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Effect of frying on chemical quality of edible oils

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Edible oils are widely used throughout the world. Deep-fat frying is the most oldest and popular food preparation method around the globe. The study is undertaken to observe deep-fat frying phenomenon performed at high temperatures under atmospheric pressure. Deep frying results in deterioration of physical, chemical, nutritional and sensory properties of oil, which ultimately affects our health. It also results in the production of volatile products such as aldehydes and non-volatile fraction which remains in the frying medium. Some of these remaining products have been implicated in producing adverse health effects. Highly oxidized oils may also produce poly aromatic hydrocarbons, which have carcinogenic effect. This work was intended to evaluate the effect of frying on chemical properties of edible vegetable oils. Sunflower oil, olive oil and canola oil were used to fry French fries. Acid value, iodine value, peroxide value, saponification value and total polar compounds were measured by the standard ISO methods and traditional methods of determining these parameters. Acid values of all oils used were determined, that ranged between 0.3 and 28 (mg of KOH/g) but least value was of canola oil i.e., 0.561. Similarly, least iodine value is of fresh olive oil i.e., 75.94 and the highest value was obtained in multiple times used sunflower oil. Peroxide value of canola oil was least i.e., 4 (meqO2/kg) and the highest value was multiple times used canola oil. The results showed that all these parameters in all the oil types increased linearly with frying time. The influence of oil type on the content of total polar compounds, peroxide and acid value in used oil was significant, but the effect of food type on these parameters was not observed.

Biography

Nayab Batool Rizvi has her expertise in Clinical Biochemistry. Her main area of interest is Biochemistry and Food and Nutrition. She has done a lot of work on antioxidants and currently working as an Assistant Professor in the Institute of Chemistry (Biochemistry Section) University of the Punjab, Lahore, Pakistan. She has supervised more than 10 graduate and post-graduate students.

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