

# MUSTARD POWDER



## 1.0 INTRODUCTION

Mustard seeds are an important oilseed and India is one of the leading producers of these oilseeds. Bulk of the production goes for oil extraction but de-husked mustard is a popular table enricher on account of its flavour and pungency. A pasty product with mustard, salt and vinegar is very popular abroad whereas mustard powder is used as condiment in many food preparations like pickles and chutney, meat, salad dressings etc. The North-Eastern states of India produce substantial quantity of mustard seeds and mustard powder is also used extensively. Therefore, Mustard Powder production unit can be set up in the North-Eastern states.

This project profile is for setting up of a Mustard Powder processing unit with installed processing capacity of 200 MT mustard seeds per annum.

## 2.0 MARKET POTENTIAL

Mustard edible oil is one of the popular oils and mustard powder has also become very popular as condiment due

to its peculiar flavour and pungency. Mustard powder is used in many vegetarian and non-vegetarian food. They are also used as condiment in pickles, meat and salad dressings. As a matter of fact, Indian black mustard is known for its flavour & pungency and has very good export potential. There are very few large scale producers of this product and market is dominated by the small units.

## 3.0 PROCESS DETAILS

Graded and cleaned seeds are dried and subjected to splitting and de husking. Then the mixture of husk and splits are screened and separated. Mustard splits are ground to the desired fineness to obtain powder in a triple roller mill and finally powder is packed. Recovery is around 75%.

## 4.0 COST OF THE PROJECT

The estimated project cost is given below.

Particulars	Amount (Rs lacs)
Land and Site Development	-
Building & Civil Works	6.49
Plant & Machinery	6.37
Misc. Fixed Assets	2.00
Preliminary & Pre-operative Expenses	0.98
Contingencies & Escalation @ 3%	0.45
Working Capital	2.11
<b>TOTAL</b>	<b>18.40</b>

- 4.1 Land & Site Development:** No cost has been considered for land & site development. It is assumed that the unit will be set up in own land.

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

Particulars	Area (Sqm)	Rate (Rs)	Amount (Rs)
Work Shed (Half Brick wall, CGI sheet roof, Concrete Floor)	80	4000	320000
Office & Store (Brick wall, CGI sheet roof, Concrete Floor)	60	4500	270000
Sub total			590000
Add: Electrification, Water Supply, etc @ 10%			59000
TOTAL			649000
Say (Rs. in lacs)			6.49

**4.3 Machinery & Equipment:** Details of machinery & equipment are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Triple Roller Mill	1	150000	150000
Grader	1	40000	40000
Classifier	1	30000	30000
Plate Mill	1	85000	85000
Mini Boiler	1	75000	75000
Steam Jacketed Kettle	1	20000	20000
Seed Cleaner	1	25000	25000
Sealing Machine	1	35000	35000
Weighing scales, utensils, etc.	LS	LS	50000
Sub total			510000
Add: Transportation, installation, etc @ 15%			76500
TOTAL			636500
Say (Rs. in lacs)			6.37

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

Particulars	Qty	Rate (Rs)	Amount (Rs)
Power connection (30 HP)	1	100000	100000
Water supply system (STW boring, 3 HP pump set, storage, pipes & fittings)	1	80000	80000
Furniture & Fixtures	LS	LS	10000
Miscellaneous items	LS	LS	10000
TOTAL			200000
Say (Rs. in lacs)			2.00

**4.5 Preliminary & Pre-operative Expenses:** Details of preliminary & pre-operative expenses are given below.

Particulars	Amount (Rs lacs)
Travelling expenses	0.40
Professional & other fees	0.20
Interest during implementation	0.28
Miscellaneous expenses	0.10
TOTAL	0.98

**4.6 Contingencies & Escalation:** Contingencies & escalation has been assumed at 3% of the cost of building & civil works, machinery & equipments and misc. fixed assets.**4.7 Working capital:** Details of working capital are given below.

