

Development of coconut creamed yoghurt

By

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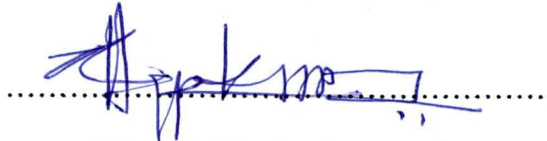
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DECLARATION

The work describe in this thesis was carried out by me under the supervision of Prof. A.Bamunuarachchi , Head, Department of Food Science and Technology, University of Sri Jayewardenepura and Ms.Ruchira Koddithuakku, Assistant Quality Assurance Manager, Coco Lands Ltd, Export Processing Zone , Watupitiwala, Sri Lanka,A report on this had not been presented or accepted in any previous application for a degree .



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We hereby certify that above statement made by the candidate is true and that this thesis is suitable for submission to the university for the purpose of evaluation



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ABSTRACT

Coconut and its products have unique and pleasing flavour components which very acceptable palatability and high nutritive superiority. This high superiority is mainly on account of its fat content and also the pure characteristic of this fat. It has a minimum 34% fat which mean very high energy source. Fat component is consisting of three main fatty acids, namely lauric acid, capritic acid, myristic acid .Coconut fat is easily digestible and readily convertible in to energy without depositing as stored food in the body.

This study was undertaken to determine ability of developing new curd type product using coconut milk. In this process coconut milk defatted up to required fat level. Protein content of the mixture standardized to get satisfactory texture. Therefore in experiment I skim milk powder has incorporated as protein supplement in different ratios and malto dextrin (hydrolyze starch) also incorporated in order to adjust total solid level of the final mixture.

Experiment II was conduct to study the applicability of soya as a protein supplement.

Standardize mixture was heat treated 85 °C to 90 °C for 25 min and cool down to 43° C followed by inoculating *Lactobacillus Bulgaricus* and *Streptococcus Thermophilus* .

Yoghurt incubated 43 °C for 4- 6 hours until product pH reaches up to 4.5 +/- 1. Samples were evaluated organoleptically by group of panelist using five point hedonic scale.

Results were analyzed using Friedman statistical analyze.

Ideal formulation was coconut milk 84.78%, gelatin 0.57%, skim milk powder 7.84%, sugar 6.84% and culture 0.02-0.05%. In experiment II protein supplement 1.98% soya solid with 4.09% skim milk powder combination gave good flavour profile but soya

protein addition changed complete flavour profile of the product

Molto dextrin (hydrolyze starch) incorporation was not recommended due to formation of jell like undesirable polysaccharide layer.

Finish product specification of experiment I fat 3.5%, ash 0.67%, acidity 0.96%, pH-4.43, total solid 22.65%, negative for coliforms and negative for yeast and moulds. Finish product specification for experiment II , fat 2%, ash 0.67%, acidity 0.99%, pH4.40, total solids 23.65%, negative for coliforms and negative for yeast and moulds.

The finish product specifications are within prescribe standard with a storage life of >21 at 6+/_1C.

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CHAPTER ONE

1.0 INTRODUCTION

Coconut production and processing have been the predominant economic activity in rural communities in many tropical regions of South East Asia and the South Pacific. Traditionally, production of coconut oil from copra was the most popular export from coconut industry in the past. Today there are range of products such as coconut milk , coconut milk (reduce fat) , coconut cream, spray dried coconut milk powder, desiccated coconut and coconut milk incorporated beverages like pineapple coconut milk (pinacoloda) , coconut water ready to serve drink, coconut milk drink, coconut and pineapple chutney, simmer source , coconut ice cream, coconut wood apple drink so on.

Generally the majority of coconut protein is recovered and used in the form of coconut fat milk and low fat coconut milk.

Since of late a wide range of innovative diary products have come into the market According to the latest research and development carried out, it is found that coconut based ingredient could be used to substitute dairy ingredients relatively at low cost. Such as in coconut tofu, coconut cheese and coconut yogurt

This study was undertaken to determine extraction of maximum coconut protein from defatted coconut residues and new product was developed using recovered protein & fat with added protein sources such as skim milk powder & soya protein.

In most coconut producing countries, the current capacity for local production of cow's milk is very small and the majority of milk and other diary products are manufactured from imported milk. This imported milk powder and other diary products are expensive and it

drains large sum of foreign exchange reserves. Therefore developing dairy – type products form less expensive alternative sources of indigenous raw materials such as coconut is trimly requirement. Therefore it is a big advantage to Sri Lankan economy mainly in the form of saving foreign exchange.

Therefore the objective of the study was to develop yoghurt suitable for consume either as dessert or snack by extracting goodness of coconut. Study was conducted at laboratory of Coco Lands Ltd, Watupitiwala Export Processing Zone, Sri Lanka.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Coconut Milk

The coconut palm is a versatile plant with a variety of uses. Coconut consists of wet meat or kernel 50%, Water 17% and shell 33% by weight approximately.

The coconut kernel or endosperm of the matured coconut is an important food in all coconut growing countries.

Table 2.1: The chemical composition of fresh coconut meat

composition	Meat	Protein	Fat	Carbohydrate	Fiber	Mineral water	CaO	P2O5
Percentage	36.3	4.5	41.6	13.0	3.6	1.0	0.01	0.24

Source: Sukoncheun (1997)

Table 2.2: Yield and composition of Coconut meat, coconut water and coconut fiber

	Coconut meat	Coconut water	Fiber
Yield (g)	45.5	16.6	11.0
Protein (%)	4.4	0.2	0.1
Fat (%)	32.9	0.2	19.5
Moisture (%)	48.3	95.1	33.4

Source: Sukoncheun (1997)