



## **DETAILED PROJECT REPORT**

### **BAHEDA OIL UNIT**

### **UNDER PMFME SCHEME**



National Institute of Food Technology Entrepreneurship and Management

Ministry of Food Processing Industries

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**1. PROJECT SUMMARY**

1. Name of the proposed project	:	Baheda Oil Unit
2. Nature of proposed project	:	Proprietorship/Company/Partnership
3. Proposed project capacity	:	142500 Ltr/annum (40,45,50,55&60% capacity utilization in 1 <sup>st</sup> to 5 <sup>th</sup> Year respectively)
4. Raw material	:	Baheda Fruits
5. Major product outputs	:	Baheda Oil
6. Total project cost	:	Rs. 32.80 Lakh
• Land development, building & Civil Construction	:	Nil
• Machinery and equipment's	:	Rs. 25.10 Lakh
• Miscellaneous Fixed Assets	:	Rs. 2.50 Lakh
• Working capital	:	Rs. 5.20 Lakh
7. Means of Finance		
• Subsidy (max 10lakhs)	:	Rs. 9.66 Lakh
• Promoter's contribution (min10%)	:	Rs. 3.27 Lakh
• Term loan	:	Rs. 15.18 Lakh
• Working Capital Requirement	:	Rs. 4.68 Lakh
8. Profit after Depreciation, Interest & Tax		
• 1 <sup>st</sup> year	:	Rs. 2.10 Lakh
• 2 <sup>nd</sup> year	:	Rs. 5.19 Lakh
• 3 <sup>rd</sup> year	:	Rs. 7.86 Lakh
• 4 <sup>th</sup> year	:	Rs. 10.64 Lakh
• 5 <sup>th</sup> year	:	Rs. 13.32 Lakh
9. Average DSCR	:	Rs. 2.98
10. Term loan repayment	:	5 Years with 6 months grace period

## **2. ABOUT THE PRODUCT**

### **2.1. PRODUCT INTRODUCTION:**

*Terminalia belerica* Roxb from the family Combretaceae is a large deciduous tree up to 50m tall and diameter of 3m. The name terminalia belong to the Latin word terminus and refers to the leaves being crowded and or borne to the tip of shoot. Flowers are green - yellow, spender spikes longer than the petioles, borne in axillary and having offensive odour. Fruit is 2.5 cm long, silky-brownish-velvety and globose or narrowed at the base. It is referred as Beleric Myrobalan in English, Bhibhitaki in Sanskrit and locally known as Bahera in India. It is widely distributed throughout the world especially in India subcontinent, Pakistan, South East Asia, and Nepal.

The principle of phytoconstituent is beta sitosterol, gallic acid, ethyl gallate, chebulagic acid, egallic acid. Fruit contains terpenoid acid, saponins and tannins. Seed contains alkaloids, coumarin, flavone, glycosides. Bark contain beta sitosterol, tannins, egallic acid, gallic acid and catechol. Baheda oil is used extensively in cosmetic industry for hair growth, anti-ageing and skin treatment. Baheda oil is also used for body message. It can be used in cooking oil alone or in combination with other oils.

### **2.2. MARKET POTENTIAL:**

Baheda is large deciduous and evergreen tree which goes to the height of 30 m and found mostly to the foothills of Himalaya.

During the recent past, there has been resurgence in the study and use of medicinal plants. Herbal products are increasingly become mainstream consumer products manufactured by multinational corporates and sold globally in supermarket chain and variety of other outlets.

Rising awareness for chemical free products, adverse effect of chemicals and changing perception about natural product, are increasingly manifesting themselves in the form of traditional medicinal products in market.

Increased consumer sophistication, awareness of ingredients, performance of ingredients and health benefits are changing personal care and cosmetics industry. Increasing demand of natural ingredients in cosmetic industry are raising the demand for herbal products. Baheda oil prevents hair problem such as hair fall, hair whitening, promotes hair growth, treats acnes and prevents skin ageing hence Baheda oil is increasingly used in cosmetics products.

There is increase in popularity of the oil obtained from the whole plant or part of plant to promote balance and harmony between mind and body, providing active ingredients, defined constituents and specific biological effects.

Government is now introducing initiatives for promoting use of herbal products as well as providing incentives for extensive R&D of herbal products will also positively impact the demand of these products. The government has set up department AYUSH to promote Ayurveda, herbal and traditional ingredients production and use. The Indian government has also incentivized the industry by lowering GST on Ayurveda and herbal products to only 5 % to encourage the processing in sector.

