

PROJECT REPORT

Of

GARLIC POWDER & FLAKES

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding **Garlic Powder and Flakes making Unit**.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]



Lucknow Office: Sidhivinayak Building ,
27/1/B, Gokhley Marg, Lucknow-226001

Delhi Office : Multi Disciplinary Training
Centre, Gandhi Darshan Rajghat,
New Delhi 110002

Email : info@udyami.org.in
Contact : +91 7526000333, 444, 555

PROJECT REPORT
ON
GARLIC FLAKES AND POWDER
(DEHYDRATED)



Garlic is most commonly used as a condiment and for flavouring and seasoning of food products such as soups, dals, pickles, etc. It is also used for flavouring vinegar or oil for dressing. Incorporation of garlic in the diet at moderate levels is likely to shift the balance of the microflora in the intestines in favour of lactic organisms, which generally have a favourable effect on the absorption of minerals present in the diet.

Garlic has a pungent smell due to the presence of unsaturated sulphides. Several methods have been patented for the deodourization of garlic. An odour-free strain of garlic has been developed in Japan by continuous selection breeding. This strain tastes and smells like garlic until it is eaten, when for still unknown reasons, the odour disappears. This mutant strain of garlic does not revert to its original "smelly" strain even after six generations.

Garlic is endowed with several medicinal properties. It is stimulant, diaphoretic, expectorant, diuretic and tonic. It is rubefacient when applied externally. It is used as an anthelmintic and emmenagogue. The juice of garlic is used for various ailments of the stomach including amoebic dysentery. It is also used as an anti-tubercular drug, and in the treatment of epilepsy. It is reported to be anticholeric. Garlic reduces the blood sugar levels. It is an anti-fertility drug showing oxytocic activity.

B.I.S. SPECIFICATION

IS ----- 5452 (1969) Dehydrated Garlic (Reaff.1987)

MARKET SURVEY

1. USERS

Homes, Restaurants, Hotels & Institutions, food processing industries, snacks manufacturers.

2. SALE CHANNELS & METHODS

Selling would be made direct to wholesalers or to distributors or to general merchants.

3. GEOGRAPHICAL EXTENT OF MARKET

A. DOMESTIC: Since these products are used in homes and wherever food is served or prepared, the geographical extent of the market would be nationwide. The product is well packaged and cost of shipping would not be prohibitive in comparison with the sale value of the product.

B. EXPORT MARKET: These products are sold world wide and this industry should not experience great difficulty in selling its product in the export market. As of a higher quality product is required to be exported.

4. COMPETITION:-

A. DOMESTIC: Since a sizable investment is required to produce this product, the principal competition that could be encountered would be from other local plants producing the same products.

B. EXPORT MARKET: If the garlicks are available locally & this plant is well managed and efficiently operated, it should have little difficulty in competing with other manufacturing.

5. MARKET NEEDED FOR PLANT

The market needed for this industry will depend to some extent on the per capita income. Under normal conditions, it is estimated that the population of the million would consume the output of this plant. However, the plant should experience little difficulty in exporting any surplus production.

Garlic powder is one of the important ingredients of spices industries. It comes under the category of seed spices. So now we are describing here about the spices industries market position.

Spices are used worldwide to add taste and flavor to the food. They are also known as appetizers and were considered essential in the culinary skill. Spices add a tang of flavor to otherwise insipid food stuff and act as flavor disguisers. Some of the spices possess anti oxidant properties. Some spices are also used in pharmaceuticals cosmetics and perfumery industries. India is known to be the home of spices. Indian spices famous for aroma and flavor have established their own importance in the domestic and international markets. India, being the traditional home of spices, almost all known spices namely, pepper, cardamom, chillies, ginger, turmeric, saffirb are produced in the country.

Because of the importance of Indian spices in international market this study is an attempt to analyse the trend in production, export market and future prospect of spices in Indian domestic as well as in export market.

MANUFACTURING PROCESS

The manufacturing process of dehydrated garlic flakes requires the following operations.

