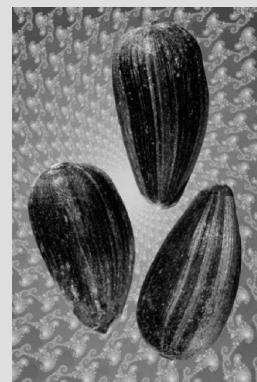


# DEHULLED SUNFLOWER SEEDS



## 1.0 INTRODUCTION

Sunflower seeds are one of the major oilseeds containing 35-50% oil and 17-25% protein. This seed is coated with dry brittle hull. High fibre, low protein and high wax content are the major constraints in obtaining better yield of oil and high quality protein. Hence, dehulling of seeds is important.

## 2.0 PRODUCT

### 2.1 Applications

Dehulled sunflower seeds have many applications. The major application is in extracting high quality edible oil. These seeds are also used in preparation of snacks, confectionery and chikkies. Edible quality cake and flour are also produced.

Sunflower seeds are cultivated in many states with Karnataka, Tamilnadu, AP, UP and Maharashtra being the major producers.

### 2.2 Availability of Technology

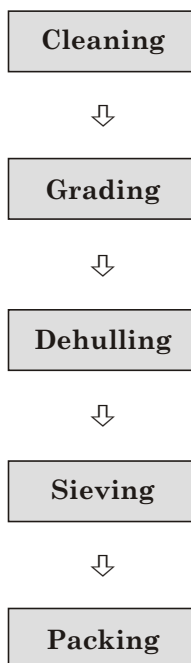
CFTRI has developed the technology.

## 3.0 MARKET POTENTIAL

Consumption of edible oil is increasing every year and with increasing awareness about health, sunflower oil is being preferred in view of high proteins. Dehulling of oilseeds not only results in higher recovery of oil but also in retaining high percentage of protein. Other applications of dehulled seeds are also increasing continuously.

#### 4.0 MANUFACTURING PROCESS

It is completely standardised. All impurities are separated by aspiration and then cleaned seeds are graded with the help of vibrating sieve. Then dehulling is done with the help of sheller. Finally, seeds are sieved to separate kernels, broken, fines and hulls. A typical process flow chart is as under:



#### 5.0 CAPITAL INPUTS

##### 5.1 Land & Building

A plot of 250 sq.mtrs. with built-up area of 100 sq.mtrs. and storage yard of 50 sq.mtrs. shall be needed. Land may cost Rs. 75,000/- whereas factory building and storage yard would need Rs. 3.25 lacs.

##### 5.2 Machinery

For installation of annual rated capacity of 300 tonnes with 2 shift working and 250 working days, following equipments shall be required.

(Rs. in lacs)

Particulars	Qty	Amount
Destoners	2	0.80
Graders	2	1.30
Dehuller	2	1.20
Air-classifiers	2	0.60
Sieves	--	0.60
Weighing scales, stitching machines etc.	--	0.50
	<b>Total</b>	<b>5.00</b>

### 5.3 Miscellaneous Assets

Other assets like storage bins, furniture & fixtures, office equipments would need around Rs. 1.00 lac.

### 5.4 Utilities

Power requirement shall be 30 KW whereas water shall be required mainly for potable and sanitation purposes.

### 5.5 Raw and Packing Materials

The only raw material will be sunflower seeds and even though monthly requirement is not much, prior arrangements are advisable. Second-hand or used gunny bags will be the packing material.

## 6.0 MANPOWER REQUIREMENTS

Particulars	No	Monthly Salary (Rs.)	Total Monthly Salary (Rs.)
Skilled Workers	2	2,500	5,000
Semi-skilled Workers	2	1,750	3,500
Helpers	4	1,500	6,000
		<b>Total</b>	<b>14,500</b>

## 7.0 TENTATIVE IMPLEMENTATION SCHEDULE

Activity	Period (in months)
Application and sanction of loan	2
Site selection and commencement of civil work	1
Completion of civil work and placement of orders for machinery	4
Erection, installation and trial runs	1

## 8.0 DETAILS OF THE PROPOSED PROJECT

### 8.1 Land and Building

Total expenditure under this head is likely to be Rs. 4.00 lacs as stated before.

