



**DETAILED PROJECT REPORT**

**CHICORY POWDER UNIT**

**UNDER PMFME SCHEME**



National Institute of Food Technology Entrepreneurship and Management

Ministry of Food Processing Industries

Plot No.97, Sector-56, HSIIDC, Industrial Estate, Kundli, Sonipat, Haryana-131028

Website: <http://www.niftem.ac.in>

Email: [pmfmecell@niftem.ac.in](mailto:pmfmecell@niftem.ac.in)

Call: 0130-2281089

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**1. PROJECT SUMMARY**

1. Name of the proposed project	:	Chicory Powder Unit
2. Nature of proposed project	:	Proprietorship/Company/Partnership
3. Proposed project capacity	:	162000 Kg/annum (30,35,40,45&50% capacity utilization in 1 <sup>st</sup> to 5 <sup>th</sup> Year respectively)
4. Raw material	:	Chicory roots
5. Major product outputs	:	Chicory Powder
6. Total project cost	:	Rs. 29.25 Lakh
• Land development, building & Civil Construction	:	Nil
• Machinery and equipment's	:	Rs. 21.50 Lakh
• Miscellaneous Fixed Assets	:	Rs. 2.50 Lakh
• Working capital	:	Rs. 5.25 Lakh
7. Means of Finance		
• Subsidy (max 10lakhs)	:	Rs. 8.40 Lakh
• Promoter's contribution (min10%)	:	Rs. 2.92 Lakh
• Term loan	:	Rs. 13.20 Lakh
• Working Capital Requirement	:	Rs. 4.73 Lakh
8. Profit after Depreciation, Interest & Tax		
• 1 <sup>st</sup> year	:	Rs. 1.23 Lakh
• 2 <sup>nd</sup> year	:	Rs. 4.82 Lakh
• 3 <sup>rd</sup> year	:	Rs. 8.14 Lakh
• 4 <sup>th</sup> year	:	Rs. 11.72 Lakh
• 5 <sup>th</sup> year	:	Rs. 15.41 Lakh
9. Average DSCR	:	Rs. 3.40
10. Term loan repayment	:	5 Years with 6 months grace period

## **2. ABOUT THE PRODUCT**

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

Chicory (*Cichorium intybus L.*) known as “Succory”, “Witloof” or “Hendibeh”. The name derived from Greek and Latin. Cichorium means field and intybus is Greek word means “to cut”. It is an edible consumed in Arab countries, Lebanon and different parts of world. Chicory is woody perennial herb having height of 1m with roots up to 75cm and large basal leaves. Chicory consists of flower of blue colour, roots and wild green leaves. chicory Roots and its leaves are edible part of plant. Leaves are excellent source of dietary fibres, minerals, vitamins, antioxidant, phytochemical and contribute to prevention of disease such as diabetes, cardiovascular and gastrointestinal. The roots of chicory is used in dried and roasted form containing inulin up to 40% which has impact on blood sugar and suitable for diabetic patients. The roots of chicory are blended with coffee to add flavour whereas leaves are used in salad and vegetable dishes. Chicory is used for production of inulin on industrial scale.

Chicory has long therapeutic uses, different part of plant used to treat various ailments. It is used to treat digestive problems, loss of appetite, liver diseases, mild laxative and renal functions.

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

Chicory is a coffee-based beverage that is prepared using roasted and ground chicory roots with or without coffee. It is widely used in food industry, cosmetics industry and pharmaceutical industry.

Now days more and more people are becoming health conscious as there is an increase in the risk of lifestyle diseases. It was discovered that the root of *C. intybus* contained inulin up to 40%,

which has a minor impact on blood sugar and thus is suitable for Sugar patients. Up till now, Chicory is developed for the production of inulin on an industrial scale. Higher consumption of chicory product is beneficial for diabetic patients as it has high inulin and reduces risk of diabetes.