1. Washing
2. Peeling
3. Sulphitation
4. Packaging

WASHING

The fresh garlic as obtained from the vegetable market includes many contaminants like soil, leaves of other vegetables etc. It is very essential to wash the garlic purchased from the market before proceeding to any other process. The washing operation is performed by water spraying or in rotary washers.

PEELING

The outer leaves of garlic after washing are removed by peeling operation. Water sprayers used in first step assist peeling besides loosening the dirt. Peeling may be effected by steaming, radiant heat, or by heating over gas flames & tumbling in washer flame. The last technique is used for peeling of onion & garlics. In small scale units, hand operated peeling machine are used for removing the outer layers of garlic. The peeling process is again followed by the washing by spraying water.

SULPHITATION

Prior to dehydration, another operation is sometimes performed with certain limitations. This process is known as sulphitation. A small amount of potassium metabisulfite solution is prepared and sliced garlic are dipped in it for 2-3 minutes. Then slices are removed from solution. Sulphitation greatly prolongs the storage life of vegetables, garlics & onions, but treatment reduces their pungency. Sulphitation also protects the garlic and other vegetables against scorching damage during dehydration.

DEHYDRATION

The modern process of dehydration consists of the removal of moisture from garlic by the application of heat usually in the presence of controlled flow of air. If the air used in drying garlic is allowed to escape into the atmosphere after its passage through the dehydrator, a great deal of heat is lost. The garlic may become overdried if the spent air is recirculated in larger quantities. This condition is avoided to a large extent if the relative humidity of the air is increased sufficiently, which can be done to a large degree by return of some of the spent air. Because of these facts, it is customary in modern dehydrators to provide for recirculation of a portion of air used in drying. The air in the dehydrator should be so furnished as to be applied to the product to be dried in an evenly distributed manner. By placing baffles on the walls of the dehydrator or on the trolleys it is possible to force the air into the desired channels. Various types of dehydrators are available commercially and used for the dehydration techniques :

1. Kiln Drier.
2. Tower or stack Drier.

3. Oregon Tunnel Drier.
4. Vacuum Dehydrator.
5. Forced draft tunnel dehydrator.
6. Circulating Air Blast type funnels dehydrator.

Various types of tray dryers are in use which vary greatly in size design and materials of the construction. The trays used for garlic dehydration are of 6' x 3' size with wooden slot bottoms. The tray load is about 1 1/4 Lb/sq.ft. Garlic is dried to 8% moisture in dehydrators. The drying is completed in bins at 45-50°C to obtain moisture less than 6.5%.

Pulverising:- The dried flakes are pulverised to required mesh size and send for packaging.

PACKAGING:-

The packing of garlic flakes is done completely in hermetically sealed container, so that no air from outside will go into the package and no air from inside will come out of the package. The product will remain good for a longer period.

STORAGE:-

The product after packaging in hermetically sealed container or Nitrogen gas flushed pouches, is now stored at low temperature.(10-12°C) to prevent the product from non-enzymatic browning reaction. The product will remain good in low temperature storage conditions.

Tunnel Driers :-

These driers are the most common in use for dehydrating fruits and vegetables. They consist of tunnels 10 to 20 m long into which trucks containing the trays of food are placed. Hot air is blown across the trays. Production is scheduled so that when a truck of finished product is removed from one end of the tunnel, a truck of fresh produce is put in the other end.

Air movement may be in the same direction as the movement of the product (parallel flow). This has the advantage that the hottest air contacts the wettest product, therefore hotter air can be used. On the other hand, the air at the outlet end becomes cool and moisture laden and the final product may not be sufficiently dry.

