

# DESICCATED COCONUT



## 1.0 INTRODUCTION

India is one of the leading producers of coconuts in the world. About 55-60% of the total production of the country is used for various food preparations whereas balance quantity goes for oil extraction. Coconut oil is used as a cooking medium in certain parts of the country and it is also popular hair oil. Coastal areas of Kerala, Tamil Nadu, Karnataka, Orissa, Andhra Pradesh, Goa and Maharashtra grow large quantities of coconut trees and this project can be set up in any of these states. For food preparations, fresh coconuts are used in small quantities but copra and desiccated coconut are very popular with several applications round the year.

## 2.0 PRODUCT

### 2.1 Applications

Desiccated coconut, also known as coconut powder, is in dry form and has many applications. Its shelf life is longer and it is easy to transport. Availability of fresh coconuts is limited to coastal areas only and hence desiccated coconut is popular in all other regions.

### 2.2 Availability of know-how, Quality Standards and Compliances

CFTRI, Mysore, has successfully developed the technological know-how. BIS has specified quality standards vide IS 966:1962. Compliance under PFA Act is mandatory.

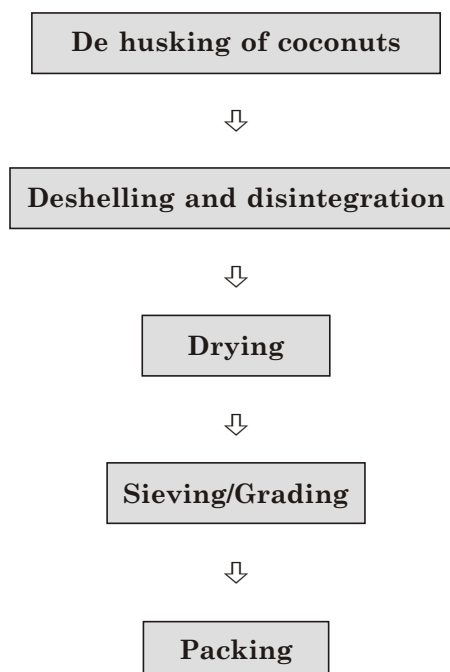
## 3.0 MARKET POTENTIAL

Indians have been using coconuts in food and snack preparations since time immemorial. Fresh coconuts have limited availability as well as shelf life once their shells are removed. Hence, dried coconuts in the form of Copra or coconut powder have become mass consumption items due to their availability round the year across the country, longer shelf life, reduction

in wastage, convenient to transport and freedom to the consumers to buy the required quantity. Desiccated coconut is not used in large quantities in individual households but its main consumers are confectionary and biscuit industry. It is also used in the preparation of sweets, curry, many varieties of chutney, farsan and chikkies and many other food and snack preparations. Thus, restaurants, dhabas, canteens, sweet, farsan and chikki manufacturers, certain food processing units and caterers are bulk and regular consumers.

#### 4.0 MANUFACTURING PROCESS

It is simple and well-established. Fully grown and matured coconuts of around 1 year are stored with husk for about a month to facilitate absorption of water and separation of coconut kernels from shell walls. After de-husking, their shells are removed and brown portion (also known as Tasta) is removed by scrapping it off and in this process around 12-15% of the kernel goes as paring which is further processed to obtain oil, and thus there is a ready market for this by-product. Subsequently, de-shelled coconuts are broken into pieces, washed and disintegrated in powder form. This powder is then dried in tray drier at about 70-80° C and powder is stirred occasionally to ensure uniform drying. On cooling, it is passed through vibratory screen with different mesh sizes to segregate the powder according to mesh size. Finally, it is packed in moisture and oil-proof polythene-lined plywood boxes of 10, 25 or 50 kgs. Retail sales is not much but for that packing of 200 or 400 gms. is advisable. Recovery of desiccated coconut largely depends upon quality of coconuts. But on an average processing of 100 coconuts gives around 12-13 kgs. of coconut powder. By-products like parings and shell can be sold in the market. The process flow chart is as under:



## 5.0 CAPITAL INPUTS

### 5.1 Land and Building

Land measuring about 300 sq.mtrs. with built-up area of 100 sq.mtrs. will be adequate. Storage of coconuts with husk can be undertaken adjacent to the main building under ACC roofing. Land may cost Rs.90,000/- whereas cost of main factory building along with drying area is assumed to be Rs.3.00 lacs.

