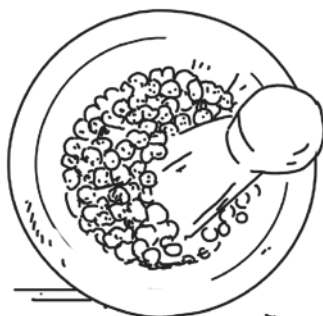


SPICE GRINDING



1.0 INTRODUCTION

Spices play an important role in enhancing the flavour and taste of the processed foods. On account of their ability to impart flavour and aroma, spices have been used in the preparation of a wide variety of processed foods. Spices are required in preparing appetising digested beverages confectionary, soup powders, sauces, instant curries, canned meat and poultry products etc. Spices are also used in the medicines because of their carminative, stimulating and digestive properties.

Ground spices are extensively used in all types of curry dishes in India and abroad. Although spices are traded chiefly in an unprocessed form, a small yet significant quantity enters international trade as spice powders. Curry powder is the foremost of those blends or mixes and sometimes consists of 20 or more spices designed to add the characteristic flavour of an Indian curry, which is appreciated all over the world. Apart from the overseas market, processed curry powder is becoming popular in the domestic market also. Hence the demand for unadulterated spices and curry powder in attractive packaging is fast emerging.

This project profile is for setting up of a Spice Grinding Unit based on 300 working days per annum and 8 working hours per day. The installed production capacity of the unit per annum is as follows;

Turmeric Powder	-	20 Ton
Chilli Powder	-	10 Ton
Pepper Powder	-	10 Ton
Jeera Powder	-	5 Ton
Dhania Powder	-	5 Ton

2.0 MARKET POTENTIAL

India is the world's biggest exporter of spices. There is good scope for domestic market for this commodity in

processed form. The market for export of spices is encouraged in processed form as it will bring more value addition to the unit price of whole spices. The demand for spice powder is increasing day by day with the changing attitude as well as improvement in purchasing power of the people. The products find good market in urban areas of the country particularly within the state itself.

3.0 PROCESS DETAILS

The process of Spice Powder making comprises of the following different process.

- (i) Washing: First of all, the spices are washed with water under high pressure to remove impurities.
- (ii) Peeling & Cutting to Small Pieces: Some spices require peeling and cutting to small pieces. Such spices are peeled with hand knives.
- (iii) Drying: Spices are spread on the floor to provide sun drying. At times, mechanical dryers are also used. Tray type dryer is most suitable.
- (iv) Grinding/ Pulverising: Spices are grinded in dry form.
- (v) Mixing: After all the above operations, various spices for different purposes are mixed together.
- (vi) Packaging: At the end, spices powder are packaged in automatic form, fill and sealing machine.

Transportation and Marketing: Thereafter, the products are transported and supplied to the bulk purchasers

4.0 COST OF THE PROJECT

The estimated project cost is given below:

		(Rs. in lacs)
Particulars	Amount (Rs)	
Land & site development	Own Land/ On Lease	
Building & civil works	2.31	
Plant & Machinery	3.20	
Misc. Fixed assets	0.77	
Preliminary & pre-operative expenses	0.63	
Contingencies & escalation @ 3%	0.19	
Working capital	1.40	
TOTAL	8.50	

4.1 Land & Site Development: Nil. Covered Area: 700 Sq. Ft.

4.2 Building & Civil Works: Details of building & civil works are given below.

Particulars	Area (Sqft)	Rate (Rs)	Amount (Rs)
Factory Shed	400	275	110000
Office/Store for Raw Material/Finished Goods)	300	275	82500
Sub total			192500
Add: Electrification, water supply and sanitation @ 20%			38500
TOTAL			231000
Say (Rs. in lacs)			2.31

4.3 Plant & Machinery: Details of plant & machinery are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Pulveriser with 7 HP Motor and accessories	1	30000	30000
Disintegrator with 7 HP Motor	1	25000	25000
Hot air dryer with temperature control device	1	33000	33000
Seiving Machine	1	7500	7500
Automatic Form Fill and Sealing Machine	1	140000	140000
Packaging Machine (Manual)	2	10000	20000
Testing equipments	1	35000	35000
Sub total			290500
Add: Installation, transportation etc @ 10%			29050
TOTAL			319550
Say (Rs. in lacs)			3.20

4.4 Misc. Fixed assets: Details of miscellaneous fixed assets are given below.

Particulars	Qty	Amount (Rs)
Furniture's including Working Tables & Fixtures	LS	30000
Tools and equipment	LS	25000
Miscellaneous items	LS	15000
Sub total		70000
Add: Installation, transportation, etc @ 10%		7000
TOTAL		77000
Say (Rs. in lacs)		0.77

4.5 Contingencies & escalation: Contingencies & escalation has been assumed at 3% of the cost of land & site development, building & civil works, plant & machinery and miscellaneous fixed assets.

