PROJECT PROFILE
COCONUT SHELL POWDER

1. INTRODUCTION

Coconut shell powder is made from coconut shells and is used as a filler in the manufacture of thermo set moulding powders like bakelite synthetic resin glues or phenol formaldehyde. Availability of adequate quantity of coconut shells is the most critical aspect. It is imperative to locate reliable sources for regular supplies and the location of the factory has to be finalized accordingly. Mesh size of 80-100 is suitable for thermoset moulding power whereas for synthetic resin glues the size has to be around 230-240 mesh. Product provides substantial value addition as normally shells are either thrown away or used as a fuel.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The only raw material required will be coconut shells. Monthly requirement at 100% activity level shall be 50 tons which is not a small quantity. Proper assessment and arrangements must be made to ensure adequate regular supply. Powder can be packed

in gunny bags with liner inside. Production of coconut in the state is estimated 326.30 million nuts / year.

4. MARKET OPPORTUNITIES

Coconut shell powder is mainly used as filler and thus it is an industrial product. It is used in the manufacture of thermoset moulding powder such as phenol formaldehyde moulding powder or bakelite and synthetic resin glues. Powder of different particle size is required for different end-uses. It would be better if the promoters have relevant marketing background. India has maintained fairly steady industrial growth during last 8-10 years. Indian economy is gradually coming out of the grip of demand recession and industrial production is once again picking up. Yet, another favourable aspect of coconut shell powder is that it is a comparatively cheaper filler and hence preferred by many end users.

5. PROJECT DESCRIPTION

a) Product & Its uses

Coconut shell powder is an industrial product and is considered to be a suitable and cheap filler compared to others. It is easy to manufacture and results in considerable value addition.

b) Capacity

The proposed capacity of the plant is to process 600 MT / annum of coconut shell.

c) Manufacturing process

It is not very complicated. Coconut shells are cleaned and broken manually into small pieces and then fed into pulveriser. Powder obtained from pulveriser is fed into rotor lift, coiled and passed through dresser to have required mesh size. Rejects from the dresser are recycled. Efficient pulverizing and screening are critical aspects. Recovery is around 90%.

6. PROJECT COMPONENTS & COST

a) Land & Building

Land of 200 sq. mtrs. with built up area of 100 sq. mtrs. shall be adequate. Spare land can be utilized for storage of coconut shells. Land may cost Rs. 1.00 lacs whereas cost of construction could be Rs. 6.00 lacs.

b) Plant & Machinery

Production capacity has to be determined after assessing the availability of coconut shells but the minimum viable size has to be to process 600 tons every year and 300 working days. This would call for installation of the following machinery.

Item	**Qty**	**Price (Rs in lacs.)**
Pulveriser with electric motor and accessories	1	4.20
Centrifugal screen with electric motor and accessories	1	1.50
Rotor lift with Electric motor	1	0.60
Laboratory equipment	-	0.40
Weighing scales etc.	-	0.30
	Total	**7.00`**

c) Miscellaneous Assets

Some other assets like furniture & fixtures, tools, material handling equipment etc. shall be required for which a provision of Rs. 1.30 lacs is made.

d) Utilities

Power requirement shall be 50 HP whereas water required every day shall be around 5000 ltrs. The cost of utilities is estimated at Rs. 2.60 lacs.

e) Prel. & Pre Operative Expenses

There will be many pre-production expenses like registration, establishment and administrative charges, travelling expenses, interest during implementation, trial run expenses and so on for which a provision of 1.60 lac is made.

f) Working Capital Assessment

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of Raw material & packing material	1 month	30%	1.15	0.80	0.35
Stock of finished goods	½ month	25%	1.71	1.28	0.43
Receivable	1 month	25%	2.02	1.52	0.50
Total			**4.88**	**3.60**	**1.28**

g) Project cost & Means of finance

Item	**Amount (Rs. in lacs)**
Land and Building	7.00
Plant and Machinery	7.00
Miscellaneous Assets	1.30
P & P Expenses	1.60
Contingencies @ 10% on Building and plant & machinery	1.30
Working capital margin	1.28
Total	19.48
Means of Finance	
Promoters' contribution	7.80
Term loan from Bank /FI	11.68

Total	**19.48**
Debt Equity Ratio	1.5:1
Promoters contribution	40%

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.

