

**MANUFACTURE OF CABONATED TENDER  
COCONUT WATER & DEVELOPMENT OF A  
PROCESS FOR THE UTILIZATION OF  
COCONUT FLESH.**

**By**

**P.S.A.Silva**

This thesis submitted in partial fulfillment of requirement  
for the degree of

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**Coconut cluster**

**This thesis is dedicated to my parents**

**&**

**Leading teachers**

The work described in this thesis was carried out by me under the supervision of professor A.Bamunuarachchi and a report on this thesis has not been submitted in whole or in part to any University or any other institution for another Degree/diploma.

A handwritten signature in dark ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

.....  
Signature

I certify that the above statement made by the candidate is true and that this thesis is suitable for submission to the University for the purpose of evaluation.



Professor A. Bamunuarachchi.  
Department of food science & technology,  
University of Sri Jayewardenepura,  
Sri Lanka.

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# **Manufacture of carbonated tender Coconut water & Development of a process for the utilization of Coconut flesh**

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## **ABSTRACT**

According to the researches tender coconut water (*Cocos nucifera*) is one of the highest sources of electrolytes known to man. It contains sugar, vitamins, proteins, antioxidants, minerals with more potassium and magnesium. Coconut flesh is sweet and contains less sugar, more protein than popular fruits, less fat having high amount of saturated fat and relatively high in minerals such as iron, phosphorus and zinc.

In this thesis coconut as a source of nutrient and protection of them during processing, coconut water was stabilized by carbonating and the flesh was converted to jam and also developed to a preserved products.

The study clearly showed that tender coconut water and flesh are rich sources of minerals, vitamins, sugar and other necessary nutrients supplements for all ages. Using tender coconut water and its flesh prepared carbonated tender coconut water contained 0.0118 % protean, 21.05 % invert sugar, no fat and 0.0525 % vitamin C. The prepared jam contained 0.9681 % protean, 26.84 % invert sugar, 11.1 % fat and 0.525 % vitamin C and in the preserved flesh 0.9237 % protean, 23.51 % invert sugar, 1.9 % fat and 1.05 % vitamin C.

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## Chapter 1

### 1.1 Introduction.

Coconut is one of the oldest known tropical crops and is referred as the “Tree of Life”. Every part of coconut palm is use for many purposes for many millions of people in the world. It is a primary source of food, water, drink, purifier, fluid re-hydration, isotonic, energy, tonic, fuel, soil rejuvenator from the fiber, animal feed and shelter.

Structurally the coconut consists of an exocarp (husk) which is attached to the endocarp (shell), which in turn is firmly united to hollow kernel (endosperm) on the inside. The cavity of this kernel contains the liquid endosperm (coconut water) which varies in volume & nutrients depending on the maturity of the fruits.

Tender coconut water is a natural product available in all parts of the country and especially in rural areas. It is ready and handy boon to combat the dehydration of patients suffering from severe diarrhea and vomiting and is a cheep substitute to glucose, saline or plasma. It contains not only glucose but also other nutrients such as sugar, low fat, amino acid, vitamins and minerals like phosphorous, sulphur, sodium, iron, potassium, calcium and they are in proportions according to the age of the coconut.

The flesh in a young coconut is thick albuminous endosperm, it is white in colour edible, softer and more like gelatin than a matured coconut and it is sometimes known as coconut jelly. It is sweet and contains less sugar, more protein than popular fruits, less fat which having high amount of saturated fat and relatively high in minerals such as iron, phosphorus and zinc.



As a tropical plant coconut has many medicinal properties also. Tender coconut water has many values compared to its flesh. Few of them are effective in the treatment of kidney and urethral stones, it does not produce heat, and does not destroy red blood cells and is readily accepted by the body, it is excellent for oral re-hydration medium and all natural isotonic for all ages, maintains the human body's natural fluid levels to help maintain proper blood pressure , circulation and kidney functions, digestion and liver functions, relieves stress on pancreas and enzyme systems of the body , inhibits the growth of mycoplasma, Natural diuretic.

This study was conducted to develop a consumer acceptable carbonated tender coconut water, a coconut jam and preserved coconut flesh with having high nutritional, herbal value using coconut, lime and water melon.

## **1.2 Objectives**

- Develop carbonated tender coconut water, coconut jam and preserved flesh using coconut flesh and water melon.
- Develop techniques to improve the shelf - life of above products.
- Introduce high quality carbonated tender coconut water, coconut jam and preserved coconut flesh to a market.