### **2.3. RAW MATERIAL DESCRIPTION:**

The raw material requirement for production of Baheda oil is Baheda fruits.

### **3. PROCESS FLOW CHART**

#### **Extraction of oil**

##### **Harvesting**

Mature fruits of Baheda are collected usually in the month of October – November whereas the oil is extracted preferably during summer season. The Baheda seeds were obtained by breaking the outer shell.

##### **Seeds cleaning**

The seeds are cleaned to remove any sign of dirt, impurities and blemishes on the seeds. This includes separation of tissues and pebbles also to protect the processing equipment and to enable production of high-quality oil.

##### **Drying of the oil seeds**

To remove hull effectively moisture content of 10% is needed, which requires drying prior to dehulling. The kernels are dried at 100°C for 6hrs. hot air is circulated through oil seeds to achieve some loss of water followed by cooling.

##### **Dehulling**

The objective of dehulling is to separate seed coat which helps in reducing anti nutritional factors in seeds.

##### **Extraction**

Extraction of the oil from the mesh is achieved with the help of screw, hydraulic or centrifugal presses. This method is known as dry method.

When hot water is used to extract oil from ruptured cells of oil seeds, this method is known as wet extraction method.

### **Refining of oil**

Crude oil obtained from extraction contain several non-triglyceride components which must be removed. In refining, physical and chemical process are combined to remove undesirable natural component from crude oil.

### **Neutralization**

The objective of neutralization is to remove FFA from crude oil. The crude oil is treated with sodium hydroxide solution (caustic soda) or sodium carbonate. The process is called as alkali neutralization.

### **Degumming**

Degumming targets impurities like phospholipids and other polar lipids (gums). The Objective of degumming is to reduce gums in extracted oil as these gums leads to brown discoloration of oil after heating during deodorization. The oil is subjected to water degumming process immediately following extraction. In this process water is added into the oil. After certain period, hydrated phosphatides can be separated either by decantation or by centrifugal removal.

### **Bleaching**

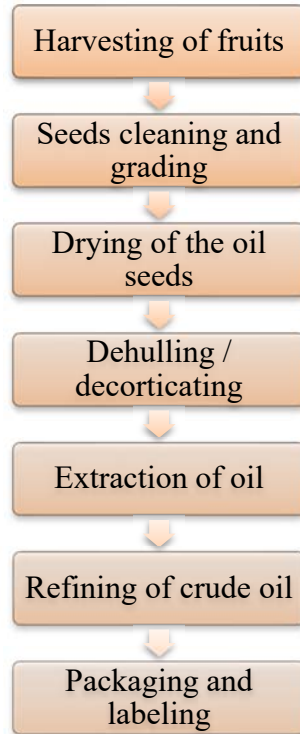
Like degumming, bleaching is also important step in refining of oil. The process of bleaching is performed for the removal of pigment (chlorophyll or carotenoid) and auto oxidation products using charcoal or clay. The bleached oil is removed from adsorbent by filtration.

### **Deodorizing**

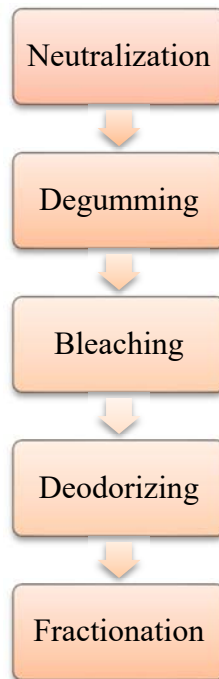
Deodorization involves vacuum steam distillation 190 – 230°C, 0.5- 10 mbar. The volatile compound together with undesirable odorant present in the fat or oil are removed in this step. The process is carried out for 2 hours followed by cooling.

### **Fractionation**

It involves allowing the oil to stand for some time at low temperature so that glycerides, with high melting point can be solidified and removed from the oil.



Flow chart of Baheda oil extraction process



Flow Chart of Crude Oil Refining Process



## **4. ECONOMICS OF THE PROJECT**

### **4.1. BASIS & PRESUMPTIONS**

1. Production Capacity of Baheda Oil is 500 Ltr. per day. First year, Capacity has been taken @ 40%.
2. Working shift of 8 hours per day has been considered.
3. Raw Material stock is for 7 days and Finished goods Closing Stock has been taken for 7 days.
4. Credit period to Sundry Debtors has been given for 20 days.
5. Credit period by the Sundry Creditors has been provided for 7 days.
6. Depreciation and Income tax has been taken as per the Income tax Act, 1961.
7. Interest on working Capital Loan and Term loan has been taken at 11%.
8. Salary and wages rates are taken as per the Current Market Scenario.
9. Power Consumption has been taken at 24 KW.
10. Increase in sales and raw material costing has been taken @ 5% on a yearly basis.

