Fatty acid ratios and their relative amounts as indicators of oil stability and extent of oil deterioration during frying.

ABSTRACT

Palm olein (PO), canola (CLO), soybean (SBO) and Moringa oleifera seed oils (MoO) were used to fry potato chips for 6 h a day for 5 days and extent of deterioration determined. FA ratios C 18:1/ C 18:2 + C 18:3 and amounts of C 18:1 + C 16:0 were compared to changes in total polar compounds. TPC in MoO (20.78%) and PO (21.23%) were significantly lower than those in CLO (28.73%) and SBO (31.82%). There was a decrease in the amounts of C 18:2 from day 0 to 5 in PO (10.80 to 8.37%), CLO (22.76 to 19.92%) and SBO (53.00 to 51.57%) and a decrease in C 18:3 in CLO (6.77 to 4.55%), respectively, and an increase in C 16:0; MoO (6.10 to 9.60%) and PO (37.70 to 41.99) and a decrease in C 18:1; (74.40 to 73.03%) in MoO, respectively. There was a negative correlation \( r = -0.9919 \) between C 18:1/ C 18:2 + C 18:3 and TPC produced in PO, CLO and SBO.

Keyword: Fatty acid ratios; Oil stability and deterioration; Deep fat frying.