

Coconut Oil - Project Profile

Introduction

Coconut palms are grown widely in the coastal tracts of the country. Copra, the dried kernel is the chief commercial product from coconut, which is mainly used for oil extraction. Copra normally has an oil content varying from 65 to 72 per cent.

Coconut oil is an important cooking medium in Southern parts of the country especially in Kerala State. Besides, the oil has varied industrial applications. It is used in the manufacture of toilet soaps, laundry soaps, surface active agents and detergents, hair tonics, cosmetics, etc. It is used throughout the country as a hair oil as it helps growth of the hair. As a massage oil it has a cooling effect on the body. Owing to these qualities coconut oil has a potential market in the country. Since the price of coconut oil in the international market is very much lower than the domestic price, the quality and attractiveness of consumer packs are important factors to compete in the world market. While the demand for coconut oil for cooking purpose is elastic, its demand as hair oil is inelastic.

For the extraction of oil from copra the common method still prevailing in our country is by using rotary chucks. But the efficient system of extraction of oil is by the use of expellers.

Process

Well dried copra with a moisture content not exceeding 6 per cent is cleaned well from any foreign matter. It is then cut into small chips in a copra cutter. The chips are fed into steam jacketed kettles and cooked mildly at a temperature of 70°C for 30 minutes. After proper cooking, the cooked material is fed into the expeller continuously and pressed twice. The combined oil from the first and the second pressing is collected in a tank provided separately. This oil is filtered by means of a filter press and stored in MS tanks. Bulk packaging is done in tin containers. HDPE containers and polymeric nylon barrier pouches are used for small consumer packings. The quality of copra is related to the quality of coconut oil.

The oil cake obtained as a by-product will find a ready market as a cattle feed and in the manufacture of mixed cattle feeds or as a raw material for the extraction of remaining oil by solvent extraction method.

Product Specification

(IS-542-1968)	
Moisture % wt., Max.	0.25
Colour in 1/4 cell Lovibond Y+5R, not Deeper than	4
Acid value, Max.	2.0
Unsap. matter % by wt., Max.	0.8
Polenske Value, Min.	0.8

Project Cost

(3 tonnes / day capacity)	
Land (cost variable)	50 cents
Building - 3500 sq.ft. @ Rs.1000 per sq.ft.	Rs.35 lakhs
Plant and Machinery (does not include DG set, weigh bridge and other items not directly connected with process operation)	Rs.35lakhs
Electrification	Rs.3 lakhs
Preliminary and preoperative expenses	Rs.2 lakhs
Working capital (Margin Money)	Rs.12 lakhs

Machinery

- Copra Cutter
- Bucket elevator
- Steam jacketed kettle
- Oil expeller

- Screw conveyer
- Crude coconut oil storage tanks
- Filter press
- Micro filter
- Filtered oil storage tanks
- Volumetric filling machine
- Baby boiler
- Wooden storage drums

Yield

Raw material	5 tonnes of copra
Coconut oil	3 tonnes

Salient Features

Sales turnover	Rs.315 lakhs
Net profit	Rs.12 lakhs
Return on investment	28 per cent