### 8.2 Machinery

Cost of machinery is estimated to be Rs.5.00 lacs, as explained earlier.

### 8.3 Miscellaneous Assets

A provision of Rs. 1.00 lacs would take care of other assets as stated before.

### 8.4 Preliminary and Pre-Operative Expenses

An amount of Rs. 1.25 lacs would be needed towards pre-production expenses.

### 8.5 Working Capital Requirement

At 60% capacity utilisation in the first year, the total working capital needs would be as under.

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Raw and Packing Materials	½ Month	30%	0.80	0.55	0.25
Stock of Finished Goods	½ Month	25%	1.00	0.75	0.25
Receivables	½ Month	25%	1.30	1.00	0.30
Working Expenses	1 Month	100%	0.35	--	0.35
		<b>Total</b>	<b>3.45</b>	<b>2.30</b>	<b>1.15</b>

### 8.6 Cost of the Project and Means of Financing:

(Rs. in lacs)

Items	Amount
Land and Building	4.00
Machinery	5.00
Miscellaneous Assets	1.00
Preliminary and Pre-operative Expenses	1.25
Contingencies @ 10% on land and building and machinery	0.90
Working Capital Margin	1.15
<b>Total</b>	<b>13.30</b>
<b>Means of Finance</b>	
Promoter's Contribution	3.90
Term Loan from Bank/FI	9.40
<b>Total</b>	<b>13.30</b>
Debt Equity Ratio	2.41 : 1
Promoters' Contribution	29%

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.

## 9.0 PROFITABILITY CALCULATIONS

### 9.1 Production Capacity and Build-up

As against the rated capacity of 300 tonnes per season, actual utilisation in the first year is assumed to be 60% and thereafter it is limited to 75%.

### 9.2 Sales Revenue at 100%

Assuming selling price of Rs. 18,000/- per ton, the sales realisation at 100% after accounting for 5% process loss would be Rs. 51.30 lacs.

### 9.3 Raw and Packing Materials Required at 100%

Price of sunflower seeds is assumed to be Rs. 10,000/- per ton and hence annual cost at 100% would be Rs. 30.00 lacs. Cost of packing material is assumed to be Rs. 2.00 lacs.

### 9.4 Utilities

Annual cost of water and power would be Rs. 1.50 lacs.

### 9.5 Interest

Interest on term loan of Rs. 9.40 lacs is calculated @ 12% per annum assuming repayment in 5 years including a moratorium period of 1 year whereas on working capital from bank, it is calculated @ 14% every year.

### 9.6 Depreciation

It is calculated on WDV basis @ 10% on building and 20% on machinery and miscellaneous assets.

## 10.0 PROJECTED PROFITABILITY

(Rs. in lacs)

No	Particulars	1st Year	2nd Year
<b>A</b>	<b>Installed Capacity</b>	--- 300 tonnes ---	
	Capacity Utilisation	60%	75%
	Sales Realisation	30.80	38.50
<b>B.</b>	<b>Cost of Production</b>		
	Raw and Packing Materials	19.20	24.00
	Utilities	0.90	1.12
	Salaries	1.74	2.05
	Stores and Spares	0.24	0.36
	Repairs and Maintenance	0.30	0.42
	Selling Expenses @ 10%	3.08	3.85
	Administrative Expenses	0.60	0.75
	<b>Total</b>	<b>26.06</b>	<b>32.55</b>
<b>C.</b>	<b>Profit before Interest &amp; Depreciation</b>	<b>4.74</b>	<b>5.95</b>
	Interest on Term Loan	1.13	0.91
	Interest on Working Capital	0.32	0.40
	Depreciation	1.53	1.25
	Profit before Tax	1.76	3.39
	Income Tax @ 20%	0.35	0.69
	Profit after Tax	1.41	2.70
	Cash Accrual	2.94	3.95
	Repayment of Term Loan	-	2.35

**11.0 BREAK-EVEN POINT ANALYSIS**

(Rs. in lacs)

