# MUSTARD OIL EXPELLER

## 1. Introduction

While mustard seeds are abundantly produced in most parts of India, its milling/grinding is mostly done by the large centralized plants, which have the advantage of high efficiency and reduced costs due to economies of scale. Despite the clear advantage of large plants, the importance of tiny decentralized oil extraction units cannot be discounted as they also prove to be economic and present opportunities for self-employment in situations: where oil produced by large plants do not find its way to remote and distant places because of high transportation costs involved in wider distribution and in places where there is no oil expeller in the area and the farmers sell oil seeds to large refineries which they then buy back at high cost in the form of cooking oil but without the valuable high protein oil cake. Therefore, in recognition of the existing opportunities of setting-up mustard oil expeller units in such situations, tiny units are suggested for the first generation Tribal entrepreneurs - the investment for which is modest and the operation is simple.

The unit is required to maintain a minimum stock of seed and enough to continue operations throughout the year. Hence, the location of the unit has to be essentially in those areas where the raw material is locally available in abundance.

In general, more profit could be made if the cooking oil is packed into retail size bottles. However, considering the difficulty in obtaining glass or plastic bottles in large quantities in remote areas and blocking thereby substantial capital, the possibility of using second-hand bottles may be utilised. Alternatively, oil could be sold in drums to the provision stores in neighboring towns/cities.

The viability of any oil extraction unit considerably depends on the sale of the oil cake, which is extensively used as animal feed and other sub-products.

## 2. Market potential

Mustard oil is widely used edible oil especially in rural North and Eastern India. Its consumption is ever increasing with the growth of rural population. The tiny units are aimed to cater to local market and there is abundant potential to meet local requirement.

## 3. Technical details

In India, in particular, a wide range of efficient small or " Baby" oil expellers are available in the market. A typical example is an oil expeller of as low a capacity of up to

100 Kg//hr. Such machine has a central cylinder or cage fitted with eight separate sections called "worms". This flexible system allows the use of single or double reverses and spreads the wear & tear more evenly along the screw. In the event of the screw getting worn out- only that particular unit / section is required to be repaired/changed thus reducing maintenance cost. As the material passes through the expeller, oil is squeezed out and flows through the perforated cage into a trough under the machine. The solid residue i.e., the oil cake is expelled from the back end of the expeller shaft where it is separately bagged.

**4. Cost of project**

| **S. No.** | **Particulars** | **Amount (in Rs.)** |
|---|---|---|
| 1. | Land | Own |
| 2. | Factory Shed & Godown (50 Sq.mt. @ Rs.200/- Sq.mt.) | 10,000.00 |
| 3. | Machineries & Equipment | |
| a) | 2 Nos. of Baby oil expeller complete with motor (5 H.P.) @ Rs. 25,000.00 each | 50,000.00 |
| b) | Tools and Accessories | 2,000.00 |
| 4. | Electrification & Installation | 8000.00 |
| 5. | Misc. Fixed Assets | 2,000.00 |
| 6. | Preliminary & Pre-operative Expense. | 2,000.00 |
| 7. | Provision for Contingencies | 2,000.00 |
| 8. | Margin for working capital | 32000.00 |
| | **TOTAL** | **1,08,000.00** |

**5. Means of finance**

| **S. No.** | **Particulars** | **Amount (in Rs.)** | **%age** |
|---|---|---|---|
| 1. | Promoter's Contribution. | 3000.00 | 2.78 |
| 2. | M.M.L.- SCA. | 12000.00 | 11.11 |
| 3. | Term Loan- NSTFDC | 93000.00 | 86.11 |
| | **TOTAL** | 1,08,000.00 | 100.00 |

**Note:** The State Channelising Agencies shall arrange to provide subsidy to beneficiary(ies) as per norms of their Corporation. Further, SCAs may also make efforts to avail incentive/subsidy from other centrally sponsored schemes.

