Project profile of Edible oil

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PROJECT PROFILE
MUSTARD / RAPE SEED OIL

1. INTRODUCTION

Consumption of edible oil is substantial throughout the country. All Indian household use it every day. Various types of edible oils are available in the country such as groundnut, cotton seed, rapeseed, sunflower, mustard oil etc. Edible oils are made from respective oil seeds by extraction process and there are some national as well as regional brands. The Eastern region of the country consumes mustard oil in large quantity. Therefore, West Bengal is the preferred location.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The all important raw material shall be mustard seeds. The average recovery of oil is considered to be 30% . Hence to produce 144 tons of edible oil per year at 100% capacity utilization, Mustard seed to the extent of 480 tons shall be required . In view of production of mustard seeds is in excess of 3,50,000 tons every year, no difficulty is envisaged in procurement. Other materials in small quantities like additives and purifying agents shall be made available on prior arrangement.

4. MARKET OPPORTUNITIES

Due to the peculiar food habits and preparation methods, Indians use large quantities of edible oils every day. With growing population, demand is increasing every year and the country is importing semi –processed edible oils since long. Mustard oil is preferred as a cooking medium by the people of Eastern Region including West Bengal. There are many oil mills in West Bengal producing mustard oil but even then, mustard seeds are sold to other states and mustard oil produced in other states is sold in West Bengal in ample quantity. Thus, good quality mustard oil produced locally can be sold in the market.

5. PROJECT DESCRIPTION

a) Product & Its uses

Edible oil is an integral part of the Indian palate since long. India is perhaps the largest producer and consumer of different types of edible oils. Preference for the type of edible oil differs from state to state, e.g. people from western India prefer groundnut or cottonseed oil whereas North East states like mustard oil .

b) Capacity

The proposed capacity of the plant is to process 480 MT / annum of mustard seed.

c) Manufacturing Process

The process of manufacture is well established and conventional. To begin with, dry mustard seeds are fed to Table Ghani or oil extractor wherein about 90% of the oil is extracted. Further processing in expeller results in additional extraction of oil. Liquid oil and solid portion is then separated in filters. The solid portion known as oil cake is sold as cattle feed. Edible oil is packed either in tins, jars or food grade plastic pouches. The oil contents depend upon quality of seeds but the average recovery of oil from seeds is in the range of 30% to 35%.

6. PROJECT COMPONENTS & COST

a) Land & Building

Around 200 sq. mtrs. of plot with built –up area of 100 sq. mtrs. is sufficient . The cost of land could be Rs. 1.00 lacs whereas the built up area would cost Rs. 4.50 lacs. The construction cost is taken on a lower side as this will be a typical Ghani and will not require RCC slab on the entire building . Thus, total cost of land and building shall be in the region of Rs. 5.50 lacs

b) Plant & Machinery

Keeping in mind, the demand potential and economic viability of the project, it is advisable to install machinery to produce 144 tonnes of mustard oil every year at 100% capacity. In this industry, plant is operated for about 240-250 days per year due to seasonal availability of oil seeds. To have this rated production capacity, following machines are needed :

Item	**Qty**	**Price (Rs.)**
Table Ghani	1	3,30,000
Oil Expellers	2	3,10,000
Filter	1	2,50,000
Other support equipment electric motor and testing facilities	-	1,10,000
	Total	10,00,000

c) Miscellaneous Assets

Assets like storage tanks, packing tables, furniture, storage racks etc. are likely to cost Rs. 2,50,000/-

d) Utilities

Power requirement would be 25 HP and water shall be required for potable and sanitation purposes. The annual cost under this head at 100% activity level is estimated to be Rs. 2,10,000/-

e) Prel. & Pre Operative Expenses

A provision of Rs. 1, 00,000/- is adequate towards expenditure like establishment charges, interest during implementation of the project, trial run expenses, etc.

f) Working Capital Assessment

At 60 % capacity utilization in a year , the working capital needs would be as under:

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of Raw material and Packing material	½ Month	30%	6.35	4.44	1.91
Stock of Finished Goods	½ Month	25%	4.38	3.28	1.10
Receivable	½ Month	25%	4.74	3.55	1.19
		Total	**15.47**	**11.27**	**4.20**

g) Project Cost & Means of finance ***(Rs. in lacs)***

Item (Project Cost)	**Amount**
Land and Building	6.50
Plant and Machinery	10.00
Miscellaneous Assets	2.50
P & P Expenses	1.00
Contingencies @ 10% on Building and plant and machinery	1.65
Working capital margin	4.20
Total	**25.85**

Means of Finance	
Promoters' contribution	10.34
Term loan from Bank /FI	15.51
Total	**25.85**
Debt Equity Ratio	1:5:1
Promoters contribution	40%

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.

7) PROJECTED PROFITABILITY

a) Production Capacity

Production capacity at 100% would be 144 tons of mustard oil considering working of about 240days every year. It is assumed that the plant would be operated at 60% and 75% during first year and 2nd year respectively.

b) Sales Revenue at 100%

Product	**Qty (Tons)**	**Selling Price (Rs. / Ton)**	**Sales (Rs. in lacs)**
Mustard oil	144	80,000	115.20
De-oiled cake	336	25,000	84.00
	Total		**199.20**

c) Raw Material and packing material Required at 100% **(Rs. in lacs)**

Product	**Qty (Tons)**	**Rate (Rs. / Ton)**	**Value**
Mustard Seeds	**480**	**31,000**	**148.80**
Others			1.50

Packing Materials			2.20
	Total		152.50

d) Profitability statement

(Rs. in lacs)

