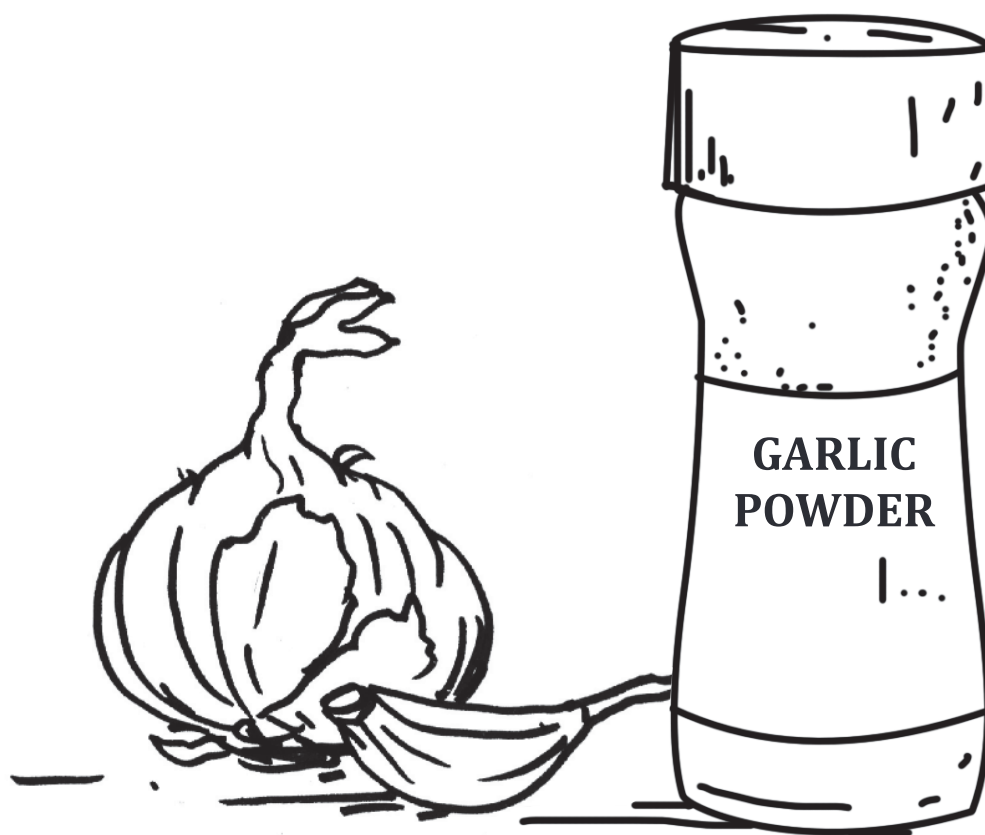


# GARLIC POWDER



## 1.0 INTRODUCTION

Garlic is being used in the Indian culinary since hundreds of years as a condiment. It helps in absorption and digestion of food, has anthelmintic and antiseptic properties and is thus used in several medicinal preparations as well. Manufacture of garlic powder from raw garlic bulbs is a very well established activity in many European countries and the USA but it has taken its root in India since the last few years. Garlic powder is a hygienically-prepared good quality product. It is easy and convenient to use and store and can be transported without any difficulty.

This project profile is for setting up of a Garlic Powder processing unit with installed processing capacity of 30 Tonnes per annum of garlic bulbs.

## 2.0 MARKET POTENTIAL

Conventionally, garlic is used since centuries as a condiment in various food preparations like flavouring

mayonnaise and tomato ketchup, salad dressings, chutney and pickles, spaghetti, meat sausages, stews and many others. Thus, market for garlic is very widely spread and bulk of the households, restaurants, eateries, caterers, canteens and clubs etc. use it regularly. Due to its medicinal properties, it has many applications in several medicinal preparations also. Use of garlic powder is increasing as it is easy to handle, avoids wastage and also hygienic. There are good prospects of exports to the Gulf countries and some of the European countries.

## 3.0 PROCESS DETAILS

Raw garlic bulbs are scrubbed manually under mild pressure to facilitate removal of papery skin and separation of cloves. Cloves are then conditioned and dehydrated. Dried cloves are powdered in the powdering unit to the required mesh size and packed in airtight containers.

