

MUSTARD/RAPESEED OIL

PRODUCT CODE	: 211001023
QUALITY AND STANDARDS	: As per 'Agmark' and PFA Specifications. The ISI Specification for Mustard Oil is IS 546:1975 (2 nd Revised)
PRODUCTION CAPACITY	: Qty.: 9975 Tins (16 kg.) of Mustard Oil Value : Rs. 2,19,45,000.00 per annum Qty. 287 M.T. of Mustard Cake Value : Rs. 57,40,000.00 per annum
MONTH AND YEAR OF UPDATION	: February, 2021
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INTRODUCTION

Oil seed crop occupies an important position in the agricultural and industrial economy of the country and accounts for about 10 per cent of the total crop area. Mustard seed is one of the five major oil seeds from which edible oil is produced. Mustard oil is the medium of cooking in almost all the states of the Eastern Region, especially in West Bengal. It is also used for the purpose of massage. Mustard oil cake (by-product) is the common cattle feed which has got high nutritional value. It is also used as manure.

MARKET POTENTIAL

Mustard oil has enormous demand as one of the edible oils and used as cooking medium especially in Northern, Eastern and North Eastern India. Mustard oil is also used in preparation of pickles by the housewives and pickle manufacturing units.

BASIS AND PRESUMPTIONS

The profile is drawn on the basis of the following presumptions:

1. Working hours/shift : 8 hours
2. No. of shift/day : 1
3. Working days : 300
4. Total No. of working hours : 2400
5. Working efficiency : 75%
6. Time period for achieving maximum capacity utilisation : 3rd year from the date of start of production
7. Labour charges : As per the Minimum Wages Act of State Government.
8. Margin Money : 25% of Capital Investment

9. Rate of interest on : 15%
fixed and working
capital
10. Operative period : 10 years
of the project

Value of the machinery and equipment is estimated on the basis of prevailing prices in the market.

IMPLEMENTATION SCHEDULE

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

- | | |
|---|--------------------|
| 1. Scheme preparation and approval | 01month |
| 2. Udyam registration | 05 days |
| 3. Sanction of loan | 2-5 months |
| 4. Installation of Machinery and power connection | 6-8 months onwards |
| 5. Trial Run and Production | 8 months |

TECHNICAL ASPECTS

Process of Manufacture

The seeds are to be dried in sun (if these are not dried) and then cleaned by shakers to remove dust and foreign matter. The seeds are initially steamed and then passed through the expeller and the process is repeated till the maximum oil is extracted out of the seeds. The filtered oil is filled into containers which are subsequently sealed and labelled for marketing. On an average 33 to 35 per cent of recovery of oil from the seed is made depending upon the quality of the seeds.

Quality Control and Standards

The quality of oil should conform at least to the quality and standards laid down in PFA Act. However, for better marketing of this product, the standards may be maintained as per 'Agmark' specification. The ISI specification is No. IS:546:1975 (second revision). The entrepreneur may approach the appropriate authorities to get 'Agmark' or ISI specification for better marketing of the product.

Production Capacity

The estimated production capacity per annum is as follows:

Mustard Oil : 159.6 MT

Mustard Cake : 287 MT

Weight loss : 9.4 (approximately 2% of the raw material)

Motive Power

Total motive power required including plant, machinery and office fittings is 30 HP.

Pollution Control

The extraction of oil does not need any steps to be taken for the pollution control as no effluents are responsible for air and water pollution. However, the entrepreneurs are advised to take 'No Objection Certificate' from the State Pollution Control Board before the commencement of production.

Energy Conservation

The fuel for the steam production in the boiler is coal or oil (diesel) depending upon the type of boiler. Proper care should be taken while utilising the fuel for the production of steam. It should be fed depending upon the requirement of the steam in production. There should

be no leakage of steam in the pipe lines. While softening the seeds in the kettles, the over passing of the steam should also be avoided for better oil recovery and energy conservation.

FINANCIAL ASPECTS

A. Fixed Capital

i) Land and Building	Amount (In Rs.)
1. Land - 350 sq. meter @ Rs 400 per sq.m.	1,40,000
2. Covered area including work shed, godown, store, etc. 250 sq.m. @ Rs 3000 sq.mtrs with C.I.I. sheet roofing	7,50,000
3. Boundary wall and gate, etc.	80,000
4. Toilet, bathroom, etc.	50,000
Total	10,20,000

ii) Machinery and Equipment

Sl. Description No.	Qty.	Amount (In Rs.)
1. Baby oil expeller No. 1 extra heavy duty with single steel gear set and long heating kettle (Chamber size: 27" × 5") 9 bolts capacity 110kg./hr.	2 Nos.	3,84,000
2. 25 HP Motor with starter and switch	1 No.	40,000
3. Filter press frame type 14"×14"×14" plates plunger pump and filter cloth	1 No.	65,000
4. Ghani Bengal type	2 pair	85,000
5. Baby boiler 200 kg. capacity	1 No.	65,000
6. Oil storage tank	3 Nos.	18,000
7. Shaker screen with blower	1	28,000
8. Weighing scale blower type 100 kg. capacity		15,000

Sl. Description No.	Qty.	Amount (In Rs.)
<i>Electrification and installation charges @ 10% of the cost of machinery and equipment</i>		70,000
<i>Cost of belt, pulley, other tools, fixture etc.</i>		10,000
<i>Cost of office furniture and furnishing</i>		25,000
Total		8,05,000

iii) Preliminary and Pre-operative Expenses (Rs.)