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**144 Tons**	
	Capacity Utilisation	60%	75%
	Sales Realisation	119.52	149.40
B.	**Cost of Production**		
	Raw Materials & Packing Materials	91.50	114.35
	Utilities	1.50	1.87
	Salaries	5.40	5.94
	Stores and Spares	0.30	0.37
	Repairs and Maintenance	0.60	0.75
	Selling Expenses @ 5%	5.40	6.80
	Administrative Expenses	0.60	0.75
	Total	**105.30**	**130.83**
C.	**Profit before Interest & Depreciation**	**14.22**	**18.57**
	Interest on Term Loan	1.86	1.86
	Interest on Working Capital	1.57	1.96
	Depreciation.	1.65	1.48
	Net Profit	7.14	13.27
	Income-tax @ 20%	0.71	1.32
	Profit after tax	6.43	11.95
	Cash Accruals	8.08	13.43
	Repayment of Term Loan	NIL	3.0

e) Break Even Point Analysis

S. No.	Particulars	Amount (Rs. in lacs)	
(A)	Sales		119.52
(B)	Variable Costs		
	Raw and Packing Material	91.50	
	Utilities(70%)	1.05	
	Salaries (60%)	3.78	
	Stores and Spares	0.30	
	Selling and Distribution Exps (70%)	4.32	
	Admn Expenses (50%)	0.30	
	Interest on WC	1.57	102.82
(C)	Contribution (A) /(B)	16.70	
(D)	Fixed Costs	5.85	
(E)	Break Even Point	35%	

f) Debt Service Coverage Ratio (DSCR)

(Rs. in lacs)

Particulars	1st year	2nd year	3rd year
Cash Accruals	8.08	13.43	16.11
Interest on TL	1.86	1.86	1.50
Total (A)	9.94	15.29	17.61
Interest on TL	1.86	1.86	1.50
Repayment of TL	Nil	3.00	3.0
Total (B)	1.86	4.86	4.50
DSCR (A) / (B)	5.34	3.14	3.91
Average DSCR	4.13		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 25.85 lacs

(Rs. in lacs)

Year	**Cash Accruals**	**20%**	**32%**
1	8.08	6.73	6.12
2	13.43	9.32	7.65
3	16.11	9.32	7.00
4	16.11	7.76	5.30
Total		**33.00**	**26.07**

The IRR is around 32%

h) Manpower requirement

Particulars	**Nos.**	**Monthly**	**Total Monthly Salary (Rs.)**
Skilled Worker	2	7,500	15,000
Semi Skilled Workers	2	6,000	12,000
Helpers	2	5,000	10,000
Salesman	1	8,000	8,000
		Total	**45,000**

8. ASSUMPTIONS

- The plant will work for 240 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 12% per annum and on working capital it is 14% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 31,000 / ton and Rs 80,000 / ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Kumar Metal Industries Pvt. Ltd.
   101, Kakad Bhavan, 30th Road, Opposite Gaiety,
   Galaxy Cinema, Bandra west, Mumbai -400 050
   M. 08447548575

2. MUEZ HEST INDIA PVT. LTD.
   230/231, Blue Rose , W. E. Highway
   Borivali (East), Mumbai (India)
   Tel. 022 28541758 / 28701752
   e-mail : muezhest@vsnl.com,

3. P Roy Expeller Works
   C- 195/3, Mayapuri Industrial Area, Phase –II
   New Delhi – 110064
   Tel. 011- 28111832 , 28111361
   e-mail : proy@ndf.vsnl.net.in

PROJECT PROFILE

SESAME OIL

1. INTRODUCTION

India is one of the major producers of many oilseed crops like ground nut, mustard, rapeseed, sesame seed etc. Traditionally, Indians consume substantial quantity of edible oils mainly as a cooking medium. Oil extraction is an age old activity in the country and with the advent of new techniques, the extraction process is now convenient as well as hygienic . Oil extracted from sesame seeds is not as popular as other edible oils like groundnut, cottonseed, mustard or rapeseed but it is used as a cooking medium in some parts of the country it is also used in preparation of certain medicines.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile

3. RAW MATERIAL AVAILABILITY

The most important raw material would be good quality sesame seeds. Annual production of sesame seed in the state is around 1,50,000 tons. Availability of sesame seeds would be seasonal and hence factory would work for 8 months i.e. 240 days in

a year. Oil will be packed in plastic containers of different sizes whereas packing of de-oiled cake would be in second hand gunny bags.

4. MARKET OPPORTUNITIES

Edible oil is used in all Indian households since centuries as a cooking medium to make food as well as many snacks. In spite of very large production of many oilseeds, the country still imports very large quantities of semi processed edible oils due to their ever increasing demand. Apart from use in households, there is a vast market among restaurants, dhabas, canteens and hostels, certain food processing units, farsan or snack makers, caterers and so on. Use of sesame seed oil is not as high as some other edible oils and hence a moderate production capacity has to be planned. But it has certain industrial applications as well. It is used in making hair oil, hydrogenated oil and certain medicines.

5. PROJECT DESCRIPTION

a) Product & Its uses

Sesame oil is extracted from sesame seeds . Recovery of oil from seeds is around 35% with the help of oil expeller, leaving around 4% oil in the cake which is sold to the cattle feed manufacturers. This product is generally produced in western part of the country and this note considers West Bengal as the preferred location.

b) Capacity

The proposed capacity of the plant is to process 200 MT / annum of Sesame seed.

c) Manufacturing Process

It is simple and standardized. Sun dried seeds are cleaned on shaker screen to remove stone, dust etc. and then they are fed to expeller wherein oil is extracted. This process is repeated to extract maximum oil. Oil is then filtered on filter press and packed. About 35% oil is extracted and balance known as de- oiled cake which is sold to cattle feed producers.