## 4.2. CAPACITY, UTILIZATION, PRODUCTION & OUTPUT

<b><u>COMPUTATION OF PRODUCTION OF BAHEDA OIL</u></b>		
<b>Items to be Manufactured</b>		
Baheda Oil		
Total working Hours	8	
Plant capacity Per Day	500	Ltr
Working days in a month	25	Days
Working days per annum	300	
Wastage Considered	5%	
Raw material requirement	150000	Ltr
Final Output per annum after wastage	142500	Ltr
Final Product to be packed in 1 Ltr. Bottles		
Number of Bottles per annum	142500	1 Ltr. Bottle

<b>Production of Baheda Oil</b>		
<b>Production</b>	<b>Capacity</b>	<b>Ltr</b>
1st year	40%	57,000
2nd year	45%	64,125
3rd year	50%	71,250
4th year	55%	78,375
5th year	60%	85,500

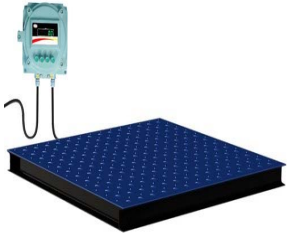


<b>Raw Material Cost</b>			
<b>Year</b>	<b>Capacity Utilisation</b>	<b>Rate (per kg.)</b>	<b>Amount (Rs. in lacs)</b>
1st year	40%	35.00	21.00
2nd year	45%	37.00	24.98
3rd year	50%	39.00	29.25
4th year	55%	41.00	33.83
5th year	60%	43.00	38.70





<b>COMPUTATION OF SALE</b>					
<b>Particulars</b>	<b>1st year</b>	<b>2nd year</b>	<b>3rd year</b>	<b>4th year</b>	<b>5th year</b>
Op Stock	-	1,330	1,496	1,663	1,829
Production	57,000	64,125	71,250	78,375	85,500
Less : Closing Stock	1,330	1,496	1,663	1,829	1,995
<b>Net Sale</b>	<b>55,670</b>	<b>63,959</b>	<b>71,084</b>	<b>78,209</b>	<b>85,334</b>
Sale price per bottle	110.00	116.00	122.00	128.00	134.00
<b>Sales (in Lacs)</b>	<b>61.24</b>	<b>74.19</b>	<b>86.72</b>	<b>100.11</b>	<b>114.35</b>

### 4.3. PREMISES/INFRASTRUCTURE

The approximate total area required for complete factory setup is 3000-4000 Sq. ft. for smooth production including storage area. It is expected that the premises will be on rental.

#### 4.4. MACHINERY & EQUIPMENTS

Machine Name	Description	Machine Image.
Electronic Weighing Scale	It is used to weigh the amount of raw material received from the supplier after unloading from vehicle. It is provided with indicator which helps in simple weighing and tared weighing. It provides reliable and accurate weighing.	
Oil Seed Cleaning & Grading Machine	Seed cleaning and grading machine helps to clean various seeds and grading such as wheat, corn, coffee beans etc. it consists of vibratory sifter, destoner, bucket elevator and motors. The sifter is used for removal of impurities such as leaves, sticks and impurities from grain stream. Destoner removes stones, metals and other high-density material.	
Tray Dryer	Industrial tray drying machine / Hot air-drying machine is made with stainless steel and equipped with plastic, stainless steel and customized drying racks.	
Hydraulic Oil Press Machine	Hydraulic oil press machine is used for extraction of sesame oil, peanut oil and other	

	<p>oils. Hydraulic oil press machine uses the principle of liquid static pressure transmission to hydraulic pressure as the transmission medium to squeeze oil and pressed out of squeezing equipment.</p>	
<p>Multifunctional Oil Refinery Equipment</p>	<p>It consists of Refining tank, steam generator, deodorization tank and filter press.</p>	
<p>Oil Filling &amp; Packaging Machine</p>	<p>Oil filling machine consists of filling nozzle, when filling sealing ring is opened and when filling is completed the sealing is blocked up. Consist of cap pressing machine, bottle caps automatically go into bottle cap slot by adopting cap pulling device. The machine consists of conveyor to convey filled and empty bottles. The machine can be used for glass bottle as well as plastic bottle.</p>	
<p>Material handling and other Equipment's</p>	<p>These Equipment's are used for material handling. Other equipment's like water pumps, motors, etc are also used.</p>	

