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شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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شبكة المعلومات الجامعية

بعض الوثائق الأصلية تالفة

SOME ASPECTS OF MANUFACTURING AND SOME PROPERTIES OF LOW CALORIE ZABADY

BY

SUSU MOUSAD AHMED EL-ASFORY

B.Sc. Agric. (Dairying) Fac. of Agric., Tanta Univ., Kafr El-Sheikh, 1995

THESIS

Submitted in Partial Fulfillment of the Requirements for the Degree of

MASTR OF SCIENCE

Agriculture (Dairying)

To

Dairy Department
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INTRODUCTION

INTRODUCTION

The process of yoghurt making dates back thousands of years and the acidification of milk by fermentation with yoghurt culture is one of the ancient crafts which was used to preserve milk. However, the popularity of yoghurt has spread from the Balkans and the Middle East to other parts of the world (Tamime et al. 1984) and since 1960s, the per capita consumption of yoghurt has increased significantly in most countries (IDF, 1982, 1992).

It may be of interest to point out that the word " yoghurt " is derived from the Turkish word " jugurt " and in 1980 Tamine and Deeth reported the variety of names by which this product is known in different countries. This includes the traditional name of " zabady " in Egypt and Sudan. However, in recent years consumers are more health conscious than ever before. In North America and Europe as well as some developing countries like Egypt, they have been modifying their eating habits for many health reasons and the guide lines call for avoiding too much fat and cholesterol as part of planning a healthful diet. This has largely involved also reducing the amounts of sugar, salt, cholesterol and certain additives in the diet. Food technologists and the manufactures have responded to such demands and over the past few years, there have been rapid marked growth in perceived healthy foods and drinks including dairy products (Tamime et al. 1994). Such products are marketed under different names such as low-fat, light, sugar-free and/or low calorie. These innovative product developments can be achieved by using one or combinations of the following methods:

(a) replacement of the carbohydrate with intense sweeteners, **(b)** reducing the carbohydrate content using fibers or bulking ingredients (i.e. hydrocolloids such as carrageenan or guar gum), **(c)** lowering the fat content in traditional

products and **(d)** using fat-substitutes to replace fat in food whilst keeping the same functional and organoleptic properties as fats without the calories. The majority of the yoghurts produced in Europe and North America are low-fat products (≤ 1.5% fat). For example, in the UK, the economic retail value of yoghurt, skimmed milk and Cottage cheese has increased significantly from £ 565 m in 1985 to £ 1335 m in 1990 reflecting a growth of 2.4 fold (Tamime et al. 1994). In the USA, the light dairy products market was estimated at $ 23.7 billion in 1991 and cultured dairy products including yoghurt amounted to 7.5% of the total sales (Anon, 1992). In this respect, the low-fat and non-fat yoghurt together captured 80% of the entire yoghurt market share in 1989 (Thompson, 1990).

On the other hand, it is well known that milk and dairy products are appreciated sources of proteins, calcium, vitamins and other nutrients (Rosenthal et al. 1993) but are frequently deficient in iron (Jarrett, 1979). However, the daily dietary requirement of iron is 5-10 mg for adults, 4-10 mg for children and 1.5 mg/kg body weight for infants (Underwood, 1971). Menstruating and pregnant women have considerably higher requirements. Iron supplements of 30-60 mg/day are usually recommended during pregnancy and lactation (Flynn and Power, 1985).

Generally, fortification of yoghurt with iron would help meet this nutritional need. An advantage of using yoghurt and other dairy products as the vehicle for supplementing with iron is the wide consumption of such products in different countries allover the world.

Iron as a component of haem in hameoglobin, cytochromes and other proteins plays an essential role in the transport, storage and utilization of oxygen. It is also a cofactor for a number of enzymes. Dificiency of iron is relatively common in both western and undeveloped countries. Such inadequate