Chicory coffee is increasingly used in various cosmetic products like moisturizers, tanning cream, soaps, conditioners, oils, hair mask, face mask, shampoos etc which cause rapid growth of chicory powder. The paste of chicory leaves and paste can be directly applied to the skin in case of swelling and inflammation.

Due to the pandemic, there has been increase in ready to mix and ready to drink beverages. This largely includes drinks such as juices, coffee, and flavoured milks. To serve to this increased demand, the coffee manufacturers increased their production size. Due to this reason consumption of chicory has increased simultaneously.

The important factor which has led to the development and growth of the global chicory Market is regional integration and a free trade agreement. Free trade has helped in the integration of supply chain, resulting in the boosting of trade activities between countries, and this has benefited the chicory manufacturers extensively as they can now access other countries, subsequently driving the growth of the global chicory market.

Another factor which is important for the growth of this Market is the emergence of modern retail and the growing trend of food court and speciality stores in malls. Consumers have an easier access to products that contain chicory ingredients such as prebiotics food and supermarket and malls as they come to these places for shopping offer entertainment activities and also end up purchasing different products.

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

The only raw material required for chicory powder production is chicory roots.

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

#### RECEIVING OF RAW MATERIAL

Harvesting of chicory plant when fully grown and ready to be harvested. The time of harvesting depends on sowing but it is usually between August and November. Firstly, leaves and roots are need to be separated. chicory leaves can be used in salads or as organic waste. The required part for chicory powder production is forwarded to factory.

#### CLEANING AND WASHING

It involves elimination of foreign material such as stalk, husk, sticks, threads and unwanted grain particles. Dirt, dust and any other impurities are removed by washing with water or using dilute hydrochloric acid followed by water.

#### SLICING AND GRINDING

The cleaned root is cut into smaller cubes (the size of cubes may vary from mm to cm). the slices are ground to produce fine powder to achieve faster, easier drying and right consistency for roasting.

#### DRYING

Sun drying method is being used for drying of chicory and normally takes 3 – 4 days for drying at temperature of 43 – 44°C. To achieve faster drying, tray drying can be used by spreading the powder on tray at 93°C for 1 hour.

## ROASTING

The dried chicory roots powder is roasted in drum roaster until brown and crispy. Later cooled on a cooling tray to bring it to the room temperature. The product obtained is powdered chicory coffee. Further graded and passed through a screen before packing.

## EXTRACTION WITH HOT WATER

The product is obtained by extracting dried and roasted chicory powder with water at 80 – 90C. the liquid extracted then filtered to separated undissolved solids.

## EVAPORATION

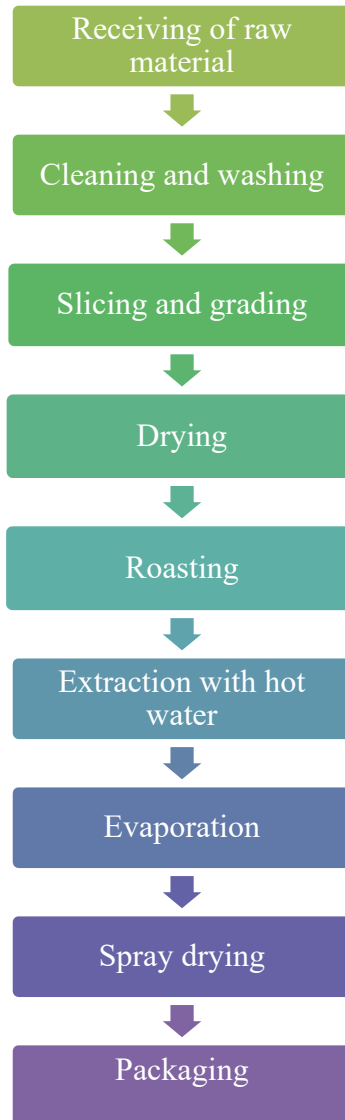
The extracted liquid is concentrated by evaporation at 70°C until solid concentration reaches 25 brix.