<b>Machine</b>	<b>Unit</b>	<b>Rate</b>	<b>Price</b>
Seed Cleaning & Grading Machine	1	340000	340000
Tray Dryer	1	120000	120000
Hydraulic Oil Press Machine	1	150000	150000
Multifunctional Oil Refinery Equipment	1	1700000	1700000
Oil Filling & Packaging Machine	1	150000	150000
Material handling and other equipment's (Bins, trolley, weighing machine, etc.)	-	50000	50000

**Note:** Total Machinery cost shall be Rs 25.10 lakh including equipment's but excluding GST and Transportation Cost.

#### **4.5. MISCELLANEOUS FIXED ASSETS**

- Water Supply Arrangements
- Furniture & Fixtures
- Computers & Printers

**4.6. TOTAL COST OF PROJECT**

<b>COST OF PROJECT</b>	
	(in Lacs)
<b>PARTICULARS</b>	<b>Amount</b>
Land & Building	Owned/Rented
Plant & Machinery	25.10
Miscellaneous Assets	2.50
Working capital	5.20
<b>Total</b>	<b>32.80</b>

**4.7. MEANS OF FINANCE**

<b>MEANS OF FINANCE</b>	
<b>PARTICULARS</b>	<b>AMOUNT</b>
Own Contribution (min 10%)	3.27
Subsidy @35%(Max. Rs 10 Lac)	9.66
Term Loan @ 55%	15.18
Working Capital (Bank Finance)	4.68
<b>Total</b>	<b>32.80</b>

**4.8. TERM LOAN:** Term loan of Rs. 15.18 Lakh is required for project cost of Rs. 32.80 Lakh

**4.9. TERM LOAN REPAYMENT& INTEREST SCHEDULE**

<b>REPAYMENT SCHEDULE OF TERM LOAN</b>								
							Interest	11.00%
<b>Year</b>	<b>Particulars</b>	<b>Amount</b>	<b>Addition</b>	<b>Total</b>	<b>Interest</b>	<b>Repayment</b>	<b>Closing Balance</b>	
<b>1st</b>	Opening Balance							
	1st month	-	15.18	15.18	-	-	15.18	
	2nd month	15.18	-	15.18	0.14	-	15.18	
	3rd month	15.18	-	15.18	0.14	-	15.18	
	4th month	15.18	-	15.18	0.14		15.18	
	5th month	15.18	-	15.18	0.14		15.18	
	6th month	15.18	-	15.18	0.14		15.18	
	7th month	15.18	-	15.18	0.14	0.28	14.90	
	8th month	14.90	-	14.90	0.14	0.28	14.62	
	9th month	14.62	-	14.62	0.13	0.28	14.34	
	10th month	14.34	-	14.34	0.13	0.28	14.06	
	11th month	14.06	-	14.06	0.13	0.28	13.77	
	12th month	13.77	-	13.77	0.13	0.28	13.49	
					1.49	1.69		
<b>2nd</b>	Opening Balance							
	1st month	13.49	-	13.49	0.12	0.28	13.21	
	2nd month	13.21	-	13.21	0.12	0.28	12.93	
	3rd month	12.93	-	12.93	0.12	0.28	12.65	
	4th month	12.65	-	12.65	0.12	0.28	12.37	



PM FME- Detailed Project Report of Baheda Oil Unit

	5th month	12.37	-	12.37	0.11	0.28	12.09
	6th month	12.09	-	12.09	0.11	0.28	11.81
	7th month	11.81	-	11.81	0.11	0.28	11.53
	8th month	11.53	-	11.53	0.11	0.28	11.24
	9th month	11.24	-	11.24	0.10	0.28	10.96
	10th month	10.96	-	10.96	0.10	0.28	10.68
	11th month	10.68	-	10.68	0.10	0.28	10.40
	12th month	10.40	-	10.40	0.10	0.28	10.12
					<b>1.31</b>	<b>3.37</b>	
<b>3rd</b>	Opening Balance						
	1st month	10.12	-	10.12	0.09	0.28	9.84
	2nd month	9.84	-	9.84	0.09	0.28	9.56
	3rd month	9.56	-	9.56	0.09	0.28	9.28
	4th month	9.28	-	9.28	0.09	0.28	9.00
	5th month	9.00	-	9.00	0.08	0.28	8.71
	6th month	8.71	-	8.71	0.08	0.28	8.43
	7th month	8.43	-	8.43	0.08	0.28	8.15
	8th month	8.15	-	8.15	0.07	0.28	7.87
	9th month	7.87	-	7.87	0.07	0.28	7.59
	10th month	7.59	-	7.59	0.07	0.28	7.31
	11th month	7.31	-	7.31	0.07	0.28	7.03
	12th month	7.03	-	7.03	0.06	0.28	6.75
					<b>0.94</b>	<b>3.37</b>	
<b>4th</b>	Opening Balance						
	1st month	6.75	-		0.06	0.28	6.47