	Period (days)	Amount (Rs lacs)		
		Yr 1	Yr 2	Yr 3
Raw Materials & Consumables	30	1.54	1.85	2.16
Utilities	30	0.11	0.14	0.16
Salary	30	0.92	0.93	0.94
Finished Goods	15	1.31	1.49	1.66
Receivables	15	1.39	1.66	1.94
TOTAL		5.27	6.07	6.86
Working Capital Margin in Yr 1 (40%)	2.11			

## 5.0 MEANS OF FINANCE

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

Particulars	Percent	Amount (Rs lacs)
<b>EQUITY</b>		
A. Equity from Promoters	40%	7.36
B. Subsidy from Central/State Govt.	-	
<b>DEBT</b>		
Term Loan from Banks/FIs	60%	11.04
<b>TOTAL</b>	<b>100%</b>	<b>18.40</b>

## 6.0 PROFITABILITY STATEMENT

(Rs. in lacs)

Particulars	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
<b>A. INCOME</b>							
Production capacity (MT)	150	150	150	150	150	150	150
Capacity utilisation	50%	60%	70%	70%	70%	70%	70%
Production at capacity utilisation	75	90	105	105	105	105	105
Price (Rs/MT)	45000	45000	45000	45000	45000	45000	45000
Income from sales	33.75	40.50	47.25	47.25	47.25	47.25	47.25
<b>B. OPERATING EXPENSES</b>							
Raw Materials & Consumables	18.75	22.50	26.25	26.25	26.25	26.25	26.25
Utilities	1.39	1.67	1.95	1.95	1.95	1.95	1.95
Salary	11.16	11.27	11.38	11.50	11.61	11.73	11.85
Repair & Maintenance	0.15	0.18	0.21	0.26	0.31	0.37	0.44
Selling Expenses	0.34	0.41	0.47	0.47	0.47	0.47	0.47
Miscellaneous Expenses	0.17	0.20	0.24	0.24	0.24	0.24	0.24
Total Operating Expenses	31.95	36.23	40.50	40.66	40.83	41.00	41.19
Less: Working expenses capitalised	2.11	0.00	0.00	0.00	0.00	0.00	0.00
Operating profit	3.90	4.27	6.75	6.59	6.42	6.25	6.06
<b>C. FINANCIAL EXPENSES</b>							
Depreciation	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Interest on Term Loan	0.88	0.78	0.64	0.50	0.36	0.22	0.08
Interest on Working Capital Loan	0.51	0.58	0.66	0.66	0.66	0.66	0.66
Net Profit	1.73	2.12	4.65	4.64	4.61	4.58	4.53
Net cash accruals	2.52	2.91	5.45	5.43	5.41	5.37	5.32
Principal Repayment	0.44	1.77	1.77	1.77	1.77	1.77	1.77

### 6.1 Estimation of Production Capacity: Production of Mustard Powder at installed capacity is estimated as below.

Rated processing capacity (tonnes/annum of mustard seeds)	200
Recovery of powder from seeds (%)	75%
Production/annum of mustard powder at installed capacity (tonnes)	150

### 6.2 Raw Materials & Consumables: Expenses on raw materials & consumables at installed capacity is estimated as below.

Raw material required at installed capacity (tonnes)	200
Price of mustard seed (Rs/tonne)	15000
Expenses on raw materials at installed capacity (Rs)	3000000
Add: Expenses on packaging materials @ 25%	750000
Expenses on raw materials & consumables at installed capacity (Rs)	3750000

**6.3 Utilities:** Expenses on utilities at installed capacity is estimated as below.Expenses on power

Connected Load (kw)	22
Avg. load factor	70%
Hrs/day	8
Days/annum	300
Annual power consumption (kwh)	37598
Rate per unit (Rs)	5
Expenses on power per annum at installed capacity (Rs)	187992
Add: Expenses on coal for boiler @ Rs 300/day	90000
Expenses on utilities per annum at installed capacity (Rs)	277992

**6.4 Salary:** Expenses on salary in the 1<sup>st</sup> year is estimated as given below. It is assumed that salary expenses will increase @ 1% every subsequent year.

Particulars of Employees	Numbers	Salary/Month (Rs)	Cost/annum (Rs)
Manager	1	15000	180000
Skilled Workers/Machine Operators	5	10000	600000
Sales Staff	2	5000	120000
Helpers	6	3000	216000
Expenses on salary in the 1st year (Rs)			1116000

**6.5 Repair & Maintenance:** Expenses on repair & maintenance in the 1<sup>st</sup> year is estimated as given below. It is assumed that expenses on repair & maintenance will increase @ 20% every subsequent year.