## SPRAY DRYING

In spray drying the concentrated liquid is finely dispersed in spray tower by centrifugal atomization or by nozzle atomization and dried with hot air (150-220°C) co currently or counter currently. The product obtained is instant chicory coffee.

## PACKAGING

The product is packaged in air tight aluminum foil lined pouches and bags.





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

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

1. Production Capacity of Chicory Powder is 600 kg per day. First year, Capacity has been taken @ 30%.
2. Working shift of 8 hours per day has been considered.
3. Raw Material stock is for 10 days and Finished goods Closing Stock has been taken for 10 days.
4. Credit period to Sundry Debtors has been given for 20 days.
5. Credit period by the Sundry Creditors has been provided for 10 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 30 KW.
10. Increase in sales and raw material costing has been taken @ 5% on a yearly basis.

## 4.2. CAPACITY, UTILIZATION, PRODUCTION & OUTPUT

<b>COMPUTATION OF PRODUCTION OF CHICORY POWDER</b>		
<b>Items to be Manufactured</b>		
Chicory Powder		
Total working Hours	8	
Plant capacity Per Day	600	Kg
Working days in a month	25	Days
Working days per annum	300	
Wastage Considered	10%	
Raw material requirement	180000	Kg
Final Output per annum after wastage	162000	Kg
Final Product to be packed in 1 kg Packet		
Number of Packets per annum	162000	1 kg Packet

<b>Production of Chicory Powder</b>		
<b>Production</b>	<b>Capacity</b>	<b>KG</b>
1st year	30%	48,600
2nd year	35%	56,700
3rd year	40%	64,800
4th year	45%	72,900
5th year	50%	81,000



<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	30%	30.00	16.20
2nd year	35%	32.00	20.16
3rd year	40%	34.00	24.48
4th year	45%	36.00	29.16
5th year	50%	38.00	34.20


<b><u>COMPUTATION OF SALE</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>
Op Stock	-	1,620	1,890	2,160	2,430
Production	48,600	56,700	64,800	72,900	81,000
Less : Closing Stock	1,620	1,890	2,160	2,430	2,700
<b>Net Sale</b>	<b>46,980</b>	<b>56,430</b>	<b>64,530</b>	<b>72,630</b>	<b>80,730</b>
Sale price per packet	120.00	126.00	132.00	139.00	146.00
<b>Sales (in Lacs)</b>	<b>56.38</b>	<b>71.10</b>	<b>85.18</b>	<b>100.96</b>	<b>117.87</b>





### 4.3. PREMISES/INFRASTRUCTURE

The approximate total area required for complete factory setup is 2000-2500 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.
Vibrating separator	A vibrating separator is a multifunctional machinery used for pre-treatment and cleaning. Adopting high frequency and small vibrating amplitude motor, it can efficiently separate and clean impurities of different sizes. The outlet is equipped with a circulation air separator to remove dust and light impurities.	
Washing unit	Washing unit is an important equipment for processing pre-treatment and ensures removal of dirt, dust and impurities from the fruits and grains. It consists of blower, hopper, tank and spray water tube etc. The rapid blow if water scours the surface of raw material and cleans the dirt and impurities from its surface.	
Chicory grinding machine	The machine adopts left mounted column, side mounted grinding head layout and uses technology of mature grinding head moving type product to produce product with structural rigidity. The grinding head uses	

	<p>bearing type grinding to ensure good cutting result.</p>	
<p>Tray dryer</p>	<p>Industrial tray drying machine / Hot air-drying machine is made with stainless steel and equipped with plastic, stainless steel and customized drying racks. The drying method can be co current or counter current air flow. The temperature is controlled and speed of the conveyor can be adjusted according to the drying time required. The heating source is electricity to generate hot air.</p>	
<p>Roasting machine</p>	<p>Commercial industrial rotary drum roaster with auto roasting and auto discharging. Roasting temperature and time could be set to get best roasting performance. The materials are roasted by hot air and are pushed and circulated in a continuum manner, in this way, the product will be heated equally, in order to ensure the products have good quality.</p>	
<p>Single effect evaporator</p>	<p>The evaporator is used for concentrating the liquid. This concentrator adopts external heating natural circulation type and vacuum pressure evaporation type, which features rapid evaporation speed, high concentration</p>	