4.6 Preliminary & pre-operative expenses: Details of preliminary & pre-operative expenses are given below.
(Rs. In lacs)

Particulars	Amount (Rs)
Travelling expenses	5000
Professional & other fees	21000
Interest during implementation	17171
Miscellaneous expenses	20000
TOTAL	63171
Say (Rs. in lacs)	0.63

4.7 Working capital: Details of working capital are given below.

(Rs. in lacs)

	Period (Days)	Total Current Assets		
		Year 1	Year 2	Year 3
Raw materials	15	0.76	0.89	1.01
Power & Utility	30	0.06	0.07	0.08
Salary	30	0.49	0.50	0.50
Finished Goods	15	1.06	1.20	1.34
Receivables	15	1.14	1.33	1.52
Total		3.51	3.98	4.44
Working capital margin in Year 1 (40%)	1.40			

5.0 MEANS OF FINANCE

The means of finance for the project is estimated as below.

(Rs. in lacs)

Particulars	Percent	Amount
<u>EQUITY</u>		
A. Equity from Promoters	40%	3.40
B. Subsidy from Central/State Govt.	-	
<u>DEBT</u>		
Term Loan from Banks/Financial Institutions	60%	5.10
TOTAL	100%	8.50

6.0 PROFITABILITY STATEMENT

(Rs. in lacs)

Particulars	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
<u>A. INCOME</u>					
Production capacity (Ton/annum)	50	50	50	50	50
Capacity utilisation	60%	70%	80%	80%	80%
Production/annum at capacity utilisation	30	35	40	40	40
Total income/annum	27.75	32.38	37.00	37.00	37.00
<u>B. OPERATING EXPENSES</u>					
Raw materials	18.50	21.58	24.67	24.67	24.67
Power & Utility	0.69	0.80	0.92	0.92	0.92
Salary	6.00	6.03	6.06	6.09	6.12
Repair &	0.10	0.10	0.10	0.10	0.11

Other Expenses	0.56	0.65	0.74	0.74	0.74
Total Operating Expenses	25.84	29.16	32.49	32.52	32.55
Operating profit	1.91	3.21	4.51	4.48	4.45
C. FINANCIAL EXPENSES					
Depreciation	0.29	0.29	0.29	0.29	0.29
Interest on Term Loan	0.40	0.32	0.23	0.14	0.05
Interest on Working Capital Loan	0.17	0.19	0.21	0.21	0.21
Net Profit	1.05	2.41	3.78	3.83	3.89
Net cash accruals	1.34	2.70	4.07	4.13	4.19
Principal Repayment	0.57	1.13	1.13	1.13	1.13

6.1 Production capacity and Sales Realisation: Total production of spice powder at 100% capacity utilization is estimated as below.

Turmeric Powder	20 Ton
Chilly Powder	10 Ton
Pepper Powder	10 Ton
Jeera (Camin Seed)	5 Ton
Dhania (Coriander)	5 Ton
Total production per annum at 100% capacity	50 Ton

Products	Qty	Average Rate Per Unit (Rs.)	Amount (Rs)
Turmeric Powder	20 Ton	75000	1500000
Chilly Powder	10 Ton	95000	950000
Pepper Powder	10 Ton	120000	1200000
Jeera (Camin Seed)	5 Ton	120000	600000
Dhania (Coriander)	5 Ton	75000	375000
Total Sale Turnover per annum at 100% capacity			4625000

6.2 Raw materials: Total expenses on raw materials at 100% capacity utilization are estimated as below.

Particulars	Qty	Average Rate Per Unit (Rs.)	Amount (Rs)
Turmeric Powder	20.1 Ton	40000	804000
Chilly Powder	10.05 Ton	60000	603000
Pepper Powder	10.05 Ton	80000	804000
Jeera (Camin Seed)	5.02 Ton	80000	401600
Dhania (Coriander)	5.02 Ton	40000	200800
Packaging Material (Poly Packets of Different Sizes)	LS	150000	150000
Secondary Packaging (Cartons)	LS	120000	120000
Expenses on raw material at 100% capacity (Rs)			3083400

