Influence of Olive Oil Partial Replacement on Frying Performance of Palm Olein

Mahsa Naghshineh1, Abdul Azis Ariffin*1 Hasanah Mohd. Ghazali2 , Hamed Mirhosseini1, Ainie Kuntom3 and Abdulkarim S. Mohammad2

1Department of Food Technology, 2Department of Food Science, Faculty of Food Science and Technology, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia

3Malaysian Palm Oil Board, Bandar Baru Bangi, 43000 Kajang, Selangor, Malaysia

The influence of olive oil partial replacement (25 and 50% w/w) on frying performance of palm olein oil (POO) was investigated during 5 consecutive days frying. The frying performance of POO oil was significantly influenced by the olive oil partial replacement. This replacement led to increase the proportion of polyunsaturated/monounsaturated fatty acid, thereby significantly ($p < 0.05$) decreasing the chemical stability. The highest change in anisidine value (AV), peroxide value (PV) and totox value (TV) was shown by control; while the replacement of 50% (w/w) palm olein with 50% (w/w) olive oil exhibited the least changes in AV, PV and TV during frying process. The oil blend containing higher olive oil content provided lower total polar content (TPC) than the one containing higher POO content. This study offers that the chemical stability of oil to the oxidation or rancidity also depends on the proportion of mono to polyunsaturated fatty acids.

*Corresponding author. Tel.: +603-8946 8354; fax: +603-89423552.

E-mail address: abdulazis@putra.upm.edu.my