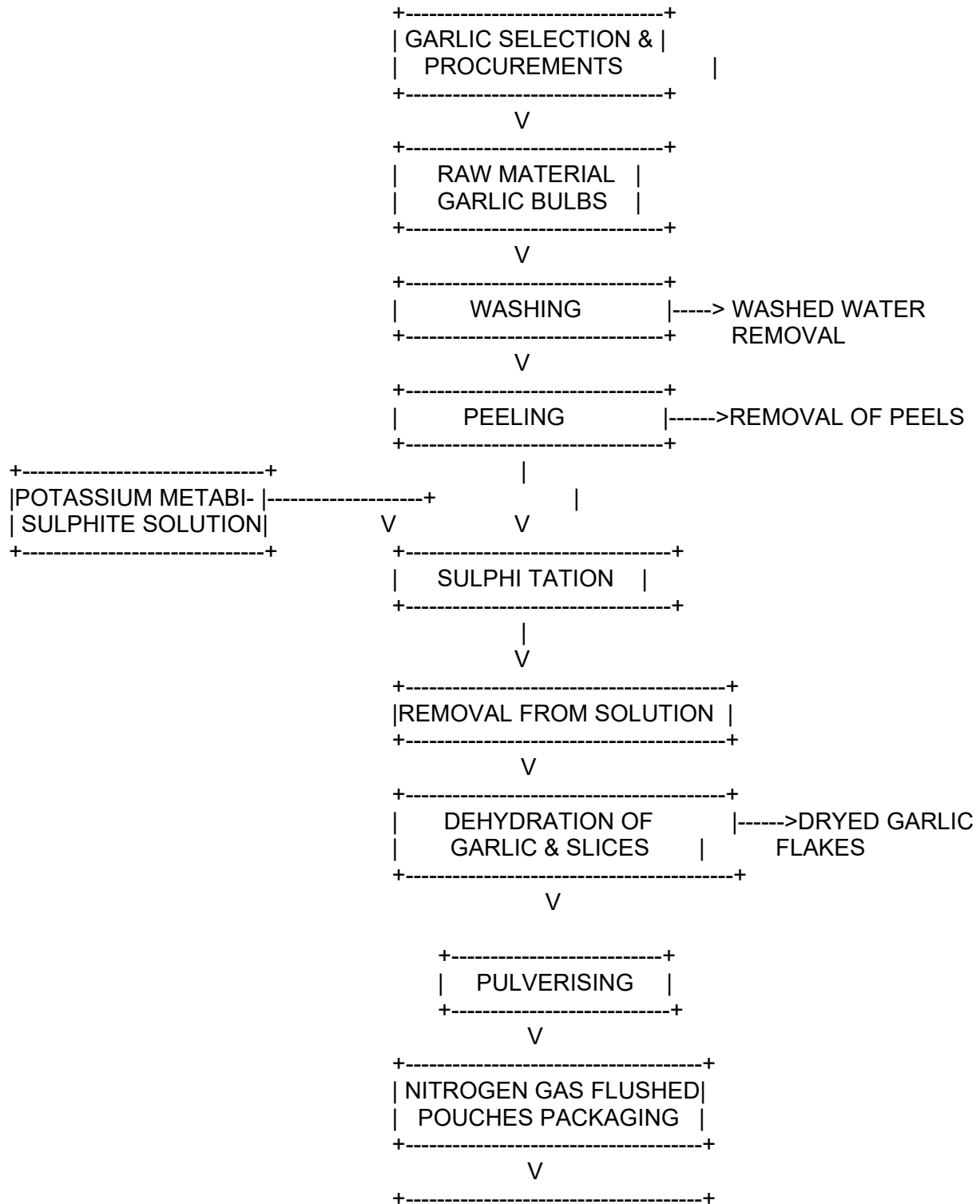
The air movement may be in the opposite direction of the material flow. In this case the hot dry air contacts the driest product first so that a very dry product can be obtained. Care must be taken not to overload the drier as the moist charge may stand in the warm, moisture laden air too long without being dried to any extent. This would allow time for product spoilage. On the other hand, the dry product should not be left in the drier too long since it is in contact with the hottest air and could become overheated. In general, the counter flow tunnel uses less heat and produces a drier product than a parallel flow tunnel.