Particulars	Cost (Rs)	Rate	Amount (Rs lacs)
Building & Civil Works	6.49	1%	0.06
Plant & Machinery	6.37	1%	0.06
Misc. Fixed Assets	2.00	1%	0.02
Expenses on repair & maintenance in the 1st year (Rs)			0.15

**6.6 Selling Expenses:** Selling expenses have been assumed at 1% of sales.**6.7 Miscellaneous Expenses:** Misc. expenses have been assumed at 0.5% of sales.**6.8 Depreciation:** Depreciation has been calculated by straight line method. The details of calculation are given below.

Description	Cost (Rs)	Rate	Amount/annum (Rs lacs)
Building & Civil Works	6.49	3.34%	0.22
Plant & Machinery	6.37	7.07%	0.45
Misc. Fixed Assets	2.00	6.23%	0.12
TOTAL			0.79

**6.9 Interest on Term Loan & Principal Repayment:** Interest rate has been assumed at 8% per annum. Duration of Loan repayment has been considered for a period of 7 years including moratorium period of 9 months with equal monthly instalments. The details of calculation are given below.

(Rs in lacs)

Month	Year	1	2	3	4	5	6	7
Month 1	Opening balance	11.04	10.60	8.83	7.07	5.30	3.53	1.77
	Repayment	0.00	0.15	0.15	0.15	0.15	0.15	0.15
	Interest (8%)	0.07	0.07	0.06	0.05	0.04	0.02	0.01
	Closing balance	11.04	10.45	8.68	6.92	5.15	3.39	1.62
Month 2	Opening balance	11.04	10.45	8.68	6.92	5.15	3.39	1.62
	Repayment	0.00	0.15	0.15	0.15	0.15	0.15	0.15
	Interest	0.07	0.07	0.06	0.05	0.03	0.02	0.01
	Closing balance	11.04	10.30	8.54	6.77	5.00	3.24	1.47
Month 3	Opening balance	11.04	10.30	8.54	6.77	5.00	3.24	1.47
	Repayment	0.00	0.15	0.15	0.15	0.15	0.15	0.15
	Interest	0.07	0.07	0.06	0.05	0.03	0.02	0.01
	Closing balance	11.04	10.16	8.39	6.62	4.86	3.09	1.32
Month 4	Opening balance	11.04	10.16	8.39	6.62	4.86	3.09	1.32

	Repayment	0.00	0.15	0.15	0.15	0.15	0.15	0.15
	Interest	0.07	0.07	0.06	0.04	0.03	0.02	0.01
	Closing balance	11.04	10.01	8.24	6.48	4.71	2.94	1.18
Month 5	Opening balance	11.04	10.01	8.24	6.48	4.71	2.94	1.18
	Repayment	0.00	0.15	0.15	0.15	0.15	0.15	0.15
	Interest	0.07	0.07	0.05	0.04	0.03	0.02	0.01
	Closing balance	11.04	9.86	8.10	6.33	4.56	2.80	1.03
Month 6	Opening balance	11.04	9.86	8.10	6.33	4.56	2.80	1.03
	Repayment	0.00	0.15	0.15	0.15	0.15	0.15	0.15
	Interest	0.07	0.07	0.05	0.04	0.03	0.02	0.01
	Closing balance	11.04	9.71	7.95	6.18	4.42	2.65	0.88
Month 7	Opening balance	11.04	9.71	7.95	6.18	4.42	2.65	0.88
	Repayment	0.00	0.15	0.15	0.15	0.15	0.15	0.15
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	11.04	9.57	7.80	6.04	4.27	2.50	0.74
Month 8	Opening balance	11.04	9.57	7.80	6.04	4.27	2.50	0.74
	Repayment	0.00	0.15	0.15	0.15	0.15	0.15	0.15
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.00
	Closing balance	11.04	9.42	7.65	5.89	4.12	2.36	0.59
Month 9	Opening balance	11.04	9.42	7.65	5.89	4.12	2.36	0.59
	Repayment	0.00	0.15	0.15	0.15	0.15	0.15	0.15
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.00
	Closing balance	11.04	9.27	7.51	5.74	3.97	2.21	0.44
Month 10	Opening balance	11.04	9.27	7.51	5.74	3.97	2.21	0.44
	Repayment	0.15	0.15	0.15	0.15	0.15	0.15	0.15
	Interest	0.07	0.06	0.05	0.04	0.03	0.01	0.00
	Closing balance	10.89	9.13	7.36	5.59	3.83	2.06	0.29
Month 11	Opening balance	10.89	9.13	7.36	5.59	3.83	2.06	0.29
	Repayment	0.15	0.15	0.15	0.15	0.15	0.15	0.15
	Interest	0.07	0.06	0.05	0.04	0.03	0.01	0.00
	Closing balance	10.75	8.98	7.21	5.45	3.68	1.91	0.15
Month 12	Opening balance	10.75	8.98	7.21	5.45	3.68	1.91	0.15
	Repayment	0.15	0.15	0.15	0.15	0.15	0.15	0.15
	Interest	0.07	0.06	0.05	0.04	0.02	0.01	0.00
	Closing balance	10.60	8.83	7.07	5.30	3.53	1.77	0.00
	Principal Repayment	0.44	1.77	1.77	1.77	1.77	1.77	1.77
	Interest	0.88	0.78	0.64	0.50	0.36	0.22	0.08