PM FME- Detailed Project Report of Baheda Oil Unit

				6.75			
2nd month	6.47	-	6.47	0.06	0.28	6.18	
3rd month	6.18	-	6.18	0.06	0.28	5.90	
4th month	5.90	-	5.90	0.05	0.28	5.62	
5th month	5.62	-	5.62	0.05	0.28	5.34	
6th month	5.34	-	5.34	0.05	0.28	5.06	
7th month	5.06	-	5.06	0.05	0.28	4.78	
8th month	4.78	-	4.78	0.04	0.28	4.50	
9th month	4.50	-	4.50	0.04	0.28	4.22	
10th month	4.22	-	4.22	0.04	0.28	3.94	
11th month	3.94	-	3.94	0.04	0.28	3.65	
12th month	3.65	-	3.65	0.03	0.28	3.37	
				<b>0.57</b>	<b>3.37</b>		
<b>5th</b>	<b>Opening Balance</b>						
1st month	3.37	-	3.37	0.03	0.28	3.09	
2nd month	3.09	-	3.09	0.03	0.28	2.81	
3rd month	2.81	-	2.81	0.03	0.28	2.53	
4th month	2.53	-	2.53	0.02	0.28	2.25	
5th month	2.25	-	2.25	0.02	0.28	1.97	
6th month	1.97	-	1.97	0.02	0.28	1.69	
7th month	1.69	-	1.69	0.02	0.28	1.41	
8th month	1.41	-	1.41	0.01	0.28	1.12	
9th month	1.12	-	1.12	0.01	0.28	0.84	
10th month	0.84	-	0.84	0.01	0.28	0.56	
11th month	0.56	-		0.01	0.28	0.28	

			0.56			
12th month	0.28	-	0.28	0.00	0.28	-
				<b>0.20</b>	<b>3.37</b>	
DOOR TO DOOR MORATORIUM PERIOD	60	MONTHS				
	6	MONTHS				
REPAYMENT PERIOD	54	MONTHS				

#### 4.10. WORKING CAPITAL CALCULATIONS

<b>COMPUTATION OF CLOSING STOCK &amp; WORKING CAPITAL</b>					(in Lacs)
<b>PARTICULARS</b>	<b>1st year</b>	<b>2nd year</b>	<b>3rd year</b>	<b>4th year</b>	<b>5th year</b>
<b>Finished Goods</b>					
	1.12	1.29	1.47	1.67	1.87
<b>Raw Material</b>					
	0.49	0.58	0.68	0.79	0.90
<b>Closing Stock</b>	<b>1.61</b>	<b>1.87</b>	<b>2.15</b>	<b>2.46</b>	<b>2.77</b>

<b>COMPUTATION OF WORKING CAPITAL REQUIREMENT</b>					
<b>TRADITIONAL METHOD</b>					(in Lacs)
<b>Particulars</b>	<b>Amount</b>	<b>Own Margin</b>		<b>Bank Finance</b>	
Finished Goods & Raw Material	1.61				
Less : Creditors	0.49				
<b>Paid stock</b>	<b>1.12</b>	<b>10%</b>	<b>0.11</b>	<b>90%</b>	<b>1.01</b>
<b>Sundry Debtors</b>	<b>4.08</b>	<b>10%</b>	<b>0.41</b>	<b>90%</b>	<b>3.67</b>
	<b>5.20</b>		<b>0.52</b>		<b>4.68</b>
<b>MPBF</b>					<b>4.68</b>
<b>WORKING CAPITAL LIMIT DEMAND ( from Bank)</b>					<b>4.68</b>
<b>Working Capital Margin</b>					<b>0.52</b>

#### 4.11. SALARY & WAGES

<b><u>BREAK UP OF LABOUR CHARGES</u></b>			
<b>Particulars</b>	<b>Wages</b>	<b>No of</b>	<b>Total</b>
	<b>Rs. per Month</b>	<b>Employees</b>	<b>Salary</b>
Plant Operator	15,000	3	45,000
Supervisor	18,000	1	18,000
Skilled (in thousand rupees)	12,000	2	24,000
Unskilled (in thousand rupees)	8,000	3	24,000
<b>Total salary per month</b>			<b>1,11,000</b>
<b>Total annual labour charges</b>	<b>(in lacs)</b>		<b>13.32</b>