6. PROJECT COMPONENTS & COST

a) Land & Building

Land measuring to around 200 sq. mtrs. with a built-up area of 100 sq.mtrs. is enough for production, packing and storage . Cost of land is assumed to be Rs. 1,00,000/- whereas construction cost is taken as Rs. 4.50 lacs.

b) Plant & Machinery

To install annual processing capacity of 200 tonnes with 240 working days, the following machinery shall be required :

Item	**Qty**	**Price (Rs.)**
Oil expellers complete with long heating kettle, other accessories and electrical	2	5,00,000/-
Filter press with plunger pump, filter cloth etc	1	2,50,000
Mini Boiler	1	1,50,000
Shaker screen with blower	1	0 50,000
Weighing scale. Oil storage tanks etc.	-	2,00,000
	Total	**11,50,000**

c) Miscellaneous Assets

Other assets like furniture and fixtures, electrical, working tables etc. would cost Rs. 1,50,000/-

d) Utilities

Total power requirement shall be 40 HP whereas water requirement per day would be 1000 ltrs. The total cost is estimated to be 3.0 lacs/ year.

e) Prel. & Pre Operative ExpensesA provision of Rs. 1,50,000/- would take care of pre-production expenses like registration, administrative and travelling expenses, interest during implementation and trial-runs, etc.

f) Working Capital Assessment

At 60 % working 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	½ month	30%	331.20	2.31	0.99
Stock of Finished Goods	½ month	30%	3.79	2.66	1.13
Receivable	½ month	30%	3.95	2.77	1.18
		Total	11.04	7.74	3.30

g) Project Cost & Means of finance

Item(Project cost)	**Amount (Rs. in lacs)**
Land and Building	5.50
Plant and Machinery	11.50
Miscellaneous Assets	1.50
P & P Expenses	1.50
Contingencies @ 10% on Building and plant and machinery	1.70
Working capital margin	3.30
Total	**25.00**
Means of Finance	
Promoters' contribution	10.00
Term loan from Bank FI	15.00
Total	**25.00**
Debt Equity Ratio	1.5:1
Promoters contribution	40%

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.

7) PROJECTED PROFITABILITY

a) Production Capacity

As against rated production capacity of 200 tonnes, actual utilization during season of 8 month is envisaged to be 60% in first year and 75% in second year.

b) Sales Revenue at 100%

(Rs. in lacs)

Product	**Qty (Tons)**	**Selling Price (Rs. / Ton)**	**Sales**
Sesame oil	80	1,45,000	116.0
De-oiled cake	120	35,000	42.00
		Total	**158.00**

c) Raw material & Packing Material Required at 100%

(***Rs. in lacs)***

Product	**Qty (Tonnes)**	**Rate (Rs./ Ton)**	**Value**
Sesame seeds	200	50,000	100.00
Packing Material and others	-	-	2.50
		Total	**102.50**

d) Profitability statement

(Rs. in lacs)

S. No.	**Particulars**	**1st year**	**2nd year**
A.	Installed capacity	200 Tonnes	
	Capacity Utilisation	60%	75%

	Sales Realisation	94.80	118.5
B.	**Cost of Production**		
	Raw material & Packing materials	61.50	76.87
	Utilities	1.50	1.87
	Salaries	4.00	4.20
	Stores and Spares	0.60	0.75
	Repairs and Maintenance	0.30	0.37
	Selling Expenses @ 25%	4.62	5.77
	Administrative Expenses	0.60	0.75
	Total	**73.12**	**90.58**
C.	Profit before Interest & Depreciation	21.68	28.27
	Interest on Term Loan	1.80	1.32
	Interest on Working Capital	1.54	1.92
	Depreciation.	1.60	1.44
	Net Profit	16.74	23.59
	Profit after tax	15.07	21.24
	Cash Accruals	16.67	22.68
	Repayment of Term Loan	Nil	4.00

e) Break Even Point Analysis ***(Rs. in lacs)***

S. No.	**Particulars**	**Amount**	
(A)	**Sales**		**94.50**
(B)	**Variable Costs**		
	Raw and Packing Material	61.50	
	Utilities(70%)	1.30	
	Salaries (60%)	2.94	
	Stores and Spares	0.75	
	Selling and Distribution Exps (70%)	4.03	

	Admn Expenses (50%)	0.30	
	Interest on WC	1.92	72.74
(C)	Contribution (A) – (B)		21.76
(D)	Fixed Costs		5.73
(E)	Break Even Point		27%

f) Debt Service Coverage Ratio (DSCR)

(Rs. in lacs)

Particulars	**1st year**	**2nd year**	**3rd year**
Cash Accruals	16.67	23.59	28.30
Interest on TL	1.80	1.32	0.84
Total (A)	18.47	24.91	29.14
Interest on TL	1.80	1.32	0.84
Repayment of TL	-	4.0	4.0
Total (B)	1.80	5.32	4.84
DSCR (A) / (B)	10.26	4.68	6.02
Average DSCR	6.98		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 25.00 lacs

Year	**Cash Accruals**	**32%**	**40%**
1	16.67	12.50	11.20
2	23.59	13.39	11.50
3	28.30	8.49	8.40
Total		34.38	31.10

IRR of the project is 40%

h) Manpower requirement

Particulars	Nos.	Monthly	Total Monthly Salary (Rs.)
Machine operators	2	8000	16,000
Skilled Worker	2	7,500	15,000
Semi Skilled Workers	2	6,000	12,000
Salesman	1	8,000	8,000
		Total	**51,000**

8. ASSUMPTIONS

- The plant will work for 240 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 50,000 / ton and Rs. 1,45,000 / ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

