosity were considered as response variables. Significant differences among the oil blend properties were determined at the significance level of $P < 0.05$. Apart from FFA, all the response variables were significantly influenced by type and concentration of oils. The oil blend containing 10% POO and 90% OO showed the highest TV (6.10); whereas the blend containing 90% POO and 10% OO exhibited the least TV (2.41). This study indicated that the chemical stability of oil blend significantly ($P < 0.05$) increased with increasing the proportion of polyunsaturated/monounsaturated fatty acid.

Keyword: Palm olein; Olive oil; Blending; Physicochemical properties; Polyunsaturated fatty acids; Monounsaturated fatty acids.