### 5.2 Machinery

For annual rated capacity of 200 tonnes of desiccated coconut following machines shall be required:

Item	Qty.	Price (Rs.)
Hot air drier with blower and other accessories	1	2,00,000
Disintegrator with accessories and electric motor	1	1,15,000
Vibratory screen with wire mesh and electric motor	1	65,000
Aluminium trays	15	30,000
Weighing scale, bag sealing machine, aluminium vessels, scrapping knives, plastic tubs, laboratory instruments etc.	--	60,000
	<b>Total</b>	<b>4,70,000</b>

### 5.3 Miscellaneous Assets

Other assets like furniture & fixtures, working tables, electrical etc. would need Rs. 60,000/-.

### 5.4 Utilities

Total power requirement shall be 35 HP and per day water requirement would be 1500 ltrs.

### 5.5 Raw and Packing Materials

The only raw material would be fully grown, good quality coconuts. Adequate prior arrangements should be made. Polythene bags, plywood boxes, labels and box strapping shall be the packing materials.

## 6.0 MANPOWER REQUIREMENTS

Particulars	Nos.	Monthly Salary (Rs.)	Total Monthly Salary (Rs.)
Skilled Workers	4	2,500	10,000
Semi-skilled Workers	2	1,750	3,500
Helpers	10	1,250	12,500
Clerk	1	2,000	2,000
Salesman	1	2,500	2,500
		<b>Total</b>	<b>30,500</b>

## 7.0 TENTATIVE IMPLEMENTATION SCHEDULE

Activity	Period (in months)
Application and sanction of loan	2
Site selection and commencement of civil work	2
Completion of civil work and placement of orders for machinery	6
Erection, installation and trial runs:	2

## 8.0 DETAILS OF THE PROPOSED PROJECT

### 8.1 Land and Building

Particulars	Area (Sq.Mtrs)	Cost (Rs.)
Land	300	90,000
Building	100	3,00,000
	<b>Total</b>	<b>4,80,000</b>

### 8.2 Machinery

Total cost of machinery is estimated to be Rs.4.70 lacs as explained earlier.

### 8.3 Miscellaneous Assets

A provision of Rs. 60,000/- is made under this head as stated before.

### 8.4 Preliminary & Pre-operative Expenses

An amount of Rs. 1.00 lac is provided towards pre-production expenses like establishment, registration and administrative expenses, travelling, trial runs, interest during implementation etc.

### 8.5 Working Capital Requirements

At 60% activity level in the first year, the working capital needs would be as under:

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Raw Materials	1½ Month	30%	8.70	6.10	2.60
Stock of Packing Materials	1 Month	30%	0.70	0.50	0.20
Stock of Finished Goods	½ Month	25%	3.55	2.65	0.90
Receivables	½ Month	25%	4.00	3.00	1.00
Working Expenses	1 Month	100%	0.50	--	0.50
		<b>Total</b>	<b>17.45</b>	<b>12.25</b>	<b>5.20</b>

**8.6 Cost of the Project & Means of Financing** (Rs. in lacs)

Item	Amount
Land and Building	3.90
Machinery	4.70
Miscellaneous Assets	0.60
P&P Expenses	1.00
Contingencies @ 10% on Land and Building & Plant & Machinery	0.85
Working Capital Margin	5.20
<b>Total</b>	<b>16.25</b>
<b>Means of Finance</b>	
Promoters' Contribution	4.70
Term Loan from Bank/FI	11.55
<b>Total</b>	<b>16.25</b>
Debt Equity Ratio	2.45 : 1
Promoters' Contribution	29%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

**9.0 PROFITABILITY CALCULATIONS****9.1 Production Capacity & Build-up**

As against the rated annual capacity of 200 tonnes, actual utilisation in first year is taken at 60% and thereafter at 75%.

**9.2 Sales Revenue at 100%** (Rs. in lacs)

Product	Qty. (Tonnes)	Price/Ton (Rs.)	Sales Value
Desiccated Coconut	200	80,000	160.00
Coconut Parings	30	25,000	7.50
Coconut Shell	60	650	0.39
		<b>Total</b>	<b>167.89</b>

**9.3 Raw and Packing Materials Required at 100%** (Rs. in lacs)

Product	Qty.	Price (Rs.)	Value
Coconut with husk	16.00 Lacs	7.25	116.00
Packing Material @ 7000/Ton	--	--	14.00
		<b>Total</b>	<b>130.00</b>

#### 9.4 Utilities

Annual cost of utilities at 100% would be Rs. 80,000/-.

#### 9.5 Selling Expenses

Since majority of the sales would be to bulk consumers, a provision of 10% of the sales income every year would be adequate.