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New Delhi – 110064
Tel. 011- 28111832 , 28111361
e-mail : proy@ndf.vsnl.net.in

PROJECT PROFILE
SUNFLOWER OIL

1. INTRODUCTION

Sunflower is an important oilseed crop in India popularly known as "Surajmukhi." It is one of the fastest growing oilseed crops. In India, it was used mainly as ornamental crop but in recent past it became an important source of edible and nutritious oil. Sunflower is a major source of vegetable oil in the world. It is used for a variety of cooking purposes. Sunflower seed contains about 48 – 53 percent edible oil. The oil is considered premium compared to other vegetable oil as it is light yellow in colour, high level of linoleic acid and absence of linolenic acid, possesses good flavour and high smoke point. Sunflower oil is a rich source (64 percent) of linoleic acid which is good for heart patients. Linoleic acid helps in washing out cholesterol deposition in the coronary arteries of the heart. The oil is also used for manufacturing hydrogenated oil. Sunflower is also a source of lecithin, copherols and furfural. It is used as nutritious meal for birds and animals. It is also used in the preparation of cosmetics and pharmaceuticals.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

Sunflower is one of the fastest growing oilseed crops in India. It occupies fourth place among oilseed crops in terms of acreage and production. Even though the commercial production of sunflower began in early seventies with a meager production, it had gone upto 6.15 lakhs tones during the year 2012-13. Karnataka, Andhra Pradesh and Maharashtra accounted for more than 90% of production. Total production of sun flower seed in West Bengal is estimated to be more than 25000 MT. The cultivation is taking place mostly in Uttan and Dakshin Dinajpur, Malda and Murshidabad (all in North Bengal) in Purulia in the western part of the state and in Nadia in the east.

4. MARKET OPPORTUNITIES

Due to peculiar food habits and preparation methods, Indians use large quantities of edible oil every day. With growing population, demand is increasing every year and the country is importing semi –processed edible oils since long. Sunflower oil is preferred as a cooking medium by the people of Eastern Region including West Bengal. As per one estimate, there are more than 100 oil mills in eastern sector but even then sunflower seeds are sold to other states and sunflower oil produced in other states is sold in West Bengal in ample quantity. Thus, good quality sunflower oil produced locally can be sold in the market.

5. PROJECT DESCRIPTION

a) Product & Its uses

Edible oils are a major source of nutrition. The fatty acids in edible oils are required by the body as a vehicle for carrying vitamins, and they provide energy which is twice that of cereals. Oil cakes, which are by- products of the oil extraction process, are important sources of animals nutrition. Besides, these can be processed into edible flours.

b) Capacity

The proposed capacity of the plant is to process 240 MT / annum of sunflower seed.

c) Manufacturing process

Processing or, oil extraction means separation of oil from rest of the materials. Oil extraction in India is mainly done by mechanical method. Expeller processing is the most widely used method of oil recovery in India. A screw press consists basically of a shaft fitted with spirally arranged sections, rather like a screw. The shaft turns horizontally in a cage consisting of barrel bars that are clamped together forming a kind of slotted tube around the shaft. While rotating the worm assembly moves the Sunflower seeds from the feed end to the discharge end expelling the oil thorough the slots between the bars of the cage. The sunflower seed, as it moves along the shaft, loses oil and its volume decreases. The cake is expelled from the press through a choke gear, an adjustable cone forming an annular opening of variable size.

6. PROJECT COMPONENTS & COST

a) Land & Building

Around 200 sq. mtrs. of plot with a built up area of 100 sq. mtrs. is sufficient . The cost of land could be Rs. 1.00 lacs whereas the built up area would cost Rs. 5.50 lacs. The construction cost is taken on a lower side as this will be a typical oil mill and will not require high class RCC slab on the entire building. Thus, total cost of land and building shall be in the region of Rs. 6.50 lacs.

b) Plant & Machinery

Keeping in mind, the demand potential and economic viability of the project, it is advisable to install machinery to process 240 MT/ every year of sunflower at 100% capacity. In this industry, plant is operated for about 300 days per year due to seasonal availability of oil seeds. To have this rated production capacity, following machines are needed :

Machinery	Qty	Price (Rs. in lacs)
Super baby oil expeller bolt crushing	2	3.10
15 H.P. motor with starter , switch cap. Ind.		0.50
Filtorpress, 81 X 18 with plunger pump and filter cloth Ind	1	2.50
Vibrating siewe motorized with ½ HP motor size	1	0.40
Baby boiler, 200 kg. cap Ind.	1	3.50
Oil store tanks 2000 kg oil cap ind	1	1.50
Weighing machine	1	0.75
Electrical etc.	1	1.50
Total		13.75

c) Utilities

Power requirement would be 25 HP and water shall be required for potable and sanitation purposes. The annual cost under this head at 100% activity level is estimated to be Rs. 2.50 lacs

d) Prel. & Pre Operative Expenses

A provision of Rs. 1.00 lacs is adequate towards expenditure like establishment charges, interest during implementation of the project, trial run expenses, etc.

e) Working Capital Assessment

As against rated capacity of 240 tonnes per year, capacity utilization of 60% is assumed in the first year. At this activity level, the project would require working capital of Rs. 7.52 lacs as worked out here below:

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Raw material & packing materials	½ month	30%	2.19	1.54	0.65
Stock of Finished Goods	½ month	25%	2.26	1.70	0.56
Receivable	½ month	25%	3.07	2.31	0.76
			7.52	5.55	1.97

f) Project cost & Means of finance

Item	Amount (Rs. in lacs)
Land and Building	6.50
Plant and Machinery	10.00
Miscellaneous Assets	3.75
P & P Expenses	1.00
Contingencies @ 10% on Building and plant and machinery	1.55
Working capital margin	1.97
Total	24.77
Means of Finance	
Promoters' contribution	9.90
Term loan from Bank FI	14.87
Total	24.77
Debt Equity Ratio	1.5:1
Promoters contribution	40%

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.