	<p>ratio. it is suitable for the low temperature vacuum concentration of heat sensitive materials.</p>	
<p>Spray dryer</p>	<p>Spray dryer is most widely used for liquid drying industry. The hot air enters in drying chamber. Passing through high centrifugal, the liquid material will rotate and sprayed into fine mist. In very short time of contact with hot air, the material gets dried.</p>	
<p>Packaging machine</p>	<p>Packaging machine is used for filling, sealing, cutting, heating packets of powdered coffee. packaging speed can be changed according to the speed of production. It involves setting up of parameter such as bag length and weight followed by sealing of bag and final product delivered by conveyor.</p>	
<p>Material handling and other Equipment's</p>	<p>These Equipment's are used for material handling. Other equipment's like water pumps, silos, bucket elevator, belt conveyors, unloading bin, etc are also used.</p>	

<b>Machine</b>	<b>Unit</b>	<b>Rate</b>	<b>Price</b>
Vibrating separator	1	175000	175000
Washing unit	1	65000	65000
Chicory grinding machine	1	274000	274000
Tray dryer	1	246000	246000
Roasting machine	1	140000	140000
Single effect evaporator	1	150000	150000
Spray dryer	1	570000	570000
Packaging machine	1	180000	180000
Material handling and other equipment's (Trolley, weighing machine, storage bins, etc.)	-	350000	350000

**Note:** Total Machinery cost shall be Rs 21.50 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	21.50
Miscellaneous Assets	2.50
Working capital	5.25
<b>Total</b>	<b>29.25</b>

**4.7. MEANS OF FINANCE**

<b>MEANS OF FINANCE</b>	
<b>PARTICULARS</b>	<b>AMOUNT</b>
Own Contribution (min 10%)	2.92
Subsidy @35%(Max. Rs 10 Lac)	8.40
Term Loan @ 55%	13.20
Working Capital (Bank Finance)	4.73
<b>Total</b>	<b>29.25</b>

**4.8. TERM LOAN:** Term loan of Rs. 13.20 Lakh is required for project cost of Rs. 29.25 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	-	13.20	13.20	-	-	13.20	
	2nd month	13.20	-	13.20	0.12	-	13.20	
	3rd month	13.20	-	13.20	0.12	-	13.20	
	4th month	13.20	-	13.20	0.12	-	13.20	
	5th month	13.20	-	13.20	0.12	-	13.20	
	6th month	13.20	-	13.20	0.12	-	13.20	
	7th month	13.20	-	13.20	0.12	0.24	12.96	
	8th month	12.96	-	12.96	0.12	0.24	12.71	
	9th month	12.71	-	12.71	0.12	0.24	12.47	
	10th month	12.47	-	12.47	0.11	0.24	12.22	
	11th month	12.22	-	12.22	0.11	0.24	11.98	
	12th month	11.98	-	11.98	0.11	0.24	11.73	
					1.30	1.47		
<b>2nd</b>	Opening Balance							
	1st month	11.73	-	11.73	0.11	0.24	11.49	
	2nd month	11.49	-	11.49	0.11	0.24	11.24	