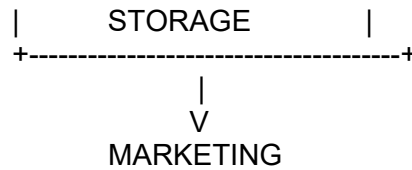
In some cases the two types of tunnels are combined into one unit. The product is first placed in a parallel tunnel to take advantage of the high initial rate of drying. It can then be placed in a counter current tunnel to get a very dry end product.

In operation of these tunnels, the drying conditions are not constant. When a fresh tray of material is put into the tunnel, the air which reaches the air-exit-end of the tunnel may be cooler and wetter at the beginning of the cycle than at the end of the cycle. There will be a rise in the air-inlet-end as it is dried.

In some tunnels a moving conveyor is used instead of trucks and trays. This has the advantage of reducing labor cost and of having more uniform drying conditions. However, a larger installation and investment are required.

FLOW DIAGRAM FOR GARLIC FLAKES





STATES WHICH SUPPLY RAW MATERIAL (GARLIC BULB)

1. GUJRAT.
2. MADHYA PRADESH.
3. MAHARASHTRA.
4. ORISSA.

Entrepreneurs can get the Garlic from the above states of India.

PLANT ECONOMICS

Rated Plant capacity	=	0.50 TON/day
	=	300.00 TON/annumBasis
No. of working days	=	25 days/month
	=	300 days/annum
No. of shifts	=	1 per day
One shift	=	8 hours

FINANCIAL ASPECTS :

PROJECT AT A GLANCE

- 1 Name of the Entrepreneur : XXXXXXXX
- 2 Constitution (legal Status) : XXXXXXXX
- 3 Father's/Spouce's Name : XXXXXXXX
- 4 Unit Address : XXXXXXXX
- Taluk/Block: XXXXX
- District : XXXXX State:
- Pin: XXXXX
- E-Mail : XXXXX
- Mobile : XXXXX
- 5 Product and By Product : **Garlic Powder and Flakes**
- 6 Name of the project / business activity proposed **Garlic Powder and Flakes**
- 7 Cost of Project : Rs25.00lac
- 8 Means of Finance
- Term Loan Rs.16.18 Lacs
- KVIC Margin Money - As per Project Eligibility
- Own Capital Rs.2.5 Lacs
- Working Capital Rs.6.32 Lacs
- 9 Debt Service Coverage Ratio : 4.21
- 10 Pay Back Period : 5 Years
- 11 Project Implementation Period : 8 Months
- 12 Break Even Point : 34%
- 13 Employment : 12 Persons
- 14 Power Requirement : 55.00 HP
- 15 Major Raw materials : Garlic bulbs
- 16 Estimated Annual Sales Turnover : 153.90 Lacs
- 16 Detailed Cost of Project & Means of Finance

COST OF PROJECT

(Rs. In Lacs)

Particulars	Amount
Land 10000 Sqft	Owned
Building /shed (8000 Sq Ft)	3.00
Plant & Machinery	13.84
Furniture & Fixtures	0.54
Pre-operative Expenses	0.60
Working Capital Requirement	7.02
Total	24.99

MEANS OF FINANCE

Particulars	Amount
Own Contribution @10%	2.50
Term Loan	16.18
Workign Capital Finance	6.32
Total	25.00

