

GARLIC POWDER



QUALITY AND STANDARDS : As per AGMARK standards

PRODUCTION CAPACITY : 42 tpa

1.0 PRODUCT AND ITS APPLICATIONS



Garlic is used as a condiment in various food preparations and also serves as a carminative and gastric stimulant in a number of medicinal preparations. As a condiment, it is used for flavouring tomato ketchup, sauce, salad dressings, stews, spaghetti, chutney, pickles etc. It aids in digestion and absorption of food, possesses anthelmintic and antiseptic properties and is, therefore used in a number of therapeutical preparations.

2.0 MARKET POTENTIAL

Garlic is grown abundantly in India and is consumed as such. Not much effort has been made to produce dehydrated garlic and garlic powder with the result that 20% of the crop is wasted due to respiration, microbial spoilage during storage. Only recently India has started producing small quantities for exports.



3.0 BASIS AND PRESUMPTION

- The unit proposes to work at least 300 days per annum on single shift basis.
- The unit can achieve its full capacity utilization during the 3rd year of operation.
- The wages for skilled workers is taken as per prevailing rates in this type of industry.
- Interest rate for total capital investment is calculated @ 12% per annum.
- The entrepreneur is expected to raise 20-25% of the capital as margin money.
- The unit proposes to construct own building as per F.P.O. specifications.
- Costs of machinery and equipment are based on average prices enquired from machinery manufacturers.

4.0 IMPLEMENTATION SCHEDULE

Project implementation will take a period of 8 months. Break-up of the activities and relative time for each activity is shown below:

❖ Scheme preparation and approval	:	01 month
❖ SSI provisional registration	:	1-2 months
❖ Sanction of financial supports etc.	:	2-5 months
❖ Installation of machinery and power connection	:	6-8 months
❖ Trial run and production	:	01 month

5.0 TECHNICAL ASPECTS

5.1 Raw Material

Garlic is grown in abundance in India. The important garlic producing states are Madhya Pradesh, Gujarat, Maharashtra, Uttar Pradesh and Haryana.

5.2 Process of Manufacture

The conventional technique of making garlic powder consists of removing the outer papery skin of the garlic bulb, separation and peeling of cloves, dehydrating and powdering. This technique is tedious and time consuming and hence costly.

An improved process has been developed by CFTRI for the manufacture of garlic powder. The garlic bulbs are scrubbed manually under mild pressure to remove the papery skin and the cloves are separated. They are conditioned and dehydrated. Husk is removed. Dried cloves are powdered to a desired mesh size and packed in air-tight containers/unit packages. Alternatively, the product is marketed in the form of flakes, for specific uses.

5.3 Quality Control and Standards : AGMARK specifications

6.0 POLLUTION CONTROL

There is no major pollution problem associated with this industry except for disposal of waste which should be managed appropriately. The entrepreneurs are advised to take "No Objection Certificate" from the State Pollution Control Board.

7.0 ENERGY CONSERVATION

The fuel for the steam generation in the boiler is coal or LDO depending upon the type of boiler. Proper care should be taken while utilising the fuel for the steam production. There should be no leakage of steam in the pipe lines and adequate insulation should be provided.

8.0 PRODUCTION CAPACITY

Quantity	:	42 MT
Value	:	Rs. 63 lakh
Installed capacity	:	0.2 tpd or 60 tpa
Working days	:	300/annum
Optimum capacity utilisation	:	70%
Manpower	:	21

Utilities

Motive Power	:	30 kW
Water	:	3 kL/day



9.0 FINANCIAL ASPECTS

9.1 Fixed Capital

9.1.1 Land & Building Amount (Rs. lakh)

Land 600 sq.m.	:	0.90
Built up Area 150 sq. m.	:	4.50

Total cost of Land and Building	:	5.40

9.1.2 Machinery and Equipment

Description		Amount (Rs. lakh)
Pre-conditioning equipment ,Drier, Husk Remover, Air classifier, Powdering unit Flaker	:	6.00
Erection & electrification @10% cost of machinery & equipment	:	0.60
Office furniture & fixtures	:	0.40
Total :		----- 7.00