6.3 Power & Utility: Total expenses on power & utility at 100% capacity utilization is estimated as below.

Particulars	Quantity	Power (Kw)	Total (Kw)
Plant & machinery (Total 15 HP)	--	11.19	11.19
General Lighting	10	0.10	1.00
Total power requirement/ day (Kw)			12.19
No. of hrs/day	8		
No of days/annum	300		
Annual power requirement (kwh)	29256		
Rate per unit (Rs)	3.50		
Expenses on power (Rs)	102396		
Expenses on Water/Other Utility (Rs)	12000		
Expenses on power & utility at 100% capacity (Rs)	114396		

6.4 Salary: Total expenses on salary in the 1st year are estimated as given below. It is assumed that salary expenses will increase @ 0.5% every subsequent year.

Particulars of Employees	Numbers	Salary/ Month (Rs)	Cost/ annum (Rs)
Manager	1	7000	84000
Store In charge cum Accountant	1	6000	72000
Sales Personnel	3	6000	216000
Machine Operator/Skilled Workers	2	5000	120000
Unskilled workers	3	3000	108000
Expenses on salary in the 1st year (Rs)			600000

6.5 Repair & Maintenance: Total expenses on repair & maintenance in the 1st year is estimated as given below. It is assumed that expenses on repair & maintenance will increase @ 2% every subsequent year.

(Rs. in lacs)			
Particulars	Cost (Rs)	Rate	Amount (Rs)
Building & civil works	2.31	1.00%	0.02
Plant & Machinery	3.2	2.00%	0.06
Misc. Fixed assets	0.77	1.50%	0.01
Expenses on repair & maintenance in year 1			0.10

6.6 Other Expenses: Other expenses have been assumed at 2% of sales realisation.

6.7 Depreciation: Depreciation has been calculated by straight line method. The details of calculation are given below.

(Rs in lacs)			
Description	Cost (Rs)	Rate	Amount/ annum (Rs)
Building & civil works	2.31	3.34%	0.08
Plant & Machinery	3.20	5.28%	0.17
Misc. Fixed assets	0.77	6.33%	0.05
TOTAL			0.29

6.8 Interest on term loan & principal repayment: Interest rate has been assumed at 8%. Duration of Loan repayment has been considered for a period of 5 years including moratorium period of 6 months with equal monthly instalments. The details of calculation are given below.

(Rs in lacs)

Month	Year	1	2	3	4	5
Month 1	Opening balance	5.10	4.54	3.40	2.27	1.13
	Repayment	0.00	0.09	0.09	0.09	0.09
	Interest (8.00%)	0.03	0.03	0.02	0.02	0.01
	Closing balance	5.10	4.44	3.31	2.17	1.04
Month 2	Opening balance	5.10	4.44	3.31	2.17	1.04
	Repayment	0.00	0.09	0.09	0.09	0.09
	Interest	0.03	0.03	0.02	0.01	0.01
	Closing balance	5.10	4.35	3.21	2.08	0.94
Month 3	Opening balance	5.10	4.35	3.21	2.08	0.94
	Repayment	0.00	0.09	0.09	0.09	0.09
	Interest	0.03	0.03	0.02	0.01	0.01
	Closing balance	5.10	4.25	3.12	1.98	0.85
Month 4	Opening balance	5.10	4.25	3.12	1.98	0.85
	Repayment	0.00	0.09	0.09	0.09	0.09
	Interest	0.03	0.03	0.02	0.01	0.01
	Closing balance	5.10	4.16	3.02	1.89	0.76
Month 5	Opening balance	5.10	4.16	3.02	1.89	0.76
	Repayment	0.00	0.09	0.09	0.09	0.09
	Interest	0.03	0.03	0.02	0.01	0.01
	Closing balance	5.10	4.06	2.93	1.80	0.66
Month 6	Opening balance	5.10	4.06	2.93	1.80	0.66
	Repayment	0.00	0.09	0.09	0.09	0.09
	Interest	0.03	0.03	0.02	0.01	0.00
	Closing balance	5.10	3.97	2.83	1.70	0.57
Month 7	Opening balance	5.10	3.97	2.83	1.70	0.57
	Repayment	0.09	0.09	0.09	0.09	0.09
	Interest	0.03	0.03	0.02	0.01	0.00
	Closing balance	5.01	3.87	2.74	1.61	0.47
Month 8	Opening balance	5.01	3.87	2.74	1.61	0.47
	Repayment	0.09	0.09	0.09	0.09	0.09
	Interest	0.03	0.03	0.02	0.01	0.00
	Closing balance	4.91	3.78	2.65	1.51	0.38
Month 9	Opening balance	4.91	3.78	2.65	1.51	0.38
	Repayment	0.09	0.09	0.09	0.09	0.09
	Interest	0.03	0.03	0.02	0.01	0.00
	Closing balance	4.82	3.69	2.55	1.42	0.28
Month 10	Opening balance	4.82	3.69	2.55	1.42	0.28
	Repayment	0.09	0.09	0.09	0.09	0.09
	Interest	0.03	0.02	0.02	0.01	0.00
	Closing balance	4.72	3.59	2.46	1.32	0.19
Month 11	Opening balance	4.72	3.59	2.46	1.32	0.19
	Repayment	0.09	0.09	0.09	0.09	0.09
	Interest	0.03	0.02	0.02	0.01	0.00
	Closing balance	4.63	3.50	2.36	1.23	0.09
Month 12	Opening balance	4.63	3.50	2.36	1.23	0.09
	Repayment	0.09	0.09	0.09	0.09	0.09
	Interest	0.03	0.02	0.02	0.01	0.00
	Closing balance	4.54	3.40	2.27	1.13	0.00