PM FME- Detailed Project Report of Chicory Powder Unit

3rd month	11.24	-	11.24	0.10	0.24	11.00
4th month	11.00	-	11.00	0.10	0.24	10.76
5th month	10.76	-	10.76	0.10	0.24	10.51
6th month	10.51	-	10.51	0.10	0.24	10.27
7th month	10.27	-	10.27	0.09	0.24	10.02
8th month	10.02	-	10.02	0.09	0.24	9.78
9th month	9.78	-	9.78	0.09	0.24	9.53
10th month	9.53	-	9.53	0.09	0.24	9.29
11th month	9.29	-	9.29	0.09	0.24	9.04
12th month	9.04	-	9.04	0.08	0.24	8.80
				<b>1.14</b>	<b>2.93</b>	
<b>3rd</b>	<b>Opening Balance</b>					
1st month	8.80	-	8.80	0.08	0.24	8.56
2nd month	8.56	-	8.56	0.08	0.24	8.31
3rd month	8.31	-	8.31	0.08	0.24	8.07
4th month	8.07	-	8.07	0.07	0.24	7.82
5th month	7.82	-	7.82	0.07	0.24	7.58
6th month	7.58	-	7.58	0.07	0.24	7.33
7th month	7.33	-	7.33	0.07	0.24	7.09
8th month	7.09	-	7.09	0.06	0.24	6.84
9th month	6.84	-	6.84	0.06	0.24	6.60
10th month	6.60	-	6.60	0.06	0.24	6.36
11th month	6.36	-	6.36	0.06	0.24	6.11
12th month	6.11	-	6.11	0.06	0.24	5.87

PM FME- Detailed Project Report of Chicory Powder Unit

				<b>0.82</b>	<b>2.93</b>		
<b>4th</b>	Opening Balance						
	1st month	5.87	-	5.87	0.05	0.24	5.62
	2nd month	5.62	-	5.62	0.05	0.24	5.38
	3rd month	5.38	-	5.38	0.05	0.24	5.13
	4th month	5.13	-	5.13	0.05	0.24	4.89
	5th month	4.89	-	4.89	0.04	0.24	4.64
	6th month	4.64	-	4.64	0.04	0.24	4.40
	7th month	4.40	-	4.40	0.04	0.24	4.16
	8th month	4.16	-	4.16	0.04	0.24	3.91
	9th month	3.91	-	3.91	0.04	0.24	3.67
	10th month	3.67	-	3.67	0.03	0.24	3.42
	11th month	3.42	-	3.42	0.03	0.24	3.18
	12th month	3.18	-	3.18	0.03	0.24	2.93
				<b>0.50</b>	<b>2.93</b>		
<b>5th</b>	Opening Balance						
	1st month	2.93	-	2.93	0.03	0.24	2.69
	2nd month	2.69	-	2.69	0.02	0.24	2.44
	3rd month	2.44	-	2.44	0.02	0.24	2.20
	4th month	2.20	-	2.20	0.02	0.24	1.96
	5th month	1.96	-	1.96	0.02	0.24	1.71
	6th month	1.71	-	1.71	0.02	0.24	1.47
	7th month	1.47	-	1.47	0.01	0.24	1.22
	8th month	1.22	-	1.22	0.01	0.24	0.98
	9th month	0.98	-		0.01	0.24	0.73

			0.98			
10th month	0.73	-	0.73	0.01	0.24	0.49
11th month	0.49	-	0.49	0.00	0.24	0.24
12th month	0.24	-	0.24	0.00	0.24	-
				<b>0.17</b>	<b>2.93</b>	
DOOR TO DOOR MORATORIUM PERIOD	60	MONTHS				
REPAYMENT PERIOD	6	MONTHS				
	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><u>Finished Goods</u></b>					
	1.50	1.77	2.05	2.36	2.68
<b><u>Raw Material</u></b>					
	0.54	0.67	0.82	0.97	1.14
<b>Closing Stock</b>	<b>2.04</b>	<b>2.44</b>	<b>2.87</b>	<b>3.34</b>	<b>3.82</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	2.04				
Less : Creditors	0.54				
<b>Paid stock</b>	<b>1.50</b>	<b>10%</b>	<b>0.15</b>	<b>90%</b>	<b>1.35</b>
<b>Sundry Debtors</b>	<b>3.76</b>	<b>10%</b>	<b>0.38</b>	<b>90%</b>	<b>3.38</b>
	<b>5.25</b>		<b>0.53</b>		<b>4.73</b>
<b>MPBF</b>					<b>4.73</b>
<b>WORKING CAPITAL LIMIT DEMAND ( from Bank)</b>					<b>4.73</b>
<b>Working Capital Margin</b>					<b>0.53</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	3	36,000
Unskilled (in thousand rupees)	7,500	4	30,000
<b>Total salary per month</b>			<b>1,29,000</b>
<b>Total annual labour charges</b>	<b>(in lacs)</b>		<b>15.48</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	2	13,000
Manager	18,000	1	18,000
Accountant	15,000	1	15,000
<b>Total salary per month</b>			<b>46,000</b>
<b>Total annual Staff charges</b>	<b>(in lacs)</b>		<b>5.52</b>