7) PROJECTED PROFITABILITY

a) Production Capacity

The rated production capacity of the plant is 600 tonnes per year whereas actual capacity utilization is expected to be 60% and 75%, during 1st year and 2nd year respectively.

b) Sales Revenue at 100%

Assuming selling price of Rs. 15,000 per ton and recovery of 90%, the annual turnover at 100% would be Rs. 81.00. lacs.

c) Raw Material Required at 100%

Price of coconut shells is assumed to be Rs. 7000/- per ton and thus cost of 600 tonnes would be 42.00 lacs. Per ton packing material cost would be Rs. 700/- and hence cost of packing material for 600 tons would be Rs. 4.20 lacs.

d) Projected Profitability **(Rs. in lacs)**

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**600 Tons**	
	Capacity Utilisation	60%	75%
	Sales Realisation	48.60	60.75
B.	**Cost of Production**		
	Raw material & Packing materials	27.72	34.65
	Utilities	1.56	1.95
	Salaries	7.32	8.05
	Stores and Spares	1.20	1.50
	Repairs and Maintenance	0.90	1.12
	Selling & Admn. Expenses @ 5%	2.41	3.03
	Total	41.11	50.30
C.	**Profit before Interest & Depreciation**	**7.49**	**10.45**
	Interest on Term Loan	1.16	0.91
	Interest on Working Capital	0.43	0.54
	Depreciation.	1.30	1.17
	Net Profit	4.60	7.83
	Profit after tax	4.60	7.83
	Cash Accruals	5.90	9.00
	Repayment of Term Loan	Nil	2.50

e) Break Even Point Analysis *(Rs. in lacs)*

S. No.	**Particulars**	**Amount**	
(A)	**Sales**		**60.75**
(B)	**Variable Costs**		
	Raw materal & packing material	34.65	
	Utilities(70%)	1.36	

	Salaries (60%)	5.63	
	Stores and Spares	1.50	
	Selling and admn. Exps (50%)	1.51	
	Interest on WC	0.54	**45.15**
(C)	**Contribution (A) – (B)**		**15.60**
(D)	**Fixed Costs**		**6.54**
(E)	**Break Even Point**		**42%**

f) Debt Service Coverage Ratio (DSCR) *(Rs. in Lacs)*

Particulars	**1st year**	**2nd year**	**3rd year**
Cash Accruals	5.90	9.00	10.80
Interest on TL	1.16	0.91	0.66
Total (A)	7.06	9.91	11.46
Interest on TL	1.16	0.91	0.66
Repayment of TL	Nil	2.50	2.50
Total (B)	1.16	3.41	3.16
DSCR (A) + (B)	6.08	2.90	3.62
Average DSCR	4.20		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 19.48lacs **(Rs. in lacs)**

Year	**Cash Accruals**	**20%**	**24%**
1	5.90	4.91	4.72
2	9.00	6.20	5.85
3	10.80	6.10	5.61
4	10.80	5.18	4.53
Total		22.31	20.71

The IRR is around 24%.

h) Manpower requirement

Particulars	Nos.	Monthly	Total Monthly Salary (Rs.)
Machine Operator	1	8,000	8,000
Skilled Workers	2	7,500	15,000
Un skilled workers	5	6,000	30,000
Salesman	1	8,000	8,000
		Total	**61,000**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 7,000 / ton and Rs. 15,000/ ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Sri Ballaji Industries
   No. 622-1 Elgi Industrial Area,
   Trichy Road, Singan cellur, Coimbator (T.N)
   Ph. 9943023249
   email.sbicbes@gmail.com
2. Essar Engineers
   519/1-A, Attipalayam Road,
   Chinnavedampatti, Coimbatore – 641006 (TN)
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