Beneficiary's Margin Money **General** **Special**
 (% of Project Cost) 10% 5%

PLANT & MACHINERY

PARTICULARS	QTY.	RATE	AMOUNT IN RS.
Rotary vegetable washing m/c. with drum length 8' waving overall length 9.3', width 3.3' height 6' equipped with jets spray arrangement. Size of water pipe is 1' with 1 H.P. motor Capacity (approx.) : 2/3 tons/hour	1		100,000.00
Washing Tank (PVC sintex tank rectangular type) Cap: 2 Tons	1		13,000.00
Blanching Equipment blanching tank made up of 16 swg with smooth welding water inlet & overflow Contd. outlet. Fitted with S.S. tubing provided with steam inlet socket & outlet valve. False bottom Contd. of s.s. size:24'x24'x24' with suitable M.S. stand, with 3 perforated	2		35,000.00
Lye peeling equipment: consisting of three tanks made of S.S. of the size 2'x2' mounted on stand first tank with heating coil with 3 baskets of stainless steel	1		65,000.00
Working table stainless steel top with adjustable legs approx. Size : 3'x8'	1		30,000.00
Weighing balance (Size: 100 - 500 Kgs.)	1		30,000.00
Tunnel dryer (Continuous perforated S.S. belt type) fitted with air blower heating elements & all accessories (Length 30'x breath 8'x height 10')	1		475,000.00
Pulveriser with 15 H.P. motor and all accessories Cap: 200 - 300 Kgs/hr.	2		100,000.00
Automatic weighing, pouch filling and sealing machine with all accessories	LS		380,000.00
Miscellaneous tools, jigs, fixtures cleaning equipments lab equipments water arrangement	LS		156,000.00
			1,384,000.00

PROJECTED CASH FLOW STATEMENT

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
<u>SOURCES OF FUND</u>					
Share Capital	2.50	-	-	-	-
Reserve & Surplus	11.80	14.67	18.87	22.87	26.64
Depriciation & Exp. W/off	2.40	2.09	1.79	1.54	1.32
Increase in Cash Credit	6.32	-	-	-	-
Increase In Term Loan	16.18	-	-	-	-
Increase in Creditors	5.72	7.62	1.91	1.91	1.91
Increase in Provisions	0.36	0.04	0.04	0.04	0.05
TOTAL :	45.28	24.41	22.60	26.35	29.91
<u>APPLICATION OF FUND</u>					
Increase in Fixed Assets	17.38	-	-	-	-
Increase in Stock	9.15	1.52	1.52	1.52	1.52
Increase in Debtors	3.59	0.79	0.63	0.63	0.63
Increase in Deposits & Adv	2.50	0.25	0.28	0.30	0.33
Repayment of Term Loan	-	4.05	4.05	4.05	3.12
Taxation	1.18	1.47	3.77	4.57	5.33
TOTAL :	33.80	8.07	10.25	11.08	10.94
Opening Cash & Bank Balance	-	11.48	27.82	40.17	55.45
Add : Surplus	11.48	16.34	12.35	15.27	18.97
Closing Cash & Bank Balance	11.48	27.82	40.17	55.45	74.42

PROJECTED BALANCE SHEET

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
<u>SOURCES OF FUND</u>					
Capital Account	2.50	2.50	2.50	2.50	2.50
Retained Profit	10.62	23.82	38.92	57.21	78.52
Term Loan	16.18	12.14	8.09	4.05	0.92
Cash Credit	6.32	6.32	6.32	6.32	6.32
Sundry Creditors	5.72	13.34	15.24	17.15	19.05
Provisions & Other Liab	0.36	0.40	0.44	0.48	0.53
TOTAL :	41.70	58.51	71.51	87.70	107.84
<u>APPLICATION OF FUND</u>					
Fixed Assets (Gross)	17.38	17.38	17.38	17.38	17.38
Gross Dep.	2.40	4.49	6.28	7.81	9.13
Net Fixed Assets	14.98	12.89	11.10	9.57	8.25
Current Assets					
Sundry Debtors	3.59	4.38	5.01	5.64	6.27
Stock in Hand	9.15	10.67	12.20	13.72	15.25
Cash and Bank	11.48	27.82	40.17	55.45	74.42
Deposits & Advances	2.50	2.75	3.03	3.33	3.66
TOTAL :	41.70	58.51	71.51	87.70	107.84
	-	-	-	-	-