## 4.12 POWER REQUIREMENT

<b>Utility Charges (per month)</b>		
<b>Particulars</b>	<b>value</b>	<b>Description</b>
Power connection required	30	KWH
consumption per day	240	units
Consumption per month	6,000	units
Rate per Unit	10	Rs.
power Bill per month	60,000	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	21.50	2.50	24.00
Total	21.50	2.50	24.00
Less : Depreciation	3.23	0.25	3.48
<b>WDV at end of Year</b>	<b>18.28</b>	<b>2.25</b>	<b>20.53</b>
Additions During The Year	-	-	-
Total	18.28	2.25	20.53
Less : Depreciation	2.74	0.23	2.97
<b>WDV at end of Year</b>	<b>15.53</b>	<b>2.03</b>	<b>17.56</b>
Additions During The Year	-	-	-
Total	15.53	2.03	17.56
Less : Depreciation	2.33	0.20	2.53
<b>WDV at end of Year</b>	<b>13.20</b>	<b>1.82</b>	<b>15.03</b>
Additions During The Year	-	-	-
Total	13.20	1.82	15.03
Less : Depreciation	1.98	0.18	2.16
<b>WDV at end of Year</b>	<b>11.22</b>	<b>1.64</b>	<b>12.86</b>
Additions During The Year	-	-	-
Total	11.22	1.64	12.86
Less : Depreciation	1.68	0.16	1.85
<b>WDV at end of Year</b>	<b>9.54</b>	<b>1.48</b>	<b>11.02</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>30%</b>	<b>35%</b>	<b>40%</b>	<b>45%</b>	<b>50%</b>
<b><u>SALES</u></b>					
<b>Gross Sale</b>					
Chicory Powder	56.38	71.10	85.18	100.96	117.87
<b>Total</b>	<b>56.38</b>	<b>71.10</b>	<b>85.18</b>	<b>100.96</b>	<b>117.87</b>
<b><u>COST OF SALES</u></b>					
Raw Material Consumed	16.20	20.16	24.48	29.16	34.20
Electricity Expenses	7.20	8.28	9.52	10.95	12.05
Depreciation	3.48	2.97	2.53	2.16	1.85
Wages & labour	15.48	18.42	21.17	24.13	27.02
Repair & maintenance	1.41	1.78	2.13	2.52	2.95
Packaging	1.13	1.42	1.70	2.02	2.36
<b>Cost of Production</b>	<b>44.89</b>	<b>53.03</b>	<b>61.53</b>	<b>70.95</b>	<b>80.42</b>
<b>Add: Opening Stock /WIP</b>	<b>-</b>	<b>1.50</b>	<b>1.77</b>	<b>2.05</b>	<b>2.36</b>
<b>Less: Closing Stock /WIP</b>	<b>1.50</b>	<b>1.77</b>	<b>2.05</b>	<b>2.36</b>	<b>2.68</b>
Cost of Sales	43.40	52.76	61.25	70.63	80.11
<b>GROSS PROFIT</b>	<b>12.98</b>	<b>18.35</b>	<b>23.93</b>	<b>30.32</b>	<b>37.76</b>
	<b>23.02%</b>	<b>25.80%</b>	<b>28.09%</b>	<b>30.04%</b>	<b>32.04%</b>
Salary to Staff	5.52	6.62	7.62	8.76	9.94
Interest on Term Loan	1.30	1.14	0.82	0.50	0.17
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	0.82	1.28	1.49	1.62	2.36
<b>TOTAL</b>	<b>11.76</b>	<b>13.53</b>	<b>14.80</b>	<b>16.18</b>	<b>18.27</b>
<b>NET PROFIT</b>	<b>1.23</b>	<b>4.82</b>	<b>9.12</b>	<b>14.14</b>	<b>19.49</b>
	<b>2.17%</b>	<b>6.78%</b>	<b>10.71%</b>	<b>14.01%</b>	<b>16.54%</b>
Taxation	-	-	0.98	2.42	4.09
<b>PROFIT (After Tax)</b>	<b>1.23</b>	<b>4.82</b>	<b>8.14</b>	<b>11.72</b>	<b>15.41</b>

