

COCONUT PRODUCTS



QUALITY AND STANDARDS :

PRODUCTION CAPACITY : Desiccated coconut : 126 tpa
 Coconut oil (soap grade) : 7 tpa
 Coconut shell powder : 35 tpa

1.0 PRODUCT AND ITS APPLICATIONS

The main coconut products to be produced in the unit are coconut powder, coconut oil (non- edible oil from pared nut cuticle) and coconut shell powder (used as a filler and extender compound)

2.0 MARKET POTENTIAL

Desiccated coconut is the dehydrated and shredded kernel produced from matured nuts. Desiccated coconut is produced in different grades depending on their fineness. The fine and medium grades are generally exported.

India is the third largest coconut producing country in the world. Nearly 60% of the total production of nuts is directly used as food whereas the balance production goes for oil extraction. Desiccated coconut is mainly used in the manufacture of sweets, cake-dressings, pastries, chocolates and biscuits. It is also used in curries and puddings in place of raw coconut. It is estimated that 30% of production goes to biscuit manufacturers, 10% to confectionery and 60% to bakeries, sweets and other products. The requirement is met mostly from Karnataka and Tamilnadu.

The coconut oil produced in the unit will be of non-edible grade mainly used for soap making. The coconut shell powder, a by-product of coconut processing industry, is extensively used as a compound filler for synthetic resin glues and as a filler and extender for phenolic moulding powders. It is also used in the specialised surface finished, resin casting, mild abrasive products, hand cleaners and bituminous products. Coconut shell powder of a 100 mesh particle size is suitable as filler in the thermoset moulding powder whereas 200-300 mesh size is used for synthetic resin glues.

3.0 BASIS AND PRESUMPTIONS

- a) The unit proposes to work at least 300 days per annum on single shift basis.
- b) The unit can achieve its full capacity utilization during the 3rd year of operation.
- c) The wages for skilled workers is taken as per prevailing rates in this type of industry.
- d) Interest rate for total capital investment is calculated @ 12% per annum.
- e) The entrepreneur is expected to raise 20-25% of the capital as margin money.
- f) The unit proposes to construct own building.
- g) Costs of machinery and equipment are based on average prices.

4.0 IMPLEMENTATION SCHEDULE

Project implementation will take a period of 8 months. Break-up of the activities and relative time for each activity is shown below:

❖ Scheme preparation and approval	:	01 month
❖ SSI provisional registration	:	1-2 months
❖ Sanction of financial supports etc.	:	2-5 months
❖ Installation of machinery and power connection	:	6-8 months
❖ Trial run and production	:	01 month

5.0 TECHNICAL ASPECTS

5.1 Availability of Raw Material

The main raw material required for this project is matured coconut. The consumables required are the packing items. Coconut is abundantly available in coastal areas of India.

5.2 Process of Manufacture

Fully ripe sound and healthy coconuts are used.

In matured coconut stored along with the husk, the water inside the kernel generally gets absorbed. This also facilitates coconut kernel to get separated from shell walls. The shelling operation is done manually by removing the outer hard shell which forms a by-product for production of coconut shell powder. When the shelling operation is done with hand tools, the interior kernel comes out intact like Ball Copra. The brown portion at the surface (red skin or cuticle or testa) is then removed by scrapping it off. The process is called paring. During this process about 15% of the kernel is removed which is pressed out in expeller after drying to get coconut oil. It is non edible oil used for soap making. Shelled coconuts after paring are washed and shredded to produce strands. These are dried in a hot air drier by spreading uniformly in trays. The dried product is cooled and sifted on vibratory screens of different sieve sizes. The sieved material is packed in moisture proof coextruded plastic bags of 500g /1000g capacity. The average yield of desiccated coconut is 100g per coconut.

Coconut shell powder is manufactured from the shells available as by-product which are cleaned and broken into small pieces by shell breaker. The broken shells are then fed into a pulveriser to produce powder, which is sieved to obtain product of required particle size. The powder is filled in HDPE woven sacks for marketing.

6.0 POLLUTION CONTROL

There is no major pollution problem associated with this industry except for disposal of waste which should be managed appropriately. The entrepreneurs are advised to take "No Objection Certificate" from the State Pollution Control Board.

7.0 ENERGY CONSERVATION

The fuel for the steam generation in the boiler is coal or LDO depending upon the type of boiler. Proper care should be taken while utilising the fuel for the steam production. There should be no leakage of steam in the pipe lines and adequate insulation should be provided.