7) PROJECTED PROFITABILITY

a) Production Capacity

The rated production capacity of the plant is 240 tonnes per year whereas actual capacity utilization is expected to be 60% and 75% in 1st & 2nd year respectively.

b) Sales Revenue at 100%

Product	**Qty (Tonnes)**	**Selling Price (Rs. / Ton)**	**Sales (Rs. in lacs)**
Sunflower oil	96	80,000	76.80
De-oiled cake	132	35,000	46.30
Total			**123.00**

c) Raw Material and packing material Required at 100%

Recovery of oil from sunflower seed is 40-45%. To arrive at the realistic projection, it is taken at 40%. Prices of oil seed vary from Rs. 35,000/- to Rs. 40,000 per ton depending upon season. Hence average purchase price is considered to be Rs. 36,000- per ton.

Product	**Qty (Tons)**	**Rate (Rs. / Ton)**	**Value (Rs. in lacs)**
Sunflower	240	36000/-	86.40
Packing Material			1.50
Total			87.90

d) Profitability statement *(Rs. in lacs)*

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**240 Tons**	
	Capacity Utilisation	60%	75%
	Sales Realisation	73.80	92.25
B.	**Cost of Production**		

	Raw Materials	51.84	64.80
	Packing Materials	0.90	1.12
	Utilities	1.50	1.87
	Salaries	3.60	3.96
	Stores and Spares	0.60	0.75
	Repairs and Maintenance	0.90	1.12
	Selling Expenses @ 25%	3.69	4.61
	Administrative Expenses	0.90	1.12
	Total	63.93	79.35
	Profit before Interest & Depreciation	**9.87**	**12.90**
	Interest on Term Loan	1.78	1.42
	Interest on Working Capital	0.77	0.97
	Depreciation.	1.55	1.39
	Net Profit	5.77	9.12
	Income-tax @ 20%	1.15	1.82
	Profit after tax	4.62	7.30
	Cash Accruals	6.17	8.69
	Repayment of Term Loan	NIL	3.0

e) Break Even Point Analysis

S. No.	**Particulars**	**Amount (Rs. in lacs)**	
(A)	Sales		92.25
(B)	Variable Costs		
	Raw Material	64.80	
	Packing Material	1.12	
	Utilities(70%)	1.30	
	Salaries (60%)	2.37	
	Stores and Spares	0.75	

	Selling and Distribution Exps (70%)	3.22	
	Admn Expenses (50%)	0.56	
	Interest on WC	0.97	75.05
(C)	Contribution (A) – (B)		17.20
(D)	Fixed Costs		6.25
(E)	Break Even Point		37%

f) Debt Service Coverage Ratio (DSCR) ***(Rs. in lacs)***

Particulars	**1st year**	**2nd year**	**3rd year**
Cash Accruals	6.17	8.69	10.42
Interest on TL	1.75	1.42	1.05
Total (A)	7.95	10.11	11.47
Interest on TL	1.75	1.42	1.05
Repayment of TL	Nil	3.0	3.0
Total (B)	1.75	4.42	4.05
DSCR (A) / (B)	4.54	2.28	2.83
Average DSCR	3.21		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 24.77 lacs

Year	**Cash Accruals**	**24%**	**28%**
1	6.17	5.13	4.93
2	8.69	6.03	5.64
3	10.42	6.03	5.46
4	10.42	5.02	4.40
5	10.42	4.16	3.55
	Total	**26.37**	**24.16**

The IRR is around 24%.

h) Manpower requirement

Particulars	Nos.	Monthly	Total Monthly Salary (Rs.)
Machine operator	1	7500	7,500
Skilled Workers	2	7,500	15,000
Salesman	1	7,500	7,500
		Total	**30,000**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 12% per annum and on working capital it is 14% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 36,000 / ton and Rs. 80,000 / ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Kumar Metal Industries Pvt. Ltd.
   101, Kakad Bhavan, 30th Road, Opposite Gaiety,
   Galaxy Cinema, Bandra west, Mumbai -400 050
   M. 08447548575

2. MUEZ HEST INDIA PVT. LTD.
230/231, Blue Rose , W. E. Highway
Borivali (East), Mumbai (India)
Tel. 022 28541758 / 28701752
e-mail : muezhest@vsnl.com,

3. P Roy Expeller Works
C- 195/3, Mayapuri Industrial Area, Phase –II
New Delhi – 110064
Tel. 011- 28111832 , 28111361
e-mail : proy@ndf.vsnl.net.in

PROJECT PROFILE
GROUNDNUT OIL

1. INTRODUCTION

Ground nut / Peanut oil is widely used in many parts of the country for cooking pickling, massaging etc. Ground nut oil should not be used by anyone who has an allergy to peanuts. Because of its oiliness, it is said to be a good choice for inclusion in massage blends.

Peanut oil contains *approximately* 17% saturated fat, 50% oleic acid , 25% linoleic acid and less than 1% alpha linolenic acid.

Peanut oil is of great use for medicinal purposes. The oil is also known for its culinary use. It is extensively used in the South East Asian cuisine. Peanut oil has a very light nutty aroma that has brought it in the list of popular base oils, which are also known as carrier oils. In United Kingdom, it is marketed as 'Groundnut Oil'. When used in combination with fresh lime juice, it works wonders in protecting the skin from ugly acne marks and black heads. An interesting fact about Peanut oil is that it was firstly used as a source of fuel for the disel engine.. Peanut oil massage is extremely beneficial for people suffering from Arthritis.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile

3. RAW MATERIAL AVAILABILITY

The most important raw material would be good quality ground nut seed. Annual production of ground nut seed in the country is around 1,20,000 tonnes. Production in West Bengal is not very significant. Availability of ground nut seeds would be seasonal and hence factory would work for about 8 months. Oil will be packed in plastic containers of different sizes whereas packing of de-oiled cake would be in second hand gunny bags.