**6. Working capital requirements**

| **S. No.** | **Particulars** | **Amount (in Rs.)** |
|---|---|---|
| 1. | Stock of 75 Quintals of Mustard Oil seeds @ Rs.1600.00 per Quintal | 1,20,000.00 |
| 2. | Bottles & Packaging Materials | 4,000.00 |
| 3. | Salary & Wages (1 month) | 4,000.00 |

| | | |
|---|---|---|
| 4. | Goods in Process | 10,000.00 |
| 5. | Finished Goods | 20,000.00 |
| | **TOTAL** | **1,58,000.00** |
| 6. | Margin for Working Capital @ 20% | 31,600.00 |
| | **SAY** | **32,000.00** |
| 7. | Loan from bank/financial institution | 1,26,000.00 |

**7. Salary & wages per annum**

| **S. No.** | **Particulars** | **Nos.** | **Salary (Rs) p.m.** | **Salary (Rs) p.a.** |
|---|---|---|---|---|
| 1. | Manager | Self | | |
| 2. | Skilled Worker | 1 | 2,500.00 | 30,000.00 |
| 3. | Helper | 1 | 1,500.00 | 18,000.00 |
| | | **TOTAL** | **4,000.00** | **48,000.00** |

**8. Overhead expenses per annum**

| **S. No.** | **Particulars** | **Amount (in Rs.)** |
|---|---|---|
| 1. | Printing & Stationery | 2,000.00 |
| 2. | Repair & Maintenance | 2,000.00 |
| 3. | Traveling & Conveyance | 1,500.00 |
| 4. | Electricity | 18,000.00 |
| 5. | Misc. Expenses | 1,000.00 |
| | **TOTAL** | **24,500.00** |

**9. Raw material requirement**

| **S. No.** | **Year** | **Qty. of Mustard oil Seeds** | **Rate per Qtl.(Rs)** | **Amount (in Rs.)** |
|---|---|---|---|---|
| 1. | 1st. Year | 300 Qtls. | 1,600.00 | 4,80,000.00 |
| 2. | 2nd Year | 330 Otls. | 1,600.00 | 5,28,000.00 |
| 3. | 3rd Year onwards | 360 Otls. | 1,600.00 | 5,76,000.00 |

**10. Depreciation on SLM**

| **S. No.** | **Assets** | **Amount (Rs.)** | **Rate of Dep.** | **Amount (in Rs.)** |
|---|---|---|---|---|
| 1. | Machineries | 52,000 | 10% | 5,200.00 |
| 2. | Misc. Fixed Assets & Electrical | 9,500 | 10% | 950.00 |
| 3. | Building/ Shed | 10,000 | 5% | 500.00 |
| | | | **TOTAL** | **6,650.00** |

**11. Sale proceeds per annum (At 80% utilization)**

| **S. No.** | **Particulars** | **Amount (in Rs.)** |
|---|---|---|
| 1. | Extraction and sale of 10,500 lt. of Mustard Oil (@ Rs.60/- per Kg.) out of 30,000 Kg of Mustard Seeds. | 6,30,000.00 |

| | | |
|---|---|---|
| 2. | Mustard Oil Cake (Residue) 18,000 Kg. @ Rs.5/- per Kg. | 90,000.00 |
| | **TOTAL** | **7,20,000.00** |

**12. Project economic**

| **S. No.** | **Particulars** | **Amount (in Rs.)** |
|---|---|---|
| **A.** | **No. of working days** | **300.00** |
| **B.** | **Capacity Utilisation (%)** | **80.00** |
| **C.** | **Sales Realisation** | **7,20,000.00** |
| **D.** | **Cost of Production** | |
| (i) | Raw materials | 4,80,000.00 |
| (ii) | Bottles & Packaging | 48,000.00 |
| (iii) | Salary / Wages & S.A. | 96,000.00 |
| (iv) | Overhead Exp. | 24,500.00 |
| | **TOTAL** | **6,48,500.00** |
| **E.** | **Gross Profit** | **71,500.00** |
| **F.** | **Interest on loan and working capital** | **21,400.00** |
| **G.** | **Depreciation** | **6,650.00** |
| **H.** | **Net Profit** | **43,450.00** |
| **I.** | **Cash Profit** | **50,100.00** |

**13. Viability indicators**

| **S. No.** | **Particulars** | **Amount** |
|---|---|---|
| 1. | Repayment per annum (period - 5 years) | 21,000.00 |
| 2. | Return on investment | 40.23% |
| 3. | Debt service coverage ratio | 1.69 |

**14. Interest, moratorium & repayment period for beneficiaries**

(a) Interest : 6% p.a. on NSTFDC term loan

(b) Moratorium period : 6 months from date of release of funds by SCA.

(c) Repayment period : 5 years excluding moratorium period.

**15. Assumptions/remarks**

- Optimum working capital cycle has been considered for calculating the requirements. Raw materials shall be procured from local areas and quotations, wherever applicable may be obtained.
- The cost of project will vary in different States & Regions.

It is assumed that the products have good demand, and the promoters have sound experience in the relevant fields.