

The Production of an Experimental Table Margarine Enriched with Conjugated Linoleic Acid (CLA): Physical Properties. Sayed Amir Hossein Goli et al. *J Am Oil Chem Soc* 2009;86(5):453-458.

Abstract: Even though conjugated linoleic acid (CLA) is known to have some beneficial effects on the human body, its consumption has decreased over the past 20 years due to the replacement of animal fats by vegetable oils. In this study, using the structured lipid (SL) containing CLA, an experimental table margarine enriched with CLA was produced and stored for 3 months at two temperatures prior to performing the relevant analyses. The GC results showed that the margarine fat had 10.6% CLA. The solid fat content was the highest in week 0 in all samples, which then decreased during storage but the hardness increased. An increment in dropping point was also observed in the samples. In week 0, all the samples had the β' crystal as the predominant crystal form but a crystal transformation from β' to β was observed during storage. **Keywords** Conjugated linoleic acid (CLA) - Table margarine - Physical properties.

Current advances in sunflower oil and its applications. Rafael Garcés et al. *Lipid Technol* 2009;21(4):79-82.

Abstract: The fatty acid and triacylglycerol composition of a vegetable oil determine its physical, chemical and nutritional properties. The applications of a specific oil depend mainly on its fatty acid composition and the way in which fatty acids are arranged in the glycerol backbone. Minor components, e. g. tocopherols, also modify oil properties such as thermo-oxidative resistance. Sunflower seed commodity oils predominantly contain linoleic and oleic fatty acids with lower content of palmitic and stearic acids. High-oleic sunflower oil, which can be considered as a commodity oil, has oleic acid up to around 90%. Additionally, new sunflower varieties with different fatty acids and tocopherols compositions have been selected. Due to these modifications sunflower oils possess new properties and are better adapted for direct home consumption, for the food industry, and for non-food applications such as biolubricants and biodiesel production.

Effect of low-trans margarine on physicochemical and sensory properties of puff pastry. Dragana Soronja Simovic et al. *Int J Food Sci Technol* 2009;44(6):1235-1244.

Abstract: The influence of the low-trans (<1% of total fatty acids) puff pastry margarine and the rest period between laminating on dough physical characteristics and puff pastry quality was investigated. Experiment was planned according to factorial plan 32 with independent variables: quantity of puff pastry margarine (35–55% based on flour, variation interval 10) and rest period (15–45 min, variation interval 15). The experiment involved two margarine samples (MLT1 and MLT2) of similar fat phase composition, but whose physical properties were, statistically speaking, significantly different. The results show that the pastry containing 35% of margarine MLT1 and allowing the rest period of 30 and 45 min has a lift of above 4.0, it is of minimal firmness and has a high specific volume (3.5 cm³ g⁻¹). Having used puff pastry margarine MLT2, the highest quality of dough and pastry was achieved in the sample containing 55% of margarine and with the maximum rest period of 45 min. The sample mentioned showed an excellent lift of 5.3 and had a specific volume of 4.0 cm³ g⁻¹, but it as well exhibited the maximal firmness of pastry. The application of puff pastry margarine MLT1 can result in a satisfactory quality of pastry, but it can also cause a reduction in the fat content by 7.5% and in the content of trans fatty acids by two times, while the energy value is reduced by 12% when compared with the pastry containing puff pastry margarine MLT2. **Keywords:** Low-trans • physicochemical properties • puff pastry • sensory evaluation • trans fatty acids.

Effect of the Presence and Absence of Potatoes under Repeated Frying Conditions on the Composition of Palm Oil. Eleni P. Kalogianni et al. *J Am Oil Chem Soc* 2009;86(6):561-571.

Abstract: The effect of repeated deep frying of potatoes versus repeated heating/quenching on the chemical profile of palm oil was investigated. The novelty of the work is that the frying and heating/quenching experiments were conducted under similar time-temperature profiles. The effects of the frying load (potato-to-oil ratio: 1/7 and 1/35 kgpotatoes/loil) and of the time-temperature profile were examined. Whole palm oil and its polar fraction were analyzed using high pressure size

exclusion chromatography. Both repeated frying and repeated heating/quenching generated polar and polymerization products in palm oil. Interestingly, no hydrolysis or other decomposition products were generated under any of the examined conditions. The presence of potatoes during frying in palm oil increased the concentration of polymerization products and polar compounds compared to oils without potatoes significantly. The effects of frying load on oil quality depended on frying time. No significant effect of frying load was observed up to frying times of 13 h (or 10 frying batches). However, frying oil quality was affected by frying load once frying times exceeded 24 h (or 20 batches).

Keywords: Frying - Heating - Palm oil - French fries - HPSEC - Frying load - Temperature – Polymerization.