#### 4.0 COST OF THE PROJECT

The estimated project cost is given below.

Particulars	Amount (Rs lacs)
Land and Site Development	-
Building & Civil Works	5.50
Plant & Machinery	5.79
Misc. Fixed Assets	2.00
Preliminary & Pre-operative Expenses	0.95
Contingencies & Escalation @ 3%	0.40
Working Capital	0.86
<b>TOTAL</b>	<b>15.50</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 (Open shed, CGI sheet roof, Concrete Floor)	80	3500	280000
Office & Store (Brick wall, CGI sheet roof, Concrete Floor)	40	5500	220000
<b>Sub total</b>			<b>500000</b>
Add: Electrification, Water Supply, etc @ 10%			50000
<b>TOTAL</b>			<b>550000</b>
<b>Say (Rs. in lacs)</b>			<b>5.50</b>

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

Particulars	Qty	Rate (Rs)	Amount (Rs)
Pre-conditioning Machine	1	60000	60000
Tray drier	1	100000	100000
Husk Remover	1	35000	35000
Powdering Unit	1	150000	150000
Air-classifier	1	30000	30000
Sealing Machine	1	35000	35000
Weighing scales, utensils, etc.	LS	LS	50000
<b>Sub total</b>			<b>460000</b>
Add: Transportation, installation, etc @ 15%			69000
<b>TOTAL</b>			<b>579000</b>
<b>Say (Rs. in lacs)</b>			<b>5.79</b>

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

Particulars	Qty	Rate (Rs)	Amount (Rs)
Power connection (35 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
<b>TOTAL</b>			<b>200000</b>
<b>Say (Rs. in lacs)</b>			<b>2.00</b>

**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	0.25
Miscellaneous expenses	0.10
<b>TOTAL</b>	<b>0.95</b>

**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.

Particulars	Period (days)	Amount (Rs lacs)		
		Yr 1	Yr 2	Yr 3
Raw Materials & Consumables	30	0.30	0.36	0.41
Utilities	30	0.09	0.11	0.13
Salary	30	0.63	0.64	0.64
Finished Goods	15	0.52	0.57	0.61
Receivables	15	0.62	0.74	0.86
<b>TOTAL</b>		<b>2.16</b>	<b>2.41</b>	<b>2.66</b>
Working Capital Margin in Yr 1 (40%)	0.86			

**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%	6.20
B. Subsidy from Central/State Govt.	-	
<b>DEBT</b>		
Term Loan from Banks/FIs	60%	9.30
<b>TOTAL</b>	<b>100%</b>	<b>15.50</b>

**6.0 PROFITABILITY STATEMENT**

(Rs. in lacs)

Particulars	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
<b>A. INCOME</b>					
Production capacity (MT)	24	24	24	24	24
Capacity utilisation	50%	60%	70%	70%	70%
Production/annum at capacity utilisation	12	14	17	17	17
Price/tonne of garlic powder (Rs)	125000	125000	125000	125000	125000
Income from sales/annum (Rs lakh)	15.00	18.00	21.00	21.00	21.00
<b>B. OPERATING EXPENSES</b>					
Raw Materials & Consumables	3.60	4.32	5.04	5.04	5.04
Utilities	1.10	1.32	1.54	1.54	1.54
Salary	7.68	7.76	7.83	7.91	7.99
Repair & Maintenance	0.13	0.16	0.19	0.23	0.28
Selling Expenses	0.15	0.18	0.21	0.21	0.21
Miscellaneous Expenses	0.08	0.09	0.11	0.11	0.11
Total Operating Expenses	12.73	13.82	14.92	15.03	15.16
Less: Working expenses capitalised	0.86	0.00	0.00	0.00	0.00

Operating profit	3.13	4.18	6.08	5.97	5.84
<b>C. FINANCIAL EXPENSES</b>					
Depreciation	0.72	0.72	0.72	0.72	0.72
Interest on Term Loan	0.74	0.62	0.44	0.27	0.09
Interest on Working Capital Loan	0.21	0.23	0.26	0.26	0.26
Net Profit	1.46	2.61	4.67	4.72	4.77
Net cash accruals	2.18	3.33	5.38	5.44	5.49
Principal Repayment	0.55	2.19	2.19	2.19	2.19

