

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. Garlic is grown in many states of India, with Madhya Pradesh, Uttar Pradesh, Maharashtra, Haryana and Gujarat being the leading cultivators. 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 last few years.

2.0 PRODUCT

2.1 Applications

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. Garlic powder can be produced in many states of India, but this note considers Gujarat as a preferred location.

2.2 Availability of know-how, Compliances and Quality standards

CFTRI, Mysore, has successfully developed the technical know how. Compliance with the provisions of the PFA Act is mandatory. Quality has to match with IS 5452:1969.

3.0 MARKET POTENTIAL

3.1 Demand and Supply

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.

3.2 Marketing Strategy

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.

4.0 MANUFACTURING PROCESS

It is well established and simple. 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 then powdered in the powdering unit to the required mesh size and packed in airtight containers.

5.0 CAPITAL INPUTS

5.1 Land and Building

A plot of land of around 250 sq.mtrs. with built up area of 125 sq.mtrs. is adequate. Main plant would occupy around 75-80 sq.mtrs. whereas balance constructed area can be utilised for storage and packing. Land may cost Rs. 75,000/- whereas cost of construction would be Rs. 3.15 lacs.

5.2 Machinery

Production capacity of 300 tonnes per year with 2 shift working and 300 working days is contemplated. This would require following machines.

Item	Qty.	Price (Rs.)
Pre-conditioning Machine	1	60,000
Tray drier with 48 trays	1	1,00,000
Husk Remover	1	35,000
Powdering Unit- 75 Kgs. Capacity	1	1,50,000
Air-classifier	1	30,000
Weighing Scale/balances, sealing machine, testing instruments, aluminium utensils, plastic crates etc.	--	70,000
	Total	4,45,000

5.3 Miscellaneous Assets

Some other assets like furniture & fixtures, storage racks, packing tables, exhaust fans etc. would cost Rs. 75,000/-.

5.4 Utilities

Power requirement shall be 35 HP whereas daily water requirement would be 1500 ltrs.

5.5 Raw and Packing Material

The all-important raw material would be fully grown and matured garlic bulbs. Gujarat being one of the leading producers of garlic, with adequate prior arrangements, procurement would not be a problem. Packing materials like containers, polythene bags, corrugated boxes, BOPP tape, labels etc. shall be required.

6.0 MANPOWER REQUIREMENTS

Particulars	Nos.	Monthly Salary (Rs.)	Total Monthly Salary (Rs.)
Skilled Workers	2	2,500	5,000
Semi-skilled Workers	2	1,750	3,500
Helpers	8	1,250	10,000
Salesman	1	2,500	2,500
		Total	21,000

7.0 TENTATIVE IMPLEMENTATION SCHEDULE

Activity	Period (in months)
Application and sanction of loan	2
Site selection and commencement of civil work	1
Completion of civil work and placement of orders for machinery	4
Erection, installation and trial runs	1

8.0 DETAILS OF THE PROPOSED PROJECT

8.1 Land and Building

Particulars	Area (Sq.Mtrs)	Cost (Rs.)
Land	250	75,000
Building	125	3,15,000
	Total	3,90,000

8.2 Machinery

Total cost of machinery is estimated to be Rs. 4.45 lacs as explained earlier.

8.3 Miscellaneous Assets

An expenditure of Rs. 75,000 would take care of other assets as stated before.

8.4 Preliminary & Pre-operative Expenses

Pre-production expenses like registration, establishment, administrative and travelling expenses, interest during implementation, trial runs etc. would require a provision of Rs. 1.00 lac.

8.5 Working Capital Requirements

At 65% capacity utilisation in the first year, the working capital needs would be as under:

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Raw and Packing Materials	½ Month	30%	1.35	0.95	0.40
Stock of Finished Goods	½ Month	25%	1.60	1.20	0.40
Receivables	½ Month	25%	2.25	1.70	0.55
Working Expenses	1 Month	100%	0.75	--	0.75
		Total	5.95	3.85	2.10

8.6 Cost of the Project & Means of Financing

(Rs. in lacs)

Item	Amount
Land and Building	3.90
Machinery	4.45
Miscellaneous Assets	0.75
P&P Expenses	1.00
Contingencies @ 10% on Land and Building and Plant & Machinery	0.85
Working Capital Margin	2.10
Total	13.05
Means of Finance	
Promoters' Contribution	3.95
Term Loan from Bank/FI	9.10
Total	13.05
Debt Equity Ratio	2.30 : 1
Promoters' Contribution	30%

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.

9.0 PROFITABILITY CALCULATIONS

9.1 Production Capacity & Build-up

As against the rated annual capacity of 300 tonnes, capacity utilisation in the first year is assumed to be 65% and thereafter it is restricted to 80%.