PROJECTED PROFITABILITY STATEMENT

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
<u>A) SALES</u>					
Gross Sale	153.90	187.65	214.65	241.65	268.65
Total (A)	153.90	187.65	214.65	241.65	268.65
<u>B) COST OF SALES</u>					
Raw Mateiral Consumed	114.30	133.35	152.40	171.45	190.50
Elecricity Expenses	4.73	5.51	6.30	7.09	7.88
Repair & Maintenance	-	1.88	2.15	2.42	2.69
Labour & Wages	8.98	9.87	10.86	11.95	13.14
Depriciation	2.40	2.09	1.79	1.54	1.32
Consumables,packaging and Other Expenses	7.70	9.38	10.73	12.08	13.43
Cost of Production	138.10	162.08	184.23	206.52	228.96
Add: Opening Stock /WIP	-	6.48	7.56	8.64	9.72
Less: Closing Stock /WIP	6.48	7.56	8.64	9.72	10.80
Cost of Sales (B)	131.62	161.00	183.15	205.44	227.88
C) GROSS PROFIT (A-B)	22.28	26.65	31.50	36.21	40.77
	14%	14%	15%	15%	15%
D) Bank Interest (Term Loan)	1.40	1.69	1.22	0.76	0.30
Bank Interest (C.C. Limit)	0.73	0.73	0.73	0.73	0.73
E) Salary to Staff	5.28	5.81	6.39	7.03	7.73
F) Selling & Adm Expenses Exp.	3.08	3.75	4.29	4.83	5.37
TOTAL (D+E)	10.48	11.97	12.63	13.34	14.13
H) NET PROFIT	11.80	14.67	18.87	22.87	26.64
I) Taxation	1.18	1.47	3.77	4.57	5.33
J) PROFIT (After Tax)	10.62	13.21	15.10	18.29	21.31

COMPUTATION OF MANUFACTURING OF Garlic Powder and Flakes

Items to be Manufactured

Garlic Powder and Flakes

Manufacturing Capacity per day	-	0.50	MT
	-		
No. of Working Hour		8	
No of Working Days per month		25	
No. of Working Day per annum		300	
Total Production per Annum		150.00	MT
Year		Capacity	MT
		Utilisation	
IST YEAR		60%	90
IIND YEAR		70%	105
IIIRD YEAR		80%	120
IVTH YEAR		90%	135
VTH YEAR		100%	150

COMPUTATION OF RAW MATERIAL

Item Name		Quantity of Raw Material	Recovery	Unit Rate of /MT	Total Cost Per Annum (100%)
	100%	MT			
Garlic bulbs		750.00	100.00%	25,000.00	18,750,000.00
Potassium metabisulphite					50,000.00
Packaging materials, printed polyethene pouches, adhesives tapes, lables, cartons, etc.					250,000.00
		-		-	-

Total (Rounded off in lacs)

19,050,000.00

Annual Consumption cost

(In Lacs)

190.50

Raw Material Consumed	Capacity Utilisation	Amount (Rs.)
IST YEAR	60%	114.30
IIND YEAR	70%	133.35
IIIRD YEAR	80%	152.40
IVTH YEAR	90%	171.45
VTH YEAR	100%	190.50

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
<u>Finished Goods</u>					
(15Days requirement)	6.48	7.56	8.64	9.72	10.80
<u>Raw Material</u>					
(7Days requirement)	2.67	3.11	3.56	4.00	4.45
Closing Stock	9.15	10.67	12.20	13.72	15.25

COMPUTATION OF WORKING CAPITAL REQUIREMENT

Particulars			Total
			Amount
Stock in Hand			9.15
Sundry Debtors			3.59
		Total	12.74
Sundry Creditors			5.72
Working Capital Requirement			7.02
Margin			0.70
Working Capital Finance			6.32

BREAK UP OF LABOUR

Particulars		Wages	No of	Total
		Per Month	Employees	Salary
Supervisor Food technologist		15,000.00	1	15,000.00
Skilled Worker		10,000.00	4	40,000.00
Unskilled Worker		7,000.00	4	28,000.00
				68,000.00
Add: 10% Fringe Benefit				6,800.00
Total Labour Cost Per Month				74,800.00
Total Labour Cost for the year (In Rs. Lakhs)			9	8.98

