

Thesis Title	Effect of Heat on Fatty Acid Composition of Some Selected Fried Foods
Name	Rattana Prayanoi
Degree	Master of Science (Nutrition)
Thesis Supervisory Committee	Ratana Pakpeankitvatana, DSc. Apinya Assavanig, PhD.
Date of Graduation	1 December B.E. 2539 (1995)

ABSTRACT

The purpose of this study is to evaluate the effect of heat at various temperatures and times on fatty acid composition of thirteen brands of cooking oils available in the market, lard and chicken fat extracted from adipose tissues of pigs and chickens and ten types of selected fried Thai foods which are popular and have high fat content namely fried skin pig, fried skin chicken, fried chicken, fried meat, fried pork, fried white egg, salapao, pathonggo, fried banana, and fried sweet potato were determined for fatty acid composition by gas liquid chromatography. Cooking oils and fats extracted from adipose tissues were heated at 110-130°C, 235-255°C, for 3h and at 300-320°C only for 1h to examine the effect of heat on fatty acid composition of these fats and oils. The results showed that fatty acid composition of different brands of pure vegetable oils were similar to other reports except for α -linolenic acid content which was slightly lower. Different brand of the same vegetable oils contained similar pattern of fatty acids components. Soybean oil and corn oil have the highest amount of linoleic acid and most of the mixed cooking vegetable oil contained high levels of linoleic acid enough to have a hypocholesterolemic effect. Heating the oils for long period of times at lower temperature had little effect on fatty acid composition but higher temperature was found to decrease in the polyenoic fatty acid concentration and increase in saturated-, monounsaturated-, and trans-fatty acid content of the oils. Cooking in oil by the conventional way of preparing the food also increased the trans-fatty acid in the products because it was used over and over.