9.2 Sales Income at 100%

Assuming selling price of Rs. 1.25 lac per ton, annual sales at 100% would be Rs. 93.75 lacs.

9.3 Raw & Packing Materials Required at 100%

(Rs. in lacs)

Product	Qty. (Tonnes)	Price/Ton (Rs.)	Value
Garlic Bulbs	300	20,000	60.00
Packing Materials @ Rs.3000/Ton	--	--	1.80
		Total	61.80

9.4 Utilities

Annual cost of power and water at 100% would be Rs. 1.50 lacs.

9.5 Selling Expenses

A sufficient provision has been made every year to take care of transportation, selling commission, publicity etc.

9.6 Interest

Interest on term loan of Rs. 9.10 lacs is calculated @ 12% per annum assuming complete repayment in 5 years including a moratorium period of 1 year and on working capital from bank, it is computed @ 14% per annum.

9.7 Depreciation

It is calculated @ 10% on building and 20% on machinery and miscellaneous assets on WDV basis.

10.0 PROJECTED PROFITABILITY

(Rs. in lacs)

No.	Particulars	1st Year	2nd Year
A	Installed Capacity	--- 300 Tonnes ---	
	Capacity Utilisation	65%	80%
	Sales Realisation	60.95	75.00
B	Cost of Production		
	Raw and Packing Materials	40.20	49.44
	Utilities	0.90	1.12
	Salaries	2.50	3.00
	Stores and Spares	0.48	0.60
	Repairs & Maintenance	0.60	0.72
	Selling Expenses	10.80	13.15
	Administrative Expenses	0.60	0.85
	Total	56.12	68.88
C	Profit before Interest & Depreciation	4.83	6.12
	Interest on Term Loan	1.00	0.82
	Interest on Working Capital	0.54	0.68
	Depreciation	1.36	1.11
	Profit before Tax	1.93	3.51
	Income-tax @ 20%	0.39	0.71
	Profit after Tax	1.54	2.80
	Cash Accruals	2.90	3.91
	Repayment of Term Loan	--	2.10

11.0 BREAK-EVEN ANALYSIS

(Rs. in lacs)

No	Particulars	Amount	
[A]	Sales		75.00
[B]	Variable Costs		
	Raw and Packing Materials	49.44	
	Utilities (70%)	0.79	
	Salaries (70%)	2.10	
	Stores & Spares	0.60	
	Selling Expenses (70%)	9.20	
	Admn Expenses (50%)	0.43	
	Interest on WC	0.68	63.24
[C]	Contribution [A] - [B]		11.76
[D]	Fixed Cost		7.25
[E]	Break-Even Point [D] ÷ [C]		61%

12.0 [A] LEVERAGES

Financial Leverage

= EBIT/EBT

= 3.47 ÷ 1.93

= 1.80

Operating Leverage

= Contribution/EBT

= 9.87 ÷ 1.93

= 5.11

Degree of Total Leverage

= FL/OL

= 1.80 ÷ 5.11

= 0.35

[B] Debt Service Coverage Ratio (DSCR)

(Rs. in lacs)

Particulars	1st Yr	2nd Yr	3rd Yr	4th Yr	5th Yr
Cash Accruals	2.90	3.91	4.27	4.51	4.75
Interest on TL	1.00	0.82	0.57	0.32	0.20
Total [A]	3.90	4.73	4.84	4.83	4.95
Interest on TL	1.00	0.82	0.57	0.32	0.20
Repayment of TL	--	2.25	2.25	2.25	2.35
Total [B]	1.00	3.07	2.82	2.57	2.50
DSCR [A] ÷ [B]	3.90	1.59	1.78	1.97	2.10
Average DSCR	----- 2.26 -----				

[C] Internal Rate of Return (IRR)

Cost of the project is Rs. 13.05 lacs.

(Rs. in lacs)

Year	Cash Accruals	16%	18%	20%
1	2.90	2.50	2.46	2.42
2	3.91	2.91	2.81	2.71
3	4.27	2.74	2.60	2.47
4	4.51	2.49	2.33	2.17
5	4.75	2.26	2.08	1.91
6	4.98	2.04	1.84	1.67
	25.32	14.94	14.12	13.35

The IRR is around 19%.

Some of the suppliers are

1. Forsberg Agritech (I) Pvt Ltd, Makarpura, Vadodara
2. Parmar Engg. Works, Jasdan, Gujarat
3. Sahyog Steel Fabrications, 28, Bhojrajpara, Gondal-360311. Tel No. 224075.
4. Septu (India) Pvt. Ltd., Delhi-Jaipur Highway, PO Begampur-Khatola, Gurgaon-122001, Tel. No.: 2371354, 2215510, Fax: 2322997, 2373010