

Coconut Cream

Introduction

Coconut cream is the processed milk extracted from fresh matured coconuts. This is an instant product, which can either be used directly or diluted with water to make various preparations such as curries, sweets, desserts, puddings, etc. It can also be used in the manufacture of bakery products and for flavouring food stuffs. Processed and packed coconut cream has a shelf life of six months and once opened it should be stored in refrigerator for subsequent use. The technology has been developed by the RRL, Thiruvananthapuram under a sponsored project of the Board.

Process

The first step is breaking the dehusked nuts into halves. The split nuts are deshelled to separate the kernel. These two operations usually are done manually. Kernel is washed and then blanched by immersing in hot water at 80°C for 10 minutes. The next step is comminution of kernel into small gratings using a hammer mill. The gratings are subjected to pressing using, continuous screw press to extract the milk. The coconut milk thus obtained is filtered by passing through a vibratory screen. Food additives such as emulsifiers and stabilizers, are to be added to the milk to obtain a stable consistency and texture. For this purpose, permitted emulsifiers and stabilizers are mixed with hot water separately and mixed thoroughly. This is added to the coconut milk and then subjected to emulsification using a mechanical impeller emulsifier. The emulsified milk assumes a creamy consistency. The coconut cream is then pasteurized at 95°C for 10 minutes in a plate heat exchanger. The pasteurized coconut cream is hot filled in cans using a mechanical volumetric filling machine followed by steam exhausting. The cans are seamed using an automatic can seamer. The seamed cans are sterilized in a rotary retort at 15 psi for 20 minutes. The cans are then cooled in running water.

The residue obtained after the extraction of milk is dried in a hot air dryer to 3 per cent moisture level. The residue forms a base for making coconut burfi, coconut cookies, curry and chutney powders. Other by-products like coconut water and coconut shell could be processed into value added products. Vinegar and Nata-de-coco can be manufactured from coconut water. Shell charcoal and shell powder can be manufactured from coconut shells. The utilization of byproducts would improve the economic feasibility of the process.

Product Specification

Appearance	White smooth creamy consistency
Flavour	Coconut
Fat	23%
Protein	4%

Sugars	5%
Others	1%
Water	67%

Project Cost

(10,000 Coconuts / day)	
Land	1 acre (cost variable)
Building - 6000 sq.ft @ Rs.1000 per sq.ft.	Rs.60 lakhs
Plant & machinery (does not include DG set, weigh bridge, effluent treatment equipments and other items not directly connected with process operation)	Rs.75 lakhs
Electrification	Rs.25 lakhs
Preliminary and pre-operative expenses	Rs.15 lakhs
Margin money for working capital	Rs.40 lakhs

Machinery / Equipment

- Hammer mill
- Elevator
- Screw press
- Coconut milk storage tanks
- Vibrating sieving machine
- Coconut residue mixer
- Additive mixing tank
- Emulsifier
- Homogenizer
- Pasteurizer
- Volumetric filling machine
- Exhaust box
- Can seaming machine
- Horizontal rotary retort

- Hot air drier
- Agro waste vertical boiler
- Sterilization tank
- Coconut residue storage bins

Yield of Products / By-products

Raw material	10,000 ripe green coconuts
Coconut cream (main product)	2,500 kg
Coconut cream residue	500 kg