

### **Comparison of the Frying Stability of Standard Palm Olein and Special Quality Palm Olein**

Azmil Haizam Ahmad Tarmizi and Razali Ismail. *J Am Oil Chem Soc* 2008;85(3):245-251.

**Abstract** The main goal of this work was to investigate the stability of standard palm olein (SPOo) and special quality palm olein (SQPOo) under continuous frying conditions. The rate of free fatty acid (FFA) formation was slightly higher for SPOo than SQPOo during 56 h of frying. An equilibrium state was reached at around 40 h for SPOo and 32 h for SQPOo, whereby FFA varied within a narrow range of 0.30–0.32 and 0.22–0.25%, respectively. Smoke point of SPOo and SQPOo progressively dropped from 212 to 184 °C and from 227 to 191 °C. Tocols of SPOo and SQPOo declined from 550 to 273 mg kg<sup>-1</sup> and from 720 to 447 mg kg<sup>-1</sup> after 56 h of frying, respectively. Oxidative stability of both oils decreased after the successive frying. Induction time of SPOo dropped from 22.3 to 14.9 h while SQPOo decreased from 25.5 to 18.3 h. Polar and polymer compounds increased as frying progressed. The SPOo had higher levels of polar compounds, averaging 11.8%, compared to the 10.2% in SQPOo. However, SPOo had lower levels of polymer compounds compared to SQPOo, averaging 2.1 and 2.5%, respectively. Hence, this work confirms that frying performance using SPOo was comparable to SQPOo for use in industrial production of snack foods (potato chips).

**Keywords:** Stability - Standard palm olein -Special quality palm olein - Continuous frying conditions.

### **Composition, stability and acceptability of different vegetable oils used for frying peanuts.**

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The purpose of this work was to determine the chemical stability of vegetable oils in the frying process and the consumer acceptance of fried-salted peanuts prepared in different vegetable oils. Fatty acids composition was determined in sunflower, corn, soybean, peanut and olive oils. A chemical study (free fatty acid and *p*-anisidine values) of these oils at frying temperature (170 °C) was developed during 96 h. Consumer test of fresh products was performed on fried-salted peanuts prepared in the different oils. Peanut oil and virgin olive oil presented oleic acid as predominant fatty acid (44.8% and 64.2%, respectively), making it more resistant to lipid oxidation at frying temperature than the other refined vegetable oils (sunflower, corn and soybean oils). Virgin olive and peanut oils showed less increment of free fatty acids and *p*-anisidine value than the other oils along the heating essay. In addition, fried-salted peanuts prepared with refined peanut oil showed higher consumer acceptance than those prepared with other vegetable oils such as sunflower, corn, soybean and olive oils. Peanut oil could be used to fry peanuts obtaining products with higher consumer acceptance and shelf-life, thus preventing loss of their sensory and nutritional quality.