<b><u>BREAK UP OF STAFF SALARY CHARGES</u></b>			
<b>Particulars</b>	<b>Salary</b>	<b>No of</b>	<b>Total</b>
	<b>Rs. per Month</b>	<b>Employees</b>	<b>Salary</b>
Administrative Staff	6,500	1	6,500
Manager	18,000	1	18,000
Accountant	15,000	1	15,000
<b>Total salary per month</b>			<b>39,500</b>
<b>Total annual Staff charges</b>	<b>(in lacs)</b>		<b>4.74</b>

## 4.12 POWER REQUIREMENT

<b>Utility Charges (per month)</b>		
<b>Particulars</b>	<b>value</b>	<b>Description</b>
Power connection required	24	KWH
consumption per day	192	units
Consumption per month	4,800	units
Rate per Unit	10	Rs.
power Bill per month	48,000	Rs.

## 4.13. DEPRECIATION CALCULATION

<b>COMPUTATION OF DEPRECIATION</b>			(in Lacs)
<b>Description</b>	<b>Plant &amp; Machinery</b>	<b>Miss. Assets</b>	<b>TOTAL</b>
Rate of Depreciation	<b>15.00%</b>	<b>10.00%</b>	
<b>Opening Balance</b>	-	-	-
Addition	25.10	2.50	27.60
Total	25.10	2.50	27.60
Less : Depreciation	3.77	0.25	4.02
<b>WDV at end of Year</b>	<b>21.34</b>	<b>2.25</b>	<b>23.59</b>
Additions During The Year	-	-	-
Total	21.34	2.25	23.59
Less : Depreciation	3.20	0.23	3.43
<b>WDV at end of Year</b>	<b>18.13</b>	<b>2.03</b>	<b>20.16</b>
Additions During The Year	-	-	-
Total	18.13	2.03	20.16
Less : Depreciation	2.72	0.20	2.92
<b>WDV at end of Year</b>	<b>15.41</b>	<b>1.82</b>	<b>17.24</b>
Additions During The Year	-	-	-
Total	15.41	1.82	17.24
Less : Depreciation	2.31	0.18	2.49
<b>WDV at end of Year</b>	<b>13.10</b>	<b>1.64</b>	<b>14.74</b>
Additions During The Year	-	-	-
Total	13.10	1.64	14.74
Less : Depreciation	1.97	0.16	2.13
<b>WDV at end of Year</b>	<b>11.14</b>	<b>1.48</b>	<b>12.61</b>

**4.14. REPAIR & MAINTENANCE:** Repair & Maintenance is 2.5% of Gross Sale.

**4.15. PROJECTIONS OF PROFITABILITY ANALYSIS:**

<b><u>PROJECTED PROFITABILITY STATEMENT</u></b>					<b>(in Lacs)</b>
<b>PARTICULARS</b>	<b>1st year</b>	<b>2nd year</b>	<b>3rd year</b>	<b>4th year</b>	<b>5th year</b>
Capacity Utilisation %	<b>40%</b>	<b>45%</b>	<b>50%</b>	<b>55%</b>	<b>60%</b>
<b><u>SALES</u></b>					
<b>Gross Sale</b>					
Baheda Oil	61.24	74.19	86.72	100.11	114.35
<b>Total</b>	<b>61.24</b>	<b>74.19</b>	<b>86.72</b>	<b>100.11</b>	<b>114.35</b>
<b><u>COST OF SALES</u></b>					
Raw Material Consumed	21.00	24.98	29.25	33.83	38.70
Electricity Expenses	5.76	6.62	7.62	8.76	9.64
Depreciation	4.02	3.43	2.92	2.49	2.13
Wages & labour	13.32	15.32	17.46	19.91	22.30
Repair & maintenance	1.53	1.85	2.17	2.50	2.86
Packaging	2.45	2.97	3.47	4.00	4.57
<b>Cost of Production</b>	<b>48.08</b>	<b>55.16</b>	<b>62.89</b>	<b>71.49</b>	<b>80.19</b>
<b>Add: Opening Stock /WIP</b>	<b>-</b>	<b>1.12</b>	<b>1.29</b>	<b>1.47</b>	<b>1.67</b>
<b>Less: Closing Stock /WIP</b>	<b>1.12</b>	<b>1.29</b>	<b>1.47</b>	<b>1.67</b>	<b>1.87</b>
Cost of Sales	46.95	55.00	62.71	71.29	79.99
<b>GROSS PROFIT</b>	<b>14.28</b>	<b>19.19</b>	<b>24.01</b>	<b>28.81</b>	<b>34.36</b>
	<b>23.32%</b>	<b>25.87%</b>	<b>27.69%</b>	<b>28.78%</b>	<b>30.05%</b>
Salary to Staff	4.74	5.78	6.82	7.37	8.48
Interest on Term Loan	1.49	1.31	0.94	0.57	0.20
Interest on working Capital	0.52	0.52	0.52	0.52	0.52
Rent	3.60	3.96	4.36	4.79	5.27
selling & adm exp	1.84	2.23	2.60	3.00	3.43
<b>TOTAL</b>	<b>12.18</b>	<b>13.80</b>	<b>15.24</b>	<b>16.25</b>	<b>17.89</b>
NET PROFIT	2.10	5.39	8.77	12.56	16.46
	<b>3.43%</b>	<b>7.27%</b>	<b>10.12%</b>	<b>12.55%</b>	<b>14.40%</b>
Taxation	-	0.21	0.91	1.92	3.14
PROFIT (After Tax)	2.10	5.19	7.86	10.64	13.32