9.1.3 Pre-operative Expenses

Consultancy fee, project report, deposits with electricity department etc.	:	0.80
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9.1.4 Total Fixed Capital 13.20 (9.1.1+9.1.2+9.1.3)

9.2 Recurring expenses per annum

9.2.1 Personnel

Designation	No.	Salary Per month	Amount (Rs.lakh)
Factory Manager	1	12000	1.44
Supervisor	2	9000	2.16
Office Assistant	2	7000	1.68
Mechanic	1	6000	0.72
Skilled workers	3	2000	0.72
Unskilled workers	12	1500	2.16
			8.88
Perquisites @15%			1.32

Total :	21		10.20

9.2.2 Raw Material including packaging materials

Particulars	Qty.(MT)	Rate	Amount (Rs. lakh)
Garlic	140	20,000	28.00
Packaging material		LS	10.00

Total:			38.00

9.2.3 Utilities

	Amount (Rs. lakh)
Power	1.25
Water	0.20

Total:	1.45

9.2.4 Other Contingent Expenses

	Amount (Rs. lakh)
Repairs and maintenance@10%	0.70
Consumables & spares	0.20
Transport & Travel	0.25
Publicity	0.40
Postage & stationery	0.15
Telephone	0.13
Insurance	0.07

Total:	1.90

9.2.5 Total Recurring Expenditure

(9.2.1+9.2.2+9.2.3+9.2.4)	51.55
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9.3 Working Capital

Recurring Expenditure for 3 months	12.90
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9.4 Total Capital Investment

	Amount (Rs. lakh)
Fixed capital (Refer 9.1.4)	13.20
Working capital (Refer 9.3)	12.90

Total:	26.10

10.0 FINANCIAL ANALYSIS

10.1 Cost of Production (per annum)

	Amount (Rs. lakh)
Recurring expenses (Refer 9.2.5)	51.55
Depreciation on building @5%	00.23
Depreciation on machinery @10%	00.66
Depreciation on furniture @20%	00.08
Interest on Capital Investment @12%	03.13

Total:	55.65

10.2 Sale Proceeds (Turnover) per year

Item	Qty. (MT)	Rate per MT	Amount (Rs.lakh)
Garlic powder Packed in 1kg PET jars	42	1,50,000	63.00

10.3 Net Profit per year

= Sales - Cost of production
= 63.00 - 55.65
= Rs. 7.35

10.4 Net Profit Ratio

= $\frac{\text{Net profit} \times 100}{\text{Sales}}$
= $\frac{7.35 \times 100}{63}$
= 11.7%

10.5 Rate of Return on Investment

= $\frac{\text{Net profit} \times 100}{\text{Capital Investment}}$
= $\frac{7.35 \times 100}{26.1}$
= 28.2%

10.6 Annual Fixed Cost

	Amount (Rs. Lakh)
All depreciation	0.97
Interest	3.13
40% of salary, wages, utility, contingency	5.43
Insurance	0.07
Total:	9.60

10.7 Break even Point

= $\frac{\text{Annual Fixed Cost} \times 100}{\text{Annual Fixed Cost} + \text{Profit}}$
= $\frac{9.6 \times 100}{9.6 + 7.35}$
= 960 / 16.95
= 57%

11.0 ADDRESSES OF MACHINERY AND EQUIPMENT SUPPLIERS

Frigmaires Engineers
Bharat House
104, Bombay Samachar Marg,
Mumbai – 400 023

Macneil & Magor Ltd.
Engineering Division
2, Fairlie Place,
Kolkata – 700 001

Mysore Precision Engineers
C-123/124, Industrial Estate
Yadavagiri
Mysore – 570 020

Siddivinayaka Machinery and Equipment
Sidvin House, Swimming Pool Cross Road,
Saraswathipuram
Mysore – 570 009