8.0 PRODUCTION CAPACITY

Quantity	: Desiccated coconut (coconut powder) - 126 tpa
	Coconut oil (non-edible) - 7 tpa
	Coconut shell powder - 35 tpa
Value	: Rs. 92.20 lakh
Installation cap.	: 18 lakh coconuts/annum
Working cap.	: 300 day/annum
Optimum cap. utilization	: 70%
Manpower	: 22

Utilities

Motive Power	: 80 KVA
Water	: 10 kL/day
Fuel(LD for DG set)	80 L/day

9.0 FINANCIAL ASPECTS

9.1 Fixed Capital

9.1.1 Land & Building

	Amount (Rs. lakh)
Land 600 sq.m.	: 0.90
Built up Area 300 sq. m.	: 9.00

Total cost of Land and Building	: 9.90

9.1.2 Machinery and Equipment

Description	Amount (Rs. lakh)
Wet coconut disintegrator, hot air drier with blower/vibratory sieving unit/grader, sealing machine, scrapping knives, baby oil expeller, coconut shell breaker, pulveriser, centrifugal sieving machine, weighing machine, aluminium trays.	: 7.50
Erection & electrification @10% cost of machinery & equipment	: 0.75
Office furniture & fixtures	: 0.45
Total :	-----
	8.70

9.1.3. Pre-Operative Expensive

Consultancy fee project report deposits with cematic department etc.	0.90
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9.1.4 Total Fixed Capital : **19.50**
(9.1.1+9.1.2+9.1.3)

9.2 Recurring expenses per annum

9.2.1 Personnel

Designation	No.	Salary Per month	Amount (Rs.lakh)
Factory Manager	1	10,000	1.20
Supervisor	2	5,000	1.20
Office Assistant	1	5,000	0.60
Skilled workers	2	2,500	0.60
Unskilled workers	04	1,500	0.72
			4.32
Perquisites @15%			0.65

Total	:	10	4.97

9.2.2 Raw Material including packaging materials

Item	Qty. (MT)	Rate per MT	Amount (Rs.lakh)
Dehydrated coconut	315	28000	88.20
Soya	12	8500	01.02
Shell powder	3	8000	00.24
Hyderachlour	5600 No	5 each	0.28

Total			89.54

9.2.3 Utilities

	Amount (Rs. lakh)
Power	0.47
Water	0.01

Total:	0.48

9.2.4 Other Contingent Expenses

	Amount (Rs. lakh)
Repairs and maintenance@10%	1.45
Consumables, spares , others	0.60
Insurance	0.15

Total:	2.20

9.2.5 Total Recurring Expenditure	Amount (Rs. lakh)
(9.2.1+9.2.2+9.2.3+9.2.4)	97.19
9.3 Working Capital	8.10
Recurring Expenditure for 1 month	
9.4 Total Capital Investment	Amount (Rs. lakh)
Fixed capital (Refer 9.1.4)	19.50
Working capital (Refer 9.3)	8.10

Total:	27.60

10.0 FINANCIAL ANALYSIS

10.1 Cost of Production (per annum)	Amount (Rs. lakh)
Recurring expenses (Refer 9.2.5)	97.19
Depreciation on building @5%	0.50
Depreciation on machinery @10%	0.75
Depreciation on furniture @20%	0.09

Total:	98.53

10.2 Sale Proceeds (Turnover) per year

Item	Qty. (MT)	Rate per MT	Amount (Rs.lakh)
Coconut	280	41000	114.80

10.3 Net Profit per year

= Sales - Cost of production

= 114.80 - 98.53

= Rs. 16.27 lakh

10.4 Net Profit Ratio

= $\frac{\text{Net profit} \times 100}{\text{Sales}}$

= $\frac{16.27 \times 100}{114.80}$

= 14.17%

10.5 Rate of Return on Investment

$$= \frac{\text{Net profit} \times 100}{\text{Capital Investment}}$$

$$= \frac{16.27 \times 100}{27.60}$$

$$= 58.95\%$$

10.6 Annual Fixed Cost

Amount (Rs. Lakh)

All depreciation	1.34
Interest	2.95
40% of salary, wages, utility, contingency	38.88
Insurance	0.15
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Total:	43.32

10.7 Break even Point

$$= \frac{\text{Annual Fixed Cost} \times 100}{\text{Annual Fixed Cost} + \text{Profit}}$$

$$= \frac{43.32 \times 100}{43.32 + 16.27}$$

$$= 72.70\%$$

11.0 ADDRESSES OF MACHINERY AND EQUIPMENT SUPPLIERS

Dhillon Machinery Corporation
22, B.L.Saha Road,
Kolkata – 700 053

Premier Engineering Products
CRC Building (3rd Floor), MG Road
Kochi – 682 016

Batliboi and Co. Ltd.
26, R.N.Mukherjee Road, Kolkata
– 700 001

D.P.Pulveriser Works,
12, Nagindar Master Road, Fort,
Mumbai – 400 021

Andrew Yule & Co. Ltd.
Yule House, 8, Clive Row
Kolkata – 700 001