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ADHESIVE. CHEMICAL, FOOD, PAINT, PHARMACEUTICAL, PIGMENT, SYNTHETIC RESIN INDUSTRIES, UNDER SMALL SCALE. TURN-KEY PROJECT. PLANT MACHINERY EQUIPMENTS AND PROCESS

**PROJECT FOR THE MANUFACTURE
OF OIL CAPACITY : 1MT PER DAY**

QUALITY AND STANDARDS

As per 'Agmark' and PFA Specifications. The ISI Specification for
Mustard Oil is 546 IS:1975 (2nd Revised).

PRODUCTI ON CAPACITY PER ANNUM

Qty : 300 MT Mustard Oil & 550 MT cake

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 produce) 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.

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 scaled and labeled 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. S :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	300 MT
Mustard Cake	550 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 to 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 utilizing 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

1. Land – 550 sq. meter
2. Covered area including work shed, godown, store etc. 250 sq.m. with C.I.I. sheet roofing.
3. Boundary wall and gate etc.
4. Toilet, bath room etc.

ii) Machinery and Equipment

			Amount (in Rs.)
Sl.No.	Description	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" x 5") 9 bolts capacity 110kg./hr.	2 nos.	7,86,000
2	25 HP Motor with starter and switch	1 no.	2,20,000
3	Filter press frame type No. 14" x14"X14" plates	1 no.	5,35,000
4	plunger pump and filter cloth. Ghani B'engal type	2 pair	5,45,000
5	Baby boilet 200 Kg. capacity	1 no.	7,35,000
6	Oil storage tank	3 nos.	6,09,000

7	Shaker screen with blower	1 set	1,15,000
8	Weighing scale blower type 100 kg. capacity		38,000
9	Auto pouch packaging 1set system 1 kg. & 500 gm	1 set	7,50,000
10	Electrification and installation charges @10% machinery and equipment.		2,35,000
11	Cost of belt, pulley, other tools, fixture etc.		25,000
12	Cost of office furniture and furnishing		1,15,000
		TOTAL	

Preliminary and Pre-operative Expenses (Rs.)

Legal expenses, establishment cost	
Traveling, start up expenses consultancy fee, estimation fee, interest during construction, trial room expenses.	1,40,000

B. Working Capital (per month)

i) Personal

(a) Administrative and Supervisory

	DESIGNATION	NO.
a)	Manager-cum-Chemist	1
b)	Store keeper, Accountant	2
c)	Purchase, salesman	2

d)	Chowkidar – cum – peon	2
	(b) Technical staff	
a)	Skilled workers	4
	Unskilled	8
	TOTAL :	19

Add – Perks and benefits 15%

TOTAL

ii) Raw Material per Month

- a) Mustard seeds 60 tonnes
- b) Tin Containers 16 Kg.

Raw Material per Month

- a) Gunny Bags 900 no.
- b) Label for container

iii) Utilities per month

- a) Power – 3,000 KWH
- b) Water 5 Kl.
- c) Fuel for boiler Diesel 1Kl.

iv) Other contingent Expenses :

- a) Stationery and postage
- b) Consumable store

- c) Telephone
- d) Repairs and maintenance
- e) Transport charges
- f) Advertisement and publicity
- g) Insurance charges
- h) Other miscellaneous expenses
- v) Working capital (Per month) (i+ii+iii+iv)
- vi) Working Capital (for 3 months)
- C. Total cost of the Project
 - a) Total fixed cost including land building, plant and machinery etc.
- b) Working capital margin @ 25%
- D. Total capital investment
 - i) Fixed Capital
 - ii) Working capital (for three months)

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)

- a) Total recurring cost

- a) Depreciation on Building @5% p.a.
- b) Depreciation on machinery and equipment @ 10% p.a.
- c) Interest total capital investment @15% p.a.

2. Turnover (per year)

Mustard oil 300 MT.

Mustard cake 550 MT.

ADDITIONAL INFORMATION

The project requires huge amount of working capital to stock the seeds during season to complete 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.