

# **DETECTION OF MILK AND SOME DAIRY PRODUCTS ADULTERATION**

**By**

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**SUPERVISION SHEET**

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| <b>Title of Thesis:</b> Detection of Milk and Some Dairy Products Adulteration                                    |                              |
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### ABSTRACT

Adulteration may be unintentional or intentional to increase the margin of profit. Sometimes the regulations or the standard specifications of the country help those adulterators by indirect ways which lead to the appearance of adulterated and low nutritional value dairy products in the market protected by these regulations or standard specifications. In this study, a survey has been done on some available cheese especially white soft cheese and processed cheese in the local market of Egypt. Also it was interest to find which method can be used to detect milk fat adulteration with vegetable oils.

Fifty six samples of some white soft cheese (34 samples) and processed cheese (22 sample) were collected from the local market and were analyzed for chemical composition (fat, protein, total solids) and starch presence. The obtained data revealed that most samples recorded very low protein content and high fat percentage. Besides, presence of starch in one brand of white soft cheese and in most samples of processed cheese. Allowance of low protein percentage in white soft and processed cheeses, as well as the high fat percentage and the expense of protein, the use of starch to increase the total solids and also the use of hydrogenated vegetable oil and fats is an inevitable consequence of the loose clauses in the Egyptian standardization specification.

On the other hand samples of standard butters (prepared from milk obtained from the herd of faculty of agriculture Cairo university), butter collected from the local market, vegetable oil and margarine were subjected to different analytical to find out the best methods that could be used to detect milk fat adulteration. Melting profile appearance and Liberman-Bruchared for cholesterol detection gave primary results stating the probability of adulteration. While Reichert-Meissl number gave positive result for detecting adulteration but can't deny its presence. To determine adulteration presence or absence, determination of sterols content has done been along which the determination of fatty acids composition.

Therefore it could be recommended reviewing the Egyptian standard specifications and some clauses should be changed to achieve minimal nutritional and healthy value requested in the dairy products. Also when determining milk fat adulteration we recommend melting profile appearance as a primary step, then determination of Reichart-Meissl number and if there is a probability for adulteration the sterol and fatty acids content should be done.

**Key words:** adulteration, white soft cheese, processed cheese, sterols, fatty acids



## DEDICATION

*I dedicate this work to whom my heartfelt thanks; to my Family, parents, brothers and sisters for all the support they lovely offered along my life and to my wife and son for their patience and help during the period of my post-graduation.*



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