

**COMPARATIVE CHEMICAL STUDY ON NATURAL BUTTER
FATS AND SOME HYDROGENATED OILS FROM THE LOCAL
EGYPTIAN MARKET**

BY

Guindi, E.R.; Shabana, M.K.S.; Khalil, A.R.
and Ali*, A.A.

* Biochem. Dept. Fac. of Agric., Moshtohor, Zagazig Univ.

ABSTRACT

The physical and chemical properties of natural milk butter fats from different sources (cow, buffalo, sheep and cow brand) and some commercially hydrogenated oils from the local Egyptian market (primo, heliopolis and crisco) were estimated.

G.L.C. Technique showed that oleic, palmitic, stearic and myristic acids predominated in milk butter fats with different proportions, while the major fatty acid constituents of hydrogenated vegetable oils were oleic, lenoleic and palmitic. Hydrogenated vegetable oils contain high amount of diene conjugated fatty acids and more trans isomer fatty acids contents than in other samples.

High amount of B-sitosterol was pointed out using (GLC) in hydrogenated vegetable oils than the milk butter-fats, while campesterol was only observed in hydrogenated oil samples. Cholesterol was detected in butter-fat samples. The main hydrocarbons of milk butter fats were C₂₉ and C₃₂, while C₂₄ was the main hydrocarbon of hydrogenated vegetable oil samples.

INTRODUCTION

There are an increasing interest towards the biological action and effects of trans and other isomeric unsaturated fatty acids on human health. Many foods contain hydrogenated vegetable oils with variable amounts of trans and conjugated isomers.

Scholfield et al. (1967) stated that the partially hydrogenated fats contain from 16.6 to 29.2% trans fatty acids. Carpenter and Slover (1973) reported that the total trans fatty acids content of margarines varied from 14.0 to 36.0% and most of the trans unsaturation was found in the monoene fraction. The diene fraction was found to contain up to 4.5% trans.