BREAK UP OF SALARY

Particulars		Salary	No of	Total
		Per Month	Employees	Salary
Accountant		10,000.00	1	10,000.00
Sales		15,000.00	2	30,000.00
Total Salary Per Month				40,000.00
Add: 10% Fringe Benefit				4,000.00
Total Salary for the month				44,000.00
Total Salary for the year (In Rs. Lakhs)			3	5.28

COMPUTATION OF DEPRECIATION

Description	Land	Building/shed	Plant & Machinery	Furniture	TOTAL
Rate of Depreciation		10.00%	15.00%	10.00%	
Opening Balance	Leased	-	-	-	-
Addition	-	3.00	13.84	0.54	17.38
	-	3.00	13.84	0.54	17.38
Less : Depreciation	-	0.30	2.08	0.03	2.40
WDV at end of Ist year	-	2.70	11.76	0.51	14.98
Additions During The Year	-	-	-	-	-
	-	2.70	11.76	0.51	14.98
Less : Depreciation	-	0.27	1.76	0.05	2.09
WDV at end of IInd Year	-	2.43	10.00	0.46	12.89
Additions During The Year	-	-	-	-	-
	-	2.43	10.00	0.46	12.89
Less : Depreciation	-	0.24	1.50	0.05	1.79
WDV at end of IIIrd year	-	2.19	8.50	0.42	11.10
Additions During The Year	-	-	-	-	-
	-	2.19	8.50	0.42	11.10
Less : Depreciation	-	0.22	1.27	0.04	1.54
WDV at end of IV year	-	1.97	7.22	0.37	9.57
Additions During The Year	-	-	-	-	-
	-	1.97	7.22	0.37	9.57
Less : Depreciation	-	0.20	1.08	0.04	1.32
WDV at end of Vth year	-	1.77	6.14	0.34	8.25

REPAYMENT SCHEDULE OF TERM LOAN

11.5%

Year	Particulars	Amount	Addition	Total	Interest	Repayment	CI Balance
IST YEAR	Opening Balance						
	Ist Quarter	-	16.18	16.18	-	-	16.18
	IInd Quarter	16.18	-	16.18	0.47	-	16.18
	IIIRD Quarter	16.18	-	16.18	0.47	-	16.18
	Ivth Quarter	16.18	-	16.18	0.47	-	16.18
					1.40	-	
IIND YEAR	Opening Balance						
	Ist Quarter	16.18	-	16.18	0.47	1.01	15.17
	IInd Quarter	15.17	-	15.17	0.44	1.01	14.16
	IIIRD Quarter	14.16	-	14.16	0.41	1.01	13.15
	Ivth Quarter	13.15		13.15	0.38	1.01	12.14
					1.69	4.05	
IIIRD YEAR	Opening Balance						
	Ist Quarter	12.14	-	12.14	0.35	1.01	11.13
	IInd Quarter	11.13	-	11.13	0.32	1.01	10.11
	IIIRD Quarter	10.11	-	10.11	0.29	1.01	9.10
	Ivth Quarter	9.10		9.10	0.26	1.01	8.09
					1.22	4.05	
IVTH YEAR	Opening Balance						
	Ist Quarter	8.09	-	8.09	0.23	1.01	7.08
	IInd Quarter	7.08	-	7.08	0.20	1.01	6.07
	IIIRD Quarter	6.07	-	6.07	0.17	1.01	5.06
	Ivth Quarter	5.06		5.06	0.15	1.01	4.05
					0.76	4.05	
VTH YEAR	Opening Balance						
	Ist Quarter	4.05	-	4.05	0.12	1.01	3.03
	IInd Quarter	3.03	-	3.03	0.09	1.01	2.02
	IIIRD Quarter	2.02	-	2.02	0.06	0.55	1.47
	Ivth Quarter	1.47		1.47	0.04	0.55	0.92
					0.30	3.12	