**6.1 Estimation of Production Capacity:** Production of Garlic Powder at installed capacity is estimated as below.

Rated processing capacity (tonnes/annum of Garlic bulbs)	30
Recovery of powder from bulbs (%)	80%
Production/annum of garlic powder at installed capacity (tonnes)	24

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

Raw material required at installed capacity (tonnes)	30
Price of garlic bulbs (Rs/tonne)	20000
Expenses on raw materials at installed capacity (Rs)	600000
Add: Expenses on packaging materials, etc @ 20%	120000
Expenses on raw materials & consumables at installed capacity (Rs)	720000

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

Expenses on power

Connected Load (kw)	26
Avg. load factor	70%
Hrs/day	8
Days/annum	300
Annual power consumption (kwh)	43865
Rate per unit (Rs)	5
Expenses on power per annum at installed capacity (Rs)	219324

**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	Self	0	0
Skilled Workers/Machine Operators	4	8000	384000
Sales Staff	1	5000	60000
Helpers	3	4000	144000
Casual labour	6	2500	180000
Expenses on salary in the 1st year (Rs)			768000

**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	5.50	1%	0.06
Plant & Machinery	5.79	1%	0.06
Misc. Fixed Assets	2.00	1%	0.02
Expenses on repair & maintenance in the 1st year (Rs)			0.13

**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	5.50	3.34%	0.18
Plant & Machinery	5.79	7.07%	0.41
Misc. Fixed Assets	2.00	6.23%	0.12
<b>TOTAL</b>			<b>0.72</b>

**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 5 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
Month 1	Opening balance	9.30	8.75	6.57	4.38	2.19
	Repayment	0.00	0.18	0.18	0.18	0.18
	Interest (8%)	0.06	0.06	0.04	0.03	0.01
	Closing balance	9.30	8.57	6.38	4.19	2.01
Month 2	Opening balance	9.30	8.57	6.38	4.19	2.01
	Repayment	0.00	0.18	0.18	0.18	0.18
	Interest	0.06	0.06	0.04	0.03	0.01
	Closing balance	9.30	8.39	6.20	4.01	1.82
Month 3	Opening balance	9.30	8.39	6.20	4.01	1.82
	Repayment	0.00	0.18	0.18	0.18	0.18
	Interest	0.06	0.06	0.04	0.03	0.01
	Closing balance	9.30	8.21	6.02	3.83	1.64
Month 4	Opening balance	9.30	8.21	6.02	3.83	1.64
	Repayment	0.00	0.18	0.18	0.18	0.18
	Interest	0.06	0.05	0.04	0.03	0.01
	Closing balance	9.30	8.02	5.84	3.65	1.46
Month 5	Opening balance	9.30	8.02	5.84	3.65	1.46
	Repayment	0.00	0.18	0.18	0.18	0.18
	Interest	0.06	0.05	0.04	0.02	0.01
	Closing balance	9.30	7.84	5.65	3.47	1.28
Month 6	Opening balance	9.30	7.84	5.65	3.47	1.28
	Repayment	0.00	0.18	0.18	0.18	0.18
	Interest	0.06	0.05	0.04	0.02	0.01
	Closing balance	9.30	7.66	5.47	3.28	1.09
Month 7	Opening balance	9.30	7.66	5.47	3.28	1.09
	Repayment	0.00	0.18	0.18	0.18	0.18
	Interest	0.06	0.05	0.04	0.02	0.01
	Closing balance	9.30	7.48	5.29	3.10	0.91
Month 8	Opening balance	9.30	7.48	5.29	3.10	0.91
	Repayment	0.00	0.18	0.18	0.18	0.18
	Interest	0.06	0.05	0.04	0.02	0.01
	Closing balance	9.30	7.30	5.11	2.92	0.73
Month 9	Opening balance	9.30	7.30	5.11	2.92	0.73
	Repayment	0.00	0.18	0.18	0.18	0.18
	Interest	0.06	0.05	0.03	0.02	0.00
	Closing balance	9.30	7.11	4.92	2.74	0.55