#### 4.16. BREAK EVEN POINT ANALYSIS

<b>BREAK EVEN POINT ANALYSIS</b>					
<b>Year</b>	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>
<b>Net Sales &amp; Other Income</b>	61.24	74.19	86.72	100.11	114.35
Less : Op. WIP Goods	-	1.12	1.29	1.47	1.67
Add : Cl. WIP Goods	1.12	1.29	1.47	1.67	1.87
<b>Total Sales</b>	<b>62.36</b>	<b>74.36</b>	<b>86.90</b>	<b>100.31</b>	<b>114.55</b>
<b>Variable &amp; Semi Variable Exp.</b>					
Raw Material Consumed	21.00	24.98	29.25	33.83	38.70
Electricity Exp/Coal Consumption at 85%	4.90	5.63	6.47	7.45	8.19
Wages & Salary at 60%	10.84	12.66	14.57	16.37	18.46
Selling & administrative Expenses 80%	1.47	1.78	2.08	2.40	2.74
Interest on working Capital	0.515218	0.515218	0.515218	0.515218	0.515218
Repair & maintenance	1.53	1.85	2.17	2.50	2.86
Packaging	2.45	2.97	3.47	4.00	4.57
<b>Total Variable &amp; Semi Variable Exp</b>	<b>42.70</b>	<b>50.38</b>	<b>58.53</b>	<b>67.06</b>	<b>76.05</b>
<b>Contribution</b>	<b>19.66</b>	<b>23.97</b>	<b>28.37</b>	<b>33.25</b>	<b>38.50</b>
<b>Fixed &amp; Semi Fixed Expenses</b>					
Electricity Exp/Coal Consumption at 15%	0.86	0.99	1.14	1.31	1.45
Wages & Salary at 40%	7.22	8.44	9.71	10.91	12.31
Interest on Term Loan	1.49	1.31	0.94	0.57	0.20
Depreciation	4.02	3.43	2.92	2.49	2.13
Selling & administrative Expenses 20%	0.37	0.45	0.52	0.60	0.69
Rent	3.60	3.96	4.36	4.79	5.27
<b>Total Fixed Expenses</b>	<b>17.56</b>	<b>18.58</b>	<b>19.60</b>	<b>20.68</b>	<b>22.04</b>
<b>Capacity Utilization</b>	<b>40%</b>	<b>45%</b>	<b>50%</b>	<b>55%</b>	<b>60%</b>
<b>OPERATING PROFIT</b>	<b>2.10</b>	<b>5.39</b>	<b>8.77</b>	<b>12.56</b>	<b>16.46</b>
<b>BREAK EVEN POINT</b>	<b>36%</b>	<b>35%</b>	<b>35%</b>	<b>34%</b>	<b>34%</b>
<b>BREAK EVEN SALES</b>	<b>55.70</b>	<b>57.62</b>	<b>60.03</b>	<b>62.41</b>	<b>65.57</b>