CALCULATION OF D.S.C.R

PARTICULARS	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
<u>CASH ACCRUALS</u>	13.02	15.29	16.88	19.83	22.63
Interest on Term Loan	1.40	1.69	1.22	0.76	0.30
Total	14.42	16.98	18.11	20.58	22.93
<u>REPAYMENT</u>					
Instalment of Term Loan	4.05	4.05	4.05	3.12	3.12
Interest on Term Loan	1.40	1.69	1.22	0.76	0.30
Total	5.44	5.73	5.27	3.88	3.43
DEBT SERVICE COVERAGE RAT	2.65	2.96	3.44	5.31	6.69
AVERAGE D.S.C.R.			4.21		

COMPUTATION OF SALE

Particulars	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR
Op Stock	-	4.50	5.25	6.00	6.75
Production	90.00	105.00	120.00	135.00	150.00
	90.00	109.50	125.25	141.00	156.75
Less : Closing Stock	4.50	5.25	6.00	6.75	7.50
Net Sale	85.50	104.25	119.25	134.25	149.25
Sale Price per MT (Average)	180,000.00	180,000.00	180,000.00	180,000.00	180,000.00
Sale (in Lacs)	153.90	187.65	214.65	241.65	268.65

COMPUTATION OF ELECTRICITY

(A) POWER CONNECTION				
Total Working Hour per day		Hours	8	
Electric Load Required		HP	55	
Load Factor			0.7460	
Electricity Charges		per unit	8.00	
Total Working Days			300	
Electricity Charges (8 Hrs Per day)				787,776.00
Add : Minimim Charges (@ 10%)				
(B) DG set				
No. of Working Days			300	days
No of Working Hours			-	Hour per day
Total no of Hour			-	
Diesel Consumption per Hour			8	
Total Consumption of Diesel			-	
Cost of Diesel			65.00	Rs. /Ltr
Total cost of Diesel			-	
Add : Lube Cost @15%			-	
Total			-	
Total cost of Power & Fuel at 100%				7.88
Year		Capacity		Amount (in Lacs)
IST YEAR		60%		4.73
IIND YEAR		70%		5.51
IIIRD YEAR		80%		6.30
IVTH YEAR		90%		7.09
VTH YEAR		100%		7.88

BREAK EVEN POINT ANALYSIS

Year	I	II	III	IV	V
Net Sales & Other Income	153.90	187.65	214.65	241.65	268.65
Less : Op. WIP Goods	-	6.48	7.56	8.64	9.72
Add : Cl. WIP Goods	6.48	7.56	8.64	9.72	10.80
Total Sales	160.38	188.73	215.73	242.73	269.73
Variable & Semi Variable Exp.					
Raw Material & Tax	114.30	133.35	152.40	171.45	190.50
Electricity Exp/Coal Consumption at 85%	4.02	4.69	5.36	6.03	6.70
Manufacturing Expenses 80%	6.16	9.01	10.30	11.60	12.90
Wages & Salary at 60%	8.55	9.41	10.35	11.38	12.52
Selling & administrative Expenses 80%	2.46	3.00	3.43	3.87	4.30
Intt. On Working Capital Loan	0.73	0.73	0.73	0.73	0.73
Total Variable & Semi Variable Exp	136.22	160.18	182.57	205.05	227.64
Contribution	24.16	28.55	33.16	37.68	42.09
Fixed & Semi Fixed Expenses					
Manufacturing Expenses 20%	1.54	2.25	2.58	2.90	3.22
Electricity Exp/Coal Consumption at 15%	0.71	0.83	0.95	1.06	1.18
Wages & Salary at 40%	5.70	6.27	6.90	7.59	8.35
Interest on Term Loan	1.40	1.69	1.22	0.76	0.30
Depreciation	2.40	2.09	1.79	1.54	1.32
Selling & administrative Expenses 20%	0.62	0.75	0.86	0.97	1.07
Total Fixed Expenses	12.36	13.87	14.29	14.81	15.45
Capacity Utilization	60%	70%	80%	90%	100%
OPERATING PROFIT	11.80	14.67	18.87	22.87	26.64
BREAK EVEN POINT	31%	34%	34%	35%	37%
BREAK EVEN SALES	82.07	91.73	92.97	95.42	99.02

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