Principal Repayment	0.57	1.13	1.13	1.13	1.13
Interest	0.40	0.32	0.23	0.14	0.05

7.0 DEBT SERVICE COVERAGE RATIO (DSCR)

(Rs in lacs)

Year	1	2	3	4	5
Profit After Tax (Net Profit)	1.05	2.41	3.78	3.83	3.89
Depreciation	0.29	0.29	0.29	0.29	0.29
Interest	0.40	0.32	0.23	0.14	0.05
Total	1.74	3.02	4.30	4.27	4.24
Interest	0.40	0.32	0.23	0.14	0.05
Loan repayment	0.57	1.13	1.13	1.13	1.13
Total	0.97	1.46	1.36	1.27	1.18
DSCR	1.80	2.08	3.15	3.35	3.58

Average DSCR = 2.81

8.0 BREAK EVEN POINT (BEP)

(Rs. in lacs)

Year	1	2	3
A. Net sales	27.75	32.38	37.00
B. Variable cost			
Raw materials	18.50	21.58	24.67
Power & Utility	0.69	0.80	0.92
Other expenses	0.56	0.65	0.74
Interest on Working Capital Loan	0.17	0.19	0.21
Total variable cost	19.91	23.22	26.54
C. Contribution (A-B)	7.84	9.15	10.46
D. Fixed & Semi-fixed Costs			
Salary	6.00	6.03	6.06
Repair & maintenance	0.10	0.10	0.10
Interest on Term Loan	0.40	0.32	0.23
Depreciation	0.29	0.29	0.29
Total fixed cost	6.79	6.75	6.69
E. BREAK EVEN POINT	86.64%	73.72%	63.91%
F. BEP at operating capacity	51.98%	51.60%	51.13%
G. Cash BEP	49.73%	49.35%	48.88%

9.0 INTERNAL RATE OF RETURN (IRR)

(Rs. in lacs)

Year	0	1	2	3	4	5
CASH OUTFLOW						
Capital Expenditure	6.47	0.00	0.00	0.00	0.00	0.00
Working Capital	0.00	3.51	0.47	0.47	0.00	0.00
Total (A)	6.47	3.51	0.47	0.47	0.00	0.00
CASH INFLOW						
Profit After Tax		1.05	2.41	3.78	3.83	3.89
Add: Depreciation		0.29	0.29	0.29	0.29	0.29
Add: Interest		0.40	0.32	0.23	0.14	0.05
Add: Salvage Value						
Total (B)	0.00	1.74	3.02	4.30	4.27	4.24
NET FLOW (B-A)	-6.47	-1.77	2.56	3.84	4.27	4.24

IRR = 27%

Sl. No.	Name of the Machinery Suppliers	Communication Address
1.	M/s Archana Machinery Stores	M.S. Road, Fancy Bazaar, Guwahati Pin-781 001.
2.	M/s Shew Machinery Store	A. T. Road, Guwahati, Pin-781 001
3.	M/s Bengal Metal Works	69 A, Sepentine Lane, Kolkata, Pin- 700 014.