Fatty Acid Composition of Vegetable Oils Available in Iranian Markets
Babak Ghiassi Tarzi, M.Ghavami,E.Hosseini, Food Science and Technology, Science and Research Campus, Islamic Azad University, Tehran,Iran.
babakghiassi@hotmail.com

Vegetable oils, the ideal cooking medium of the day, are beneficial and more popular due to their cholesterol lowering effect. In contrast to the animal fats which are predominantly saturated and hence do not react readily with other chemicals especially oxygen, unsaturated vegetable oils are more reactive. Exposure to air, light, trace metals and moisture enhances their chemical reactivity. The oxidation is influenced by antioxidants and the fatty acid composition of the oils. Therefore selecting a right vegetable oil in order to use in specific conditions such as cooking, frying and salad dressing is important and need the understanding of the fatty acids and their composition. In this article the fatty acid compositions of 18 vegetable oils from the market including the frying oils, sunflower, grapeseed, olive, soyabean, rapeseed, corn and sesame oils have been determined. Gas chromatography (GC) was used for qualitative and quantitative determination of methyl esters of palmitic, stearic, oleic, linoleic, linolenic acids. The resulting fatty acid composition might help us to employ the more suitable oil for specific usage in the kitchen or industry. The fatty acid profiles of grapeseed, corn, soyabean and sunflower seed oils indicated Linoleic acid as the predominant fatty acid present. Soyabean oil samples had a high content of Linolenic acid (6.8-8.5%) which might cause flavour reversion. GC peaks demonstrates that Canola oil has the lowest level of saturated acids among the oil samples. Various frying oils which were examined show different fatty acid content due to their formulation; obviously the ones with lower unsaturated fatty acid content will have more stability during the frying process. Olive oil samples rich in Oleic acid had the highest level of oleic acid compared to other vegetable oils.

Key words:
Edible Vegetable Oil, Frying Oil, Sunflower Oil, Grapeseed Oil, Olive Oil, Soybean Oil, Canola Oil, Corn Oil, Sesame Oil, Gas chromatography (GC).