4. MARKET OPPORTUNITIES

It is a product of daily necessity in the Southern states and some parts of North India. It is used as a cooking medium in houses, sweet shops, hotels etc. It has also got large demand in hydrogenation and pharmaceutical industries.

5. PROJECT DESCRIPTION

a) Product & Its uses

Oil seed crop occupies an important position in the agricultural and industrial economy of our country and accounts for about 10 % of the total cropped area. Most of the edible oils are produced from five major oil seeds and groundnut is one of them. The groundnut occupies nearly 50% of the area under oil seeds and is contributing to more than 60 % of the oil seeds production in the country. The major states in the country of groundnut cultivation are Maharashtra, Gujarat, Karnataka, Andhra Pradesh, Madhya Pradesh and Rajasthan. The groundnut oil is a medium of cooking in most of the aforesaid states of the Western region. Cake which is rich in proteins (45-60 %) is a good animal feed and used in the production of fertilizers.

b) Capacity

The proposed capacity of the plant is to process 240 MT / annum of ground nut seed.

c) Manufacturing process

Ground nut oil production process, based on mechanical pressing technology, can be grouped into three stages: seed preparation, pressing and crude oil refining**.**

The seeds have to be prepared for efficient oil recovery by pressing and by adjusting their moisture content and temperature, while keeping the seeds hot (say 90-95^{o}c) for a period of 30-60 minute. Then the prepared seed shall be conveyed to the screw pressing machine where it is pressed by the action of outer shell. The crude oil so obtained from the pressing will be first clarified in a settling tank and then shall be pumped through the filter press.

The filtered crude groundnut oil will be pumped to the refinery where it shall pass through three stages of refining: neutralization, bleaching and deodorization**.**

6. PROJECT COMPONENTS & COST

a) Land & Building

Around 200 sq. mtrs. of plot with built –up area of 100 sq. mtrs. is sufficient for the project . The cost of land could be Rs. 1.00 lacs whereas the built up area would cost Rs. 5.50 lacs. Thus, total cost of land and building shall be in the region of Rs. 6.50 lacs.

b) Plant & Machinery

Particulars	**Qty**	**Value (Rs.)**
Oil expeller no. 1 crushing capacity one ton per day with heating kettles	2	3,10,000/-
20 HP motor with starter switch, main switch, gear etc	1	1,00,000/-
Baby boiler with super heater	1	3,50,000/-
Filter press 18 x 18 plates with plunger pump filter cloth	1	2,50,000/-
Oil storage tank 200 kg. capacity and MISC.		3,40,000/-
Total		**13,50,000**

c) Utilities

Total power requirement shall be 35 HP whereas water requirement per day would be 1000 ltrs. The total cost is estimated to be 2.50 lacs/ year.

e) Prel. & Pre Operative Expenses

A provision of Rs. 1,00,000/- would take care of the pre-production expenses like registration, administrative and travelling expenses, interest during implementation and trial-runs, etc.

f) Working Capital Assessment

At 60 % working 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	½ month	30%	5.06	3.55	1.51
Stock of Finished Goods	½ month	25%	5.96	4.50	1.46
Receivable	½ month	25%	8.55	6.42	2.13
		Total	19.57	14.47	5.10

g) Project cost & Means of finance

Item	**Amount (Rs. in lacs)**
Land and Building	6.50
Plant and Machinery	10.10
Miscellaneous Assets	3.40
P & P Expenses	1.00
Contingencies @ 10% on Building and P & M	1.56
Working capital margin	5.10

Total	**27.66**
Means of Finance	
Promoters' contribution	11.06
Term loan from Bank FI	16.60
Total	27.66
Debt Equity Ratio	1.5:1
Promoters contribution	40

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.

7) PROJECTED PROFITABILITY

a) Production Capacity

The rated production capacity of the plant is 240 tonnes per year whereas actual capacity utilization is expected to be 60% and 75% during the 1st year and the 2nd year of operation respectively.

b) Sales Revenue at 100%

Product	**Qty (Tons)**	**Selling Price (Rs. / Ton)**	**Sales (Rs. in lacs)**
Ground nut oil	108	1,25,000	135.00
De-oiled cake	120	30,000	36.00
		Total	**171.00**

c) Raw Material Required at 100%

Recovery of oil from ground nut seed is 40-45%. To arrive at the realistic projection, it is taken at 40%. Prices of oil seed vary from Rs. 55,000/- to Rs. 60,000 per ton depending

upon the season. Hence the average purchase price is considered to be Rs. 55,000- per ton.