#### 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>	56.38	71.10	85.18	100.96	117.87
Less : Op. WIP Goods	-	1.50	1.77	2.05	2.36
Add : Cl. WIP Goods	1.50	1.77	2.05	2.36	2.68
<b>Total Sales</b>	<b>57.87</b>	<b>71.37</b>	<b>85.46</b>	<b>101.27</b>	<b>118.18</b>
<b>Variable &amp; Semi Variable Exp.</b>					
Raw Material Consumed	16.20	20.16	24.48	29.16	34.20
Electricity Exp/Coal Consumption at 85%	6.12	7.04	8.09	9.31	10.24
Wages & Salary at 60%	12.60	15.03	17.27	19.73	22.18
Selling & administrative Expenses 80%	0.65	1.02	1.19	1.29	1.89
Interest on working Capital	0.520225	0.520225	0.520225	0.520225	0.520225
Repair & maintenance	1.41	1.78	2.13	2.52	2.95
Packaging	1.13	1.42	1.70	2.02	2.36
<b>Total Variable &amp; Semi Variable Exp</b>	<b>38.63</b>	<b>46.97</b>	<b>55.39</b>	<b>64.56</b>	<b>74.33</b>
<b>Contribution</b>	<b>19.24</b>	<b>24.40</b>	<b>30.07</b>	<b>36.71</b>	<b>43.85</b>
<b>Fixed &amp; Semi Fixed Expenses</b>					
Electricity Exp/Coal Consumption at 15%	1.08	1.24	1.43	1.64	1.81
Wages & Salary at 40%	8.40	10.02	11.51	13.16	14.79
Interest on Term Loan	1.30	1.14	0.82	0.50	0.17
Depreciation	3.48	2.97	2.53	2.16	1.85
Selling & administrative Expenses 20%	0.16	0.26	0.30	0.32	0.47
Rent	3.60	3.96	4.36	4.79	5.27
<b>Total Fixed Expenses</b>	<b>18.02</b>	<b>19.59</b>	<b>20.95</b>	<b>22.57</b>	<b>24.36</b>
<b>Capacity Utilization</b>	<b>30%</b>	<b>35%</b>	<b>40%</b>	<b>45%</b>	<b>50%</b>
<b>OPERATING PROFIT</b>	<b>1.23</b>	<b>4.82</b>	<b>9.12</b>	<b>14.14</b>	<b>19.49</b>
<b>BREAK EVEN POINT</b>	<b>28%</b>	<b>28%</b>	<b>28%</b>	<b>28%</b>	<b>28%</b>
<b>BREAK EVEN SALES</b>	<b>54.19</b>	<b>57.28</b>	<b>59.53</b>	<b>62.27</b>	<b>65.65</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		9.54	10.86	12.50	14.72
Add:- Own Capital	2.92				
Add:- Retained Profit	1.23	4.82	8.14	11.72	15.41
Less:- Drawings	3.00	3.50	6.50	9.50	13.00
Subsidy/grant	8.40				
Closing Balance	9.54	10.86	12.50	14.72	17.13
Term Loan	11.73	8.80	5.87	2.93	-
Working Capital Limit	4.73	4.73	4.73	4.73	4.73
Sundry Creditors	0.54	0.67	0.82	0.97	1.14
Provisions & Other Liab	0.40	0.50	0.60	0.72	0.86
<b>TOTAL :</b>	<b>26.94</b>	<b>25.56</b>	<b>24.51</b>	<b>24.08</b>	<b>23.86</b>
<b><u>Assets</u></b>					
<b>Fixed Assets ( Gross)</b>	24.00	24.00	24.00	24.00	24.00
Gross Dep.	3.48	6.44	8.97	11.14	12.98
<b>Net Fixed Assets</b>	<b>20.53</b>	<b>17.56</b>	<b>15.03</b>	<b>12.86</b>	<b>11.02</b>
<b>Current Assets</b>					
Sundry Debtors	3.76	4.74	5.68	6.73	7.86
Stock in Hand	2.04	2.44	2.87	3.34	3.82
Cash and Bank	0.62	0.82	0.94	1.15	1.17
<b>TOTAL :</b>	<b>26.94</b>	<b>25.56</b>	<b>24.51</b>	<b>24.08</b>	<b>23.86</b>

