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**A NEW HORIZON FOR FISH OIL
IN FOOD INDUSTRY : A PROPOSED
APPLICATION IN
DAIRY PRODUCTS**

**A thesis presented in partial fulfilment of the
requirements for the degree of Master of Philosophy
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ABSTRACT

Researchers have shown considerable interest in the beneficial health effects of long-chain polyunsaturated fatty acids present in fish oil, and dietary advantages have been recognised. As a result food companies are keen to develop "health" foods containing refined and deodorised fish oils. This research is an attempt on this line.

Two product ideas are presented here, where it is proposed to incorporate fish oil in processed and spread cheese. The response of potential consumers is gauged through a purpose-designed questionnaire. The responses are discussed and analyzed using the statistical package SPSS.

The statistical analysis aimed at determining the factors that may affect product acceptability and buying trends. The results showed that sex, income and age of respondents added to their awareness of fish oil benefits and are factors that affect both product acceptability and buying trend and frequency with varying significance. The product that incorporates fish oil in processed cheese appears to be more acceptable and has a better potential market. The target groups of potential customers include the very young (< 20 years) and the old (> 40 years). Marketing needs to include strategies to increase the people's awareness of fish oil benefits.

It is recommended that the survey be re-conducted on a larger sample to confirm the results and that further work be carried out to develop a product acceptable to more than one market segment or cultural group.

TO MY PARENTS

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CHAPTER 1

INTRODUCTION

There is a growing body of evidence that fish oil appears to be the elixir of the century. Studies suggest that a requisite dose of fish oil confers protection against certain diseases. Fish oil was shown to have a favourable affect on psoriasis, migraine headache and rheumatoid arthritis, and can help to prevent coronary artery disease.

The development of the medical interest in the beneficial effects of fish oil on diseases has led to a number of food companies showing interest in developing "health" foods that incorporate fish oils. In addition, many people would prefer to obtain the long-chain n-3 fatty acids, which have proven cardio vascular effects, in the food they eat. The need therefore arises for the development of non-fish products that contain fish oil relatively rich in n-3 fatty acid which do not taste fishy.

It is the main purpose of this study to introduce product ideas to satisfy the above need, investigate the acceptability of the new ideas and identify the potential market and target groups.

The product ideas that were investigated involve the incorporation of fish oil in two types of cheese; processed and spread. A comprehensive literature review is carried out into the chemical and nutritional properties of fish oil, its manufacture and processing, and its various applications. Background information on cheese that is relevant to the research is also provided.

The level of acceptability of the product ideas and the potential market are investigated through a questionnaire designed to serve this purpose and distributed in two cities in New Zealand . The results of a statistical analysis of the responses using the SPSS programme are discussed to provide the required answers.