Product	**Qty (Tons)**	**Rate (Rs. / Ton)**	**Value(Rs. in Lacs)**
Ground nut seed	240	55,000	132.00
Packing material			2.00
Others			1.00

d) Profitability statement

(Rs. in lacs)

S. No.	**Particulars**	**1st year**	**2nd year**
A.	**Installed capacity**	**240 TPA**	
	Capacity Utilisation	60%	75%
	Sales Realisation	102.60	128.25
B.	**Cost of Production**		
	Raw Materials	79.20	99.00
	Packing Materials	1.80	2.25
	Utilities	1.50	1.87
	Salaries	3.60	3.96
	Stores and Spares	0.60	0.60
	Repairs and Maintenance	0.90	1.12
	Selling Expenses @ 25%	5.13	6.41
	Administrative Expenses	0.90	1.12
	Total	**93.63**	**116.33**
C.	**Profit before Interest & Depreciation**	**8.97**	**11.92**
	Interest on Term Loan	1.99	2.49
	Interest on Working Capital	2.02	2.53

	Depreciation.	1.56	1.40
	Net Profit	3.40	5.50
	Profit after tax	3.40	5.50
	Cash Accruals	4.90	6.90
	Repayment of Term Loan	NIL	4

e) Break Even Point Analysis

S. No.	**Particulars**	**Amount (Rs. in lacs)**	
(A)	Sales		128.25
(B)	Variable Costs		
	Raw Material	99.0	
	Packing Material	2.25	
	Utilities(70%)	1.30	
	Salaries (60%)	2.16	
	Stores and Spares	0.60	
	Selling and Distribution Exps (70%)	4.48	
	Admn Expenses (50%)	0.56	
	Interest on WC	2.53	112.87
(C)	Contribution (A) / (B)		15.38
(D)	Fixed Costs		9.05
(E)	Break Even Point		58%

f) Debt Service Coverage Ratio (DSCR) ***(Rs. in lacs)***

Particulars	**1st year**	**2nd year**	**3rd year**
Cash Accruals	4.96	6.90	8.28
Interest on TL	1.99	2.49	1.51
Total (A)	6.95	9.39	9.79
Interest on TL	1.99	2.49	1.51

Repayment of TL	Nil	4.00	4.00
Total (B)	1.99	6.49	5.51
DSCR (A) / (B)	3.49	1.44	1.77
Average DSCR		2.23	

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 27.66 lacs (Rs. in lacs)

Year	Cash Accruals	18%
1	4.96	4.20
2	6.90	5.95
3	8.28	6.04
4	8.28	5 27
5	8.25	4.60
		26.08

The IRR is around 17%

h) Manpower requirement

Particulars	Nos.	Monthly	Total Monthly Salary (Rs.)
Machine operator	1	8000	8,000
Skilled Worker	2	7,500	15,000
Salesman	1	7,500	7,5000
		Total	**31,000**

8. ASSUMPTIONS

- The plant will work for 240 days in a year.
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.

- The interest on term loan is taken at 12% per annum and on working capital, it is 14% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 55,000 / ton and Rs. 1,25,000 respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

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   Tel. 011- 28111832 , 28111361
   e-mail : proy@ndf.vsnl.net.in

PROJECT PROFILE
RICE BRAN OIL

1. INTRODUCTION

Rice oil, also called rice bran oil has been used extensively in Asian countries such as Japan, Korea, China, Taiwan, Thailand, India and Pakistan. It is the preferred oil in Japan for its subtle flavor and odor. More recently, interest in Rice oil escalated with its identification as a healthy oil that reduces serum cholesterol.

Rice oil is a minor constituent of rough rice when compared with the carbohydrate and protein content. Two major classes of lipids are present: those internal within the endosperm and those associated with the bran. The internal lipids contribute to the nutritional, functional, and sensory qualities of rice.

Rice bran is the main source of rice oil. The majority of available bran continues to be used for animal feeds without being extracted for the oil. The food industry uses minor quantities of stabilized rice bran as a source of dietary fiber, protein and desirable oil.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

Total production of Rice bran oil in the country is estimated to be 9.00 lacs ton per annum out of which around 8.70 lacs tonne is edible oil and around 0.30 lacs ton is non edible oil. Production of rice bran oil in West Bengal is estimated to be 60,000 ton / annum.

4. MARKET OPPORTUNITIES

The low per capita consumption in India reflects not only inadequate availability of domestic oils in recent years, but also the lower purchasing power of a large section of the population. As per the nutritional requirement as recommended by ICMR, the minimum per day consumption rate of edible oil stands at 35 gms per capita and considering this minimum nutritional requirement of vegetable oil, it would be 13.00 million M. T. per annum for a population of 1200 million.

5. PROJECT DESCRIPTION

a) Product & Its uses

- Excellent source of vitamin E, gamma oryzanol and naturally occurring phytosterols , cholesterol and trans fat free, All natural and hypoallergenic and non hydrogenated
- Rice Bran Oil has an excellent balance of saturated, monounsaturated and polyunsaturated fats as recommended by such organizations as the American Heart Association and the World Health Organization.
- Research has shown that rice bran oil lower LDL cholesterol level without lowering HDL.

b) Capacity

The proposed capacity of the plant is to process 9000 MT / annum of crude Rice bran oil.

c) Manufacturing process

Refining of crude rice oil involves dewaxing , degumming , neutralization of free fatty acids, bleaching to improve colour, and steam deodorization. Refined rice bran oil is a light yellow colour with a mild background odor and flavour reminiscent of rice . Similar to peanut oil , the flavour and odor are complementary to the flavour of many fried foods , such as fish, chicken, and chips.

