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

BY

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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 constit-
uents 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 C_{29} and C_{32},
while C_{24} 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.