Legal expenses, establishment cost, travelling, start-up expenses, consultancy fee, estimation fee, interest during construction, trial room expenses	80,000
Total Fixed Capital (i+ii+iii)	19,05,000

B. Working Capital (per month)

i) Personnel

(a) Administrative and Supervisory

Designation	No.	Amount (In Rs.)
a) Manager-cum-Chemist	1	13,000
b) Store keeper-cum- Accountant	1	8,500
c) Purchase-cum-Salesman	1	7,500
d) Chowkidar-cum-Peon	1	5,000
(b) Technical Staff		
a) Skilled Workers	2	15,000
b) Unskilled Workers	3	8,000
Total	9	57,000
<i>Add-perks and benefits 15%</i>		8,500
Total		65,500

ii) Raw Material

	Amount (In Rs.)
a) Mustard seeds 38 tonnes @ Rs.45000 per tonne on average	17,10,000
b) Tin Containers 16 kg. Cap. 830 Nos. @ Rs. 55 per Container	45,650

Raw Material	Amount (In Rs.)
c) Gunny bags 450 Nos. @ Rs. 35 per bag	15,750
d) Labels for container	4,500
Total	17,75,900

iii) Utilities	Amount (In Rs.)
a) Power - 3000 KWH @ 8.50 per KWH	25,500
b) Water	1500
c) Fuel for boiler	8,000
Total	35,000

iv) Other Contingent Expenses Amount (In Rs.)	
a) Stationery and postage	2000
b) Consumable store	2,000
c) Telephone	2,000
d) Repairs and maintenance	5,000
e) Transport charges	12,000
f) Advertisement and publicity	2,000
g) Insurance charges	1500
h) Other miscellaneous expenses	1500
Total	28,000

v) Working Capital (per month)
(i+ii+iii+iv) Rs. 19,04,400

vi) Working capital
(for 3 months) 19,04,400×3 Rs. 57,13,200

C. Total Cost of the Project

	Amount (In Rs.)
a) Total fixed Cost including land, building, plant and machinery etc.	19,05,300
b) Working capital margin @ 25%	14,28,300
Total	33,33,600

D. Total Capital Investment

	Amount (In Rs.)
i) Fixed Capital	19,05,300
ii) Working Capital (For three months)	57,13,200
Total	76,18,500

MACHINERY UTILIZATION

It is estimated that 75% crushing capacity of the expellers and filter press will be utilized. The power consumption has also been calculated considering average 6 hrs. per day working of the machinery.

FINANCIAL ANALYSIS

1) Cost of Production (per year)	Amount (In Rs.)
a) Total recurring cost	2,28,52,800
b) Depreciation on Building @ 5% p.a.	44,000
c) Depreciation on machinery and equipment @ 10% p.a.	80,500
d) Interest on total capital investment @ 15% p.a.	11,42,775
Total	2,41,20,075

2. Turnover (per year)	Amount (In Rs.)
Mustard oil 9975 tins @ Rs. 2200 per tin	2,19,45,000
Mustard cake 287 MT @ Rs. 20000 per MT	57,40,000
Total	2,76,85,000

3. Net Profit (per year) (Before Income Tax)

$$\begin{aligned}
 &= \text{Total Sales} - \text{Cost of production} \\
 &= 2,76,85,000 - 2,41,20,075 \\
 &= 35,64,925
 \end{aligned}$$

4. Net Profit Ratio

$$\begin{aligned}
 &= \frac{\text{Net profit per year} \times 100}{\text{Turnover per year}} \\
 &= \frac{35,64,925 \times 100}{2,76,85,000} \\
 &= 12.87\%
 \end{aligned}$$

5. Rate of Return

$$\begin{aligned}
 &= \frac{\text{Net profit per year}}{\text{Total Investment}} \\
 &= \frac{35,64,925 \times 100}{76,18,500} \\
 &= 46.0\%
 \end{aligned}$$

6. Break-even Point

i) Fixed Cost	Amount (In Rs.)
a) Depreciation on machine and equipment	80,500
b) Depreciation on Building @ 5% p.a.	44,000
c) Interest on total capital investment	11,42,775
d) Insurance charges	18,000
e) 40% of salary and wages	3,14,400
f) 40% of utilities and other expenses	3,02,400
Total	19,02,075
or Say	19,02,100

ii) Net Profit (per year) Rs. 35,64,925

$$\begin{aligned}
 \text{B.E.P.} &= \frac{\text{Fixed Cost} \times 100}{\text{Fixed cost} + \text{Net Profit}} \\
 &= \frac{19,02,100 \times 100}{54,67,025} \\
 &= 34.79\%
 \end{aligned}$$

ADDITIONAL INFORMATION

The project requires huge amount of working capital to stock the seeds during season to compete in the market. If the entrepreneur is not in a position to manage sufficient working capital, he should also crush the other seasonal edible oil seeds available at different time intervals.

Addresses of Machinery and Equipment Suppliers

- 1) M/s. Punjab Engg. Works
32, Ram Krishna Samadhi Road,
Kolkata - 54.
- 2) M/s. S.P. Engg. Co.
79/9, Latouche Road,
P.B. No. 218, Kanpur -
208 001.
- 3) M/s. Lyallpur Engg. Co.
G.T. Road, P.B. No. 8,
Gaziabad, U.P.
- 4) M/s. Delhi Iron and Steel Co.Pvt.
Ltd. G.T. Road,
Gaziabad(U.P).
- 5) M/s. Swastik Engg. Works
198, Panjara Pole Road,
Mumbai- 110004.
- 6) M/s. Parekh Machine Tools
5, Khetra Das Lane, Behind
Broadway Hotel, Kolkata -12

Raw Material Suppliers

Available in Local Markets.