6. PROJECT COMPONENTS & COST

a) Land & Building

Around 2000 sq. mtrs. of plot with built –up area of 500 sq. mtrs. is sufficient . The cost of land could be Rs. 10.00 lacs whereas the built up area would cost Rs. 30.00 lacs. Thus, total cost of land and building shall be in the region of Rs. 40.00 lacs

b) Plant & Machinery

The cost of 30TPD refinery is estimated at Rs. 150 lacs

c) Utilities

Total power requirement shall be 50 HP whereas water requirement per day would be 50000 ltrs. In addition to this coal will be required for the boiler. The total cost is estimated to be 46.00 lacs/ year.

d) Prel. & Pre Operative Expenses

A provision of Rs. 4.35 lacs would take care of pre-production expenses like registration, administrative and travelling expenses, interest during implementation and trial-runs, etc.

e) Working Capital Assessment

(Rs. in lacs)

Particulars	**Period**	**Margin**	**Total**	**Bank**	**Promoters**
Stock of raw material & packing Material	½ month	30%	40.17	28.12	12.05
Stock of Finished Goods	½ month	25%	43.64	32.73	10.91
Receivable	½ month	25%	46.18	34.64	11.54
Total			129.99	95.49	34.50

f) Project cost & Means of Finance

Item	**Amount (Rs. in lacs)**
Land and Building	40.00
Plant and Machinery	150.00
Miscellaneous Assets	22.0
P & P Expenses	4.35
Contingencies @ 10% on building and plant & machinery	18.00
Working capital margin	34.50
Total	268.85
Means of Finance	
Promoters' contribution	107.54
Term loan from Bank / FI	161.31
Total	268.85
Debt Equity Ratio	1.5:1
Promoters contribution	40%

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.

7) PROJECTED PROFITABILITY

a) Production capacity

The rated production capacity of the plant is 9000 tons per year whereas actual capacity utilization is expected to be 60% and 75%, during the first year and 2nd year respectively.

b) Sales Revenue at 100%

Product	**Qty (Tons)**	**Selling Price (Rs. / Ton)**	**Sales (Rs. in lacs)**
Refined oil	8010	45,000	3604.50
Soap stock	900	10,000	90.00
Total			**3694.50**

c) Raw Material and packing material

Requirement of crude rice bran oil having 10% Free Fatty Acid (FFA) and other chemicals are as under:

Product	**Qty (Tons)**	**Rate (Rs. / Ton)**	**Value (Rs. in lacs)**
Rice bran oil(10% FFA)	9,000	35,000	3150
Chemical			27.00
Packing material			
Tins of 15 kg	5.34 lacs	Rs. 7 /pc	37.38
Total			**3214.38**

d) Profitability statement

(Rs. in lacs)

S. No.	Particulars	1st year	2nd year
A.	**Installed capacity**	**9000 Tonnes**	
	Capacity Utilisation	60%	75%
	Sales Realisation	2216.70	2770.87
B.	**Cost of Production**		
	Raw material & packing materials	1928.62	2410.78
	Utilities	27.70	34.50
	Salaries	17.70	19.47
	Stores and Spares	3.00	3.75
	Repairs and Maintenance	4.25	5.32
	Selling Expenses @ 5%	110.83	138.54
	Administrative Expenses	3.50	4.38
	Total	**2095.50**	**2616.74**
C.	**Profit before Interest & Depreciation**	**121.20**	**154.13**
	Interest on Term Loan	16.13	13.10
	Interest on Working Capital	11.45	14.31
	Depreciation.	18.00	16.20
	Net Profit	75.62	110.52
	Income-tax @ 20%	15.12	22.10
	Profit after tax	60.50	88.42
	Cash Accruals	68.50	102.73
	Repayment of Term Loan	nil	30.00

e) Break Even Point Analysis ***(Rs. in lacs)***

S. No.	**Particulars**	**Amount**	
(A)	Sales		2216.70

(B)	Variable Costs		
	Raw material & packing Material	1928.62	
	Utilities(70%)	19.32	
	Salaries (60%)	10.62	
	Stores and Spares	3.00	
	Selling and Distribution Exps (70%)	77.58	
	Admn Expenses (50%)	1.75	
	Interest on WC	11.45	2052.34
(C)	**Contribution (A) - (B)**		**164.47**
(D)	**Fixed Costs**		**70.77**
(E)	**Break Even Point**		**43%**

f) Debt Service Coverage Ratio (DSCR) ***(Rs. in lacs)***

Particulars	1st year	2nd year	3rd year
Cash Accruals	68.50	90.42	108.50
Interest on TL	16.13	13.10	10.00
Total (A)	84.63	103.52	118.50
Interest on TL	16.13	13.10	10.30
Repayment of TL	Nil	30.00	30.00
Total (B)	16.13	43.10	40.30
DSCR (A) / (B)	5.24	2.40	2.94
Average DSCR	3.52		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 268.85 lacs ***(Rs. in lacs)***

Year	**Cash Accruals**	**20%**	**24%**
1	68.50	57.06	55.21
2	90.42	62.75	58.77

3	108.50	62.82	56.85
4	108.50	52.29	45.85
5	108.50	43.61	36.99
Total		278.53	253.67

The IRR is around 22%

h) Manpower requirement

Particulars	**Nos.**	**Monthly Salary (Rs.)**	**Salary/ year Rs. in lacs)**
Production Manager	1	15,000	1.80
Chemist /supervisor	2	10,000	2.40
Mechanic / Electrician	3	9,000	3.24
Sales Manager	1	8,500	1.02
Accountant	1	8,500	1.02
Staff	2	8,000	1.92
Skilled workers	3	7,500	2.70
Helpers	6	5,000	3.60
Total			**17.70**

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year respectively.
- The interest on term loan is taken at 12% per annum and on working capital it is 14% per annum.
- Price of raw material and selling price of finish products is taken at Rs. 35,000 / ton and Rs. 45,000 per ton respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

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   Galaxy Cinema, Bandra west, Mumbai -400 050
   M. 08447548575

2. Troika Processes Pvt. Ltd.
   6th Floor, Embassy Centre, Nariman Point,
   Mumbai – 400 021
   Tel. (022 2834429 , 28343334
   www. troikaindia.com

3. Veendeep Oil Tech Processes Pvt. Ltd.
   15, Neelkanth Commercial Complex, Bombay
   Tel . 2556 9853, 2556 9854.