## 4.18. CASH FLOW STATEMENT

<b><u>PROJECTED CASH FLOW 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>
<b><u>SOURCES OF FUND</u></b>					
Own Margin	2.92				
Net Profit	1.23	4.82	9.12	14.14	19.49
Depriciation & Exp. W/off	3.48	2.97	2.53	2.16	1.85
Increase in Cash Credit	4.73	-	-	-	-
Increase In Term Loan	13.20	-	-	-	-
Increase in Creditors	0.54	0.13	0.14	0.16	0.17
Increase in Provisions & Oth lib	0.40	0.10	0.10	0.12	0.14
Sunsidy/grant	8.40				
<b>TOTAL :</b>	<b>34.89</b>	<b>8.02</b>	<b>11.90</b>	<b>16.58</b>	<b>21.65</b>
<b><u>APPLICATION OF FUND</u></b>					
Increase in Fixed Assets	24.00				
Increase in Stock	2.04	0.40	0.43	0.47	0.48
Increase in Debtors	3.76	0.98	0.94	1.05	1.13
Repayment of Term Loan	1.47	2.93	2.93	2.93	2.93
Drawings	3.00	3.50	6.50	9.50	13.00
Taxation	-	-	0.98	2.42	4.09
<b>TOTAL :</b>	<b>34.26</b>	<b>7.82</b>	<b>11.78</b>	<b>16.37</b>	<b>21.63</b>
Opening Cash & Bank Balance	-	0.62	0.82	0.94	1.15
Add : Surplus	0.62	0.20	0.12	0.21	0.02
Closing Cash & Bank Balance	<b>0.62</b>	<b>0.82</b>	<b>0.94</b>	<b>1.15</b>	<b>1.17</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	4.70	7.79	10.67	13.89	17.25
Interest on Term Loan	1.30	1.14	0.82	0.50	0.17
<b>Total</b>	<b>6.00</b>	<b>8.93</b>	<b>11.49</b>	<b>14.38</b>	<b>17.43</b>
<b><u>REPAYMENT</u></b>					
Instalment of Term Loan	1.47	2.93	2.93	2.93	2.93
Interest on Term Loan	1.30	1.14	0.82	0.50	0.17
Total	2.76	4.08	3.75	3.43	3.11
<b>DEBT SERVICE COVERAGE RATIO</b>	<b>2.17</b>	<b>2.19</b>	<b>3.06</b>	<b>4.19</b>	<b>5.61</b>
<b>AVERAGE D.S.C.R.</b>	<b>3.40</b>				