**6.10 Interest on Working Capital:** Interest rate on working capital loan has been assumed at 16%. The details of calculation are given below.

(Rs. in lacs)

Particulars	Year 1	Year 2	Year 3
Total current assets	5.27	6.07	6.86
Bank Loan (60%)	3.16	3.64	4.12
Interest @ 16%	0.51	0.58	0.66

## 7.0 DEBT SERVICE COVERAGE RATIO (DSCR)

(Rs. in lacs)

Year	1	2	3	4	5	6	7	Total
Profit After Tax (Net Profit)	1.73	2.12	4.65	4.64	4.61	4.58	4.53	
Depreciation	0.79	0.79	0.79	0.79	0.79	0.79	0.79	
Interest	0.88	0.78	0.64	0.50	0.36	0.22	0.08	
Total	3.40	3.69	6.09	5.93	5.77	5.59	5.40	35.86
Interest	0.88	0.78	0.64	0.50	0.36	0.22	0.08	

Loan repayment	0.44	1.77	1.77	1.77	1.77	1.77	1.77	
Total	1.32	2.55	2.41	2.27	2.13	1.98	1.84	14.50
DSCR	2.57	1.45	2.53	2.62	2.71	2.82	2.93	

Average DSCR = 2.47

## 8.0 BREAK EVEN POINT (BEP)

(Rs. in lacs)

Year	1	2	3
A. Net sales	33.75	40.50	47.25
B. Variable cost			
Raw Materials & Consumables	18.75	22.50	26.25
Utilities	1.39	1.67	1.95
Selling Expenses	0.34	0.41	0.47
Miscellaneous Expenses	0.17	0.20	0.24
Interest on Working Capital Loan	0.51	0.58	0.66
Total variable cost	21.15	25.36	29.56
C. Contribution (A-B)	12.60	15.14	17.69
D. Fixed & Semi-fixed Costs			
Salary	11.16	11.27	11.38
Repair & Maintenance	0.15	0.18	0.21
Interest on Term Loan	0.88	0.78	0.64
Depreciation	0.79	0.79	0.79
Total fixed cost	12.98	13.02	13.03
E. BREAK EVEN POINT	103.04%	86.02%	73.68%
F. BEP at operating capacity	51.52%	51.61%	51.58%
G. Cash BEP	48.38%	48.47%	48.44%

## 9.0 INTERNAL RATE OF RETURN (IRR)

(Rs. in lacs)

Year	0	1	2	3	4	5	6	7
CASH OUTFLOW								
Capital Expenditure	15.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Working Capital	0.00	5.27	0.79	0.79	0.00	0.00	0.00	0.00
Total (A)	15.31	5.27	0.79	0.79	0.00	0.00	0.00	0.00
CASH INFLOW								
Profit After Tax		1.73	2.12	4.65	4.64	4.61	4.58	4.53
Add: Depreciation		0.79	0.79	0.79	0.79	0.79	0.79	0.79
Add: Interest		0.88	0.78	0.64	0.50	0.36	0.22	0.08
Add: Salvage Value								2.30
Total (B)	0.00	3.40	3.69	6.09	5.93	5.77	5.59	7.69
NET FLOW (B-A)	-15.31	-1.87	2.90	5.29	5.93	5.77	5.59	7.69

IRR = 15%

## MACHINERY SUPPLIERS

- Bharat Engineering Co.  
202, Vanijya Bhavan, Off. D. B. Road, Kankaria, Ahmedabad, Gujarat - 380022, India
- Akhandjot Agro Industries  
Gt-road, Near: Railway Station, Distt: Patiala, Patiala, Punjab - 140401, India
- Dev Raj Hi Tech Machines Limited  
Industrial Area, Ferozpur, Punjab - 152002, India