#### 9.6 Interest

Interest on term loan of Rs.11.55 lacs is computed @ 12% per annum considering repayment in 4 years including a moratorium period of 6 months and on working capital from bank it is calculated @ 14% every year.

#### 9.7 Depreciation

It is calculated @ 10% on building and 20% on machinery and miscellaneous assets on WDV basis.

### 10.0 PROJECTED PROFITABILITY

(Rs. in lacs)

No.	Particulars	1st Year	2nd Year
<b>A</b>	<b>Installed Capacity</b>	--- 200 Tonnes ---	
	Capacity Utilisation	60%	75%
	Sales Realisation	100.75	125.90
<b>B</b>	<b>Cost of Production</b>		
	Raw and Packing Materials	78.00	97.50
	Utilities	0.48	0.60
	Salaries	3.66	4.50
	Stores and Spares	0.36	0.48
	Repairs & Maintenance	0.48	0.66
	Selling Expenses @ 17.5%	10.05	12.60
	Administrative Expenses	0.75	1.00
	<b>Total</b>	<b>93.78</b>	<b>117.34</b>
<b>C</b>	<b>Profit before Interest &amp; Depreciation</b>	<b>6.97</b>	<b>8.56</b>
	Interest on Term Loan	1.11	0.78
	Interest on Working Capital	1.71	2.14
	Depreciation	1.36	1.12
	Profit before Tax	2.79	4.52
	Income-tax @ 20%	0.56	0.90
	Profit after Tax	2.23	3.62
	Cash Accruals	3.59	4.74
	Repayment of Term Loan	1.40	2.80

## 11.0 BREAK-EVEN ANALYSIS

(Rs. in lacs)

No	Particulars	Amount	
[A]	Sales		100.75
[B]	Variable Costs		
	Raw and Packing Materials	78.00	
	Utilities (70%)	0.34	
	Salaries (70%)	2.56	
	Stores & Spares	0.36	
	Selling Expenses (70%)	7.00	
	Admn Expenses (50%)	0.37	
	Interest on WC	1.71	90.34
[C]	Contribution [A] - [B]		10.41
[D]	Fixed Cost		6.50
[E]	Break-Even Point [D] ÷ [C]		62%

## 12.0 [A] LEVERAGES

### Financial Leverage

$$= \text{EBIT/EBT}$$

$$= 5.61 \div 2.79$$

$$= 2.01$$

### Operating Leverage

$$= \text{Contribution/EBT}$$

$$= 10.41 \div 2.79$$

$$= 3.73$$

### Degree of Total Leverage

$$= \text{FL/OL}$$

$$= 2.01 \div 3.73$$

$$= 0.54$$

**[B] Debt Service Coverage Ratio (DSCR)**

(Rs. in lacs)

Particulars	1st Yr	2nd Yr	3rd Yr	4th Yr
Cash Accruals	3.59	4.74	5.36	5.97
Interest on TL	1.11	0.78	0.44	0.25
<b>Total [A]</b>	<b>4.70</b>	<b>5.52</b>	<b>5.80</b>	<b>6.22</b>
Interest on TL	1.11	0.78	0.44	0.25
Repayment of TL	1.65	3.30	3.30	3.30
<b>Total [B]</b>	<b>2.76</b>	<b>4.08</b>	<b>3.74</b>	<b>3.55</b>
<b>DSCR [A] ÷ [B]</b>	<b>1.77</b>	<b>1.28</b>	<b>1.55</b>	<b>1.75</b>
<b>Average DSCR</b>	----- <b>1.60</b> -----			

**[C] Internal Rate of Return (IRR)**

Cost of the project is Rs. 16.25 lacs.

(Rs. in lacs)

Year	Cash Accruals	24%	28%	32%
1	3.59	2.89	2.80	2.72
2	4.74	3.08	2.89	2.72
3	5.36	2.81	2.56	2.33
4	5.97	2.53	2.23	1.96
5	6.53	2.23	1.90	1.63
6	6.98	1.92	1.58	1.32
7	7.52	1.67	1.34	1.08
8	8.00	1.43	1.11	0.86
	<b>48.69</b>	<b>18.56</b>	<b>16.41</b>	<b>14.62</b>

The IRR is around 28%.

**Some of the machinery suppliers are**

1. DP Pulveriser Works,12, Nagindas Master, Fort, Mumbai 400 001
2. Monarch Engg Works,13,Khawa Lane, Kumbharwada, Mumbai 400 004
3. Gladwyn & Co, 251, DN Road, Fort, Mumbai 400 001