CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Title: Fortification of some dairy products with algae proteins.

By: Aisha Mohamed Metwaly El-Batawy

For: The Degree of Ph.D. in (Dairy Science and Technology).

Dairy industry is facing several problems in supplying consumers with specific functional dairy foods. These problems arose from shortage in milk proteins supply, high price of powdered milks and production of unique dairy products, that meet the need of both consumer and market. Incorporation of algae protein in some dairy products such as cheese fermented milk and ice milk will alter the physic-chemical properties of these products. Also, these treatments will enhance the health benefits of these products. Marin algae has long been used as food and medicine in Asian countries such as Japan, China and Korea. The protein in algae contains all essential amino acids (EAA) which available throughout the year, although seasonal variations in their concentrations are known to occur. Algal protein has many potential applications in new product and fortification and hence offers an exciting alter native protein source for use in various food products. Functional properties like foaming, viscosity and emulsification of this algal protein have the potential to find use in meat, ice cream bakery food, pharmacealicls and baby food formulations. The main objective of this study was to evaluate the possibility of replacing non-fat dry milk (NFDM) with algae protein isolates in the manufacture of ice milk and yoghurt.

This Thesis includes three parts under the following titles:

1. Study the chemical composition and functional properties of algal protein isolates extracted from brown algal.
2. Effect of substitution of non-fat dry milk (NFDM) with algal protein isolate on ice milk chemical composition and quality attributes.
3. Effect of substitution of non-fat dry milk (NFDM) with algal protein isolates on yoghurt chemical composition and quality attributes made from cow's milk.