## 4.17. PROJECTED BALANCE SHEET

<b>PROJECTED BALANCE SHEET</b>					<b>(in Lacs)</b>
<b>PARTICULARS</b>	<b>1st year</b>	<b>2nd year</b>	<b>3rd year</b>	<b>4th year</b>	<b>5th year</b>
<b><u>Liabilities</u></b>					
Capital					
opening balance		12.03	13.22	15.08	17.72
Add:- Own Capital	3.27				
Add:- Retained Profit	2.10	5.19	7.86	10.64	13.32
Less:- Drawings	3.00	4.00	6.00	8.00	11.00
Subsidy/grant	9.66				
Closing Balance	12.03	13.22	15.08	17.72	20.04
Term Loan	13.49	10.12	6.75	3.37	-
Working Capital Limit	4.68	4.68	4.68	4.68	4.68
Sundry Creditors	0.49	0.58	0.68	0.79	0.90
Provisions & Other Liab	0.40	0.50	0.60	0.72	0.86
<b>TOTAL :</b>	<b>31.10</b>	<b>29.10</b>	<b>27.79</b>	<b>27.28</b>	<b>26.49</b>
<b><u>Assets</u></b>					
<b>Fixed Assets ( Gross)</b>	27.60	27.60	27.60	27.60	27.60
Gross Dep.	4.02	7.44	10.36	12.86	14.99
<b>Net Fixed Assets</b>	<b>23.59</b>	<b>20.16</b>	<b>17.24</b>	<b>14.74</b>	<b>12.61</b>
<b>Current Assets</b>					
Sundry Debtors	4.08	4.95	5.78	6.67	7.62
Stock in Hand	1.61	1.87	2.15	2.46	2.77
Cash and Bank	1.82	2.13	2.62	3.41	3.48
<b>TOTAL :</b>	<b>31.10</b>	<b>29.10</b>	<b>27.79</b>	<b>27.28</b>	<b>26.49</b>



## 4.18. CASH FLOW STATEMENT

<b>PROJECTED CASH FLOW STATEMENT</b>					<b>(in Lacs)</b>
<b>PARTICULARS</b>	<b>1st year</b>	<b>2nd year</b>	<b>3rd year</b>	<b>4th year</b>	<b>5th year</b>
<b><u>SOURCES OF FUND</u></b>					
Own Margin	3.27				
Net Profit	2.10	5.39	8.77	12.56	16.46
Depreciation & Exp. W/off	4.02	3.43	2.92	2.49	2.13
Increase in Cash Credit	4.68	-	-	-	-
Increase In Term Loan	15.18	-	-	-	-
Increase in Creditors	0.49	0.09	0.10	0.11	0.11
Increase in Provisions & Oth lib	0.40	0.10	0.10	0.12	0.14
Sunsidy/grant	9.66				
<b>TOTAL :</b>	<b>39.80</b>	<b>9.01</b>	<b>11.90</b>	<b>15.28</b>	<b>18.85</b>
<b><u>APPLICATION OF FUND</u></b>					
Increase in Fixed Assets	27.60				
Increase in Stock	1.61	0.26	0.28	0.31	0.32
Increase in Debtors	4.08	0.86	0.84	0.89	0.95
Repayment of Term Loan	1.69	3.37	3.37	3.37	3.37
Drawings	3.00	4.00	6.00	8.00	11.00
Taxation	-	0.21	0.91	1.92	3.14
<b>TOTAL :</b>	<b>37.98</b>	<b>8.70</b>	<b>11.40</b>	<b>14.50</b>	<b>18.78</b>
Opening Cash & Bank Balance	-	1.82	2.13	2.62	3.41
Add : Surplus	1.82	0.31	0.50	0.79	0.07
Closing Cash & Bank Balance	<b>1.82</b>	<b>2.13</b>	<b>2.62</b>	<b>3.41</b>	<b>3.48</b>

**4.19. DEBT SERVICE COVERAGE RATIO**

<b><u>CALCULATION OF D.S.C.R</u></b>					
<b>PARTICULARS</b>	<b>1st year</b>	<b>2nd year</b>	<b>3rd year</b>	<b>4th year</b>	<b>5th year</b>
CASH ACCRUALS	6.11	8.61	10.79	13.13	15.45
Interest on Term Loan	1.49	1.31	0.94	0.57	0.20
<b>Total</b>	<b>7.61</b>	<b>9.93</b>	<b>11.73</b>	<b>13.70</b>	<b>15.65</b>
<b><u>REPAYMENT</u></b>					
Instalment of Term Loan	1.69	3.37	3.37	3.37	3.37
Interest on Term Loan	1.49	1.31	0.94	0.57	0.20
<b>Total</b>	<b>3.18</b>	<b>4.69</b>	<b>4.32</b>	<b>3.95</b>	<b>3.57</b>
<b>DEBT SERVICE COVERAGE RATIO</b>	<b>2.39</b>	<b>2.12</b>	<b>2.72</b>	<b>3.47</b>	<b>4.38</b>
<b>AVERAGE D.S.C.R.</b>	<b>2.98</b>				