Month 10	Opening balance	9.30	7.11	4.92	2.74	0.55
	Repayment	0.18	0.18	0.18	0.18	0.18
	Interest	0.06	0.05	0.03	0.02	0.00
	Closing balance	9.12	6.93	4.74	2.55	0.36
Month 11	Opening balance	9.12	6.93	4.74	2.55	0.36
	Repayment	0.18	0.18	0.18	0.18	0.18
	Interest	0.06	0.05	0.03	0.02	0.00
	Closing balance	8.94	6.75	4.56	2.37	0.18
Month 12	Opening balance	8.94	6.75	4.56	2.37	0.18
	Repayment	0.18	0.18	0.18	0.18	0.18
	Interest	0.06	0.04	0.03	0.02	0.00
	Closing balance	8.75	6.57	4.38	2.19	0.00
Principal Repayment		0.55	2.19	2.19	2.19	2.19
Interest		0.74	0.62	0.44	0.27	0.09

**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		2.16	2.41	2.66
Bank Loan (60%)		1.29	1.45	1.60
Interest @ 16%		0.21	0.23	0.26

## 7.0 DEBT SERVICE COVERAGE RATIO (DSCR)

		(Rs. in lacs)					
Year		1	2	3	4	5	Total
Profit After Tax (Net Profit)		1.46	2.61	4.67	4.72	4.77	
Depreciation		0.72	0.72	0.72	0.72	0.72	
Interest		0.74	0.62	0.44	0.27	0.09	
Total		2.92	3.95	5.83	5.71	5.59	24.00
Interest		0.74	0.62	0.44	0.27	0.09	
Loan repayment		0.55	2.19	2.19	2.19	2.19	
Total		1.29	2.81	2.63	2.46	2.28	11.47
DSCR		2.27	1.41	2.21	2.32	2.45	

Average DSCR = 2.09

## 8.0 BREAK EVEN POINT (BEP)

		(Rs. in lacs)		
Year		1	2	3
A. Net sales		15.00	18.00	21.00
B. Variable cost				
Raw Materials & Consumables		3.60	4.32	5.04
Utilities		1.10	1.32	1.54
Selling Expenses		0.15	0.18	0.21
Miscellaneous Expenses		0.08	0.09	0.11
Interest on Working Capital Loan		0.21	0.23	0.26
Total variable cost		5.13	6.14	7.15
C. Contribution (A-B)		9.87	11.86	13.85
D. Fixed & Semi-fixed Costs				
Salary		7.68	7.76	7.83
Repair & Maintenance		0.13	0.16	0.19
Interest on Term Loan		0.74	0.62	0.44

Depreciation	0.72	0.72	0.72
Total fixed cost	9.27	9.25	9.19
E. BREAK EVEN POINT	93.92%	78.01%	66.32%
F. BEP at operating capacity	46.96%	46.81%	46.43%
G. Cash BEP	43.32%	43.18%	42.80%

**9.0 INTERNAL RATE OF RETURN (IRR)**

(Rs. in lacs)

Year	0	1	2	3	4	5
CASH OUTFLOW						
Capital Expenditure	13.69	0.00	0.00	0.00	0.00	0.00
Working Capital	0.00	2.16	0.25	0.25	0.00	0.00
Total (A)	13.69	2.16	0.25	0.25	0.00	0.00
CASH INFLOW						
Profit After Tax		1.46	2.61	4.67	4.72	4.77
Add: Depreciation		0.72	0.72	0.72	0.72	0.72
Add: Interest		0.74	0.62	0.44	0.27	0.09
Add: Salvage Value (15%)						2.05
Total (B)	0.00	2.92	3.95	5.83	5.71	7.64
NET FLOW (B-A)	-13.69	0.76	3.70	5.58	5.71	7.64

IRR = 16%

**MACHINERY SUPPLIERS**

- (a) Sejal Enterprises  
No. 181, Shukrawar Peth, Shinde Lane, Pune - 411002, Maharashtra, India
- (b) Blaze Machinery  
Gala No. 3, Dixit Compound, Navapada Lane, Behind Amee Steel, S. V. Road, Ajit Glass, Jogeshwari West, Mumbai - 400 102, Maharashtra, India
- (c) Padmatech Engineering Systems  
Plot No. 219, Sector No.10, P. C. N. T. D. A., Bhosari, Pune - 411 026, Maharashtra, India