No.	Particulars	Amount	
<b>A</b>	<b>Sales</b>		<b>38.50</b>
<b>B</b>	<b>Variable Cost</b>		
	Raw and Packing Materials	24.00	
	Utilities (70%)	0.78	
	Salaries (70%)	1.44	
	Stores and Spares	0.36	
	Selling Expenses (70%)	2.70	
	Administrative Expenses (50%)	0.38	
	Interest on working capital	0.40	<b>30.06</b>
<b>C</b>	<b>Contribution</b>		<b>8.44</b>
<b>D.</b>	<b>Fixed Cost</b>		<b>5.05</b>
<b>E.</b>	<b>Break-Even Point (D ÷ C)</b>		<b>60%</b>

**12.0 [A] LEVERAGES****Financial leverage:**

$$= \text{EBIT/EBT}$$

$$= 4.70 \div 3.39$$

$$= 1.39$$

**Operating Leverage**

$$= \text{Contribution/EBT}$$

$$= 8.44 \div 3.39$$

$$= 2.49$$

**Degree of Total Leverage**

$$= \text{FL/OL}$$

$$= 1.39 \div 2.49$$

$$= 0.56$$

**[B] Debt Service Coverage Ratio (DSCR)**

(Rs. in lacs)

Particulars	1st Yr	2nd Yr	3rd Yr	4th Yr	5th Yr
Cash Accruals	2.94	3.95	4.35	4.76	5.07
Interest on Term Loan	1.13	0.91	0.63	0.35	0.19
<b>Total (A)</b>	<b>4.07</b>	<b>4.86</b>	<b>4.98</b>	<b>5.11</b>	<b>5.26</b>
Interest on Term Loan	1.13	0.91	0.63	0.35	0.19
Repayment of Term Loan	--	2.35	2.35	2.35	2.35
<b>Total (B)</b>	<b>1.13</b>	<b>3.26</b>	<b>2.98</b>	<b>2.70</b>	<b>2.54</b>
<b>DSCR (A) ÷ (B)</b>	<b>3.60</b>	<b>1.49</b>	<b>1.67</b>	<b>1.89</b>	<b>2.07</b>
<b>Average DSCR</b>	----- 2.14 -----				

**[C] Internal Rate of Return (IRR)**

Cost of the project is Rs. 13.30 lacs.

(Rs. in lacs)

Year	Cash Accruals	16%	18%	20%	24%
1	2.94	2.53	2.49	2.45	2.37
2	3.95	2.93	2.84	2.74	2.57
3	4.35	2.79	2.65	2.52	2.28
4	4.76	2.63	2.46	2.29	2.01
5	5.07	2.41	2.22	2.04	1.73
6	5.41	2.22	2.00	1.81	1.49
	<b>26.48</b>	<b>15.51</b>	<b>14.66</b>	<b>13.85</b>	<b>12.45</b>

The IRR is around 22%.

Some of the machinery suppliers are

- 1) Lakhanpal Food Processing Machinery, 36/6 Balkashwar Road, Agra 282 004,  
Tel. No. : 2540726, Fax : 2540789
- 2) Flour Tech Engineers Pvt Ltd, 16/5, Mathura Road, Faridabad 121 002,  
Tel. No. : 2263017, 2291556, Fax: 2291556
- 3) Vashist Fodo Pvt Ltd, 315 Ambika Vihar, New Delhi 110 087, Tel. No. : 25271619, 25271636
- 4) Sifter International, Plot No 83, Sector 6, Faridabad 121 006,  
Tel. No. : 25271619, 25271636, Fax : 2230039
- 5) Process Masters, S-97, MIDC Bhosari, Pune, Tel. No. : 27123448

**Note**

This is only a project profile and the promoters are required to submit a detailed Techno Economic Feasibility Report along with the following documents while applying for financial assistance or registrations.

1. Application in the prescribed format.
2. IEM/SSI Registration Certificate.
3. MMPO/FPO Licence, if required.
4. NOC from the concerned Pollution Control Board.
5. Certificate of Incorporation or a copy of Partnership Deed.
6. List of Plant & Machinery along with quotations.
7. Estimates for civil work and building layout.
8. Proof of Land Title/Lease Deed (Notarised translation if in vernacular language).
10. In case of existing units, latest balance sheet and profit & loss account duly certified by CA.