



## **Model Detailed Project Report**

### **BARLEY FLOUR MILL**

**Prepared by**

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## 1. INTRODUCTION



Barley flour is used in the manufacture of flat bread, for infant foods and for food specialities. It is also a component of composite flours used for making yeast-raised bread.

Pre-gelatinized barley flour, which has high absorbent properties, provides a good

binder and thickener. Barley breading is made by combining pre-gelatinized barley flour with barley crunch.

Barley flour is milled from pearl barley, blocked barley or unpearled hull less barley. Optimum tempering conditions are 13% moisture content for 48 hour for pearl barley, 14% moisture content for 48 hour for un-pearled hull less barley. The milling system uses solar mills with blunted and smooth rolls and plansifters. When blocked barley or whole barley is used for milling barley flour, due allowance must be made for the greatly increased quantity of by products, which would otherwise hope the system. Barley flour is also byproducts of the cutting, pearling and polishing processes.

Malted barley flour is made from barley malt. Malt flour is used as a high diastatic supplement for bread flours which are low in natural diastatic activity, as a flavor supplement in malt loaves and for various other food products. Barley is one of the world's oldest domesticated crops and competes with wheat for the honor of being the first wild plant form through under cultivation. Barley (*Hordeum vulgare*) is the world's fourth most important cereal after wheat, rice and maize. Barley is one excellent source of B-complex vitamins and minerals. Like other cereals, barley is

also considered nutritionally poor due to low content of essential amino acids like lysine and threonine. However, breeders have discovered high lysine barley genotypes, which indicate the scope of nutritional improvement in this crop. Barley genotypes have been classified as hull less and hulled ones. Barley and oats are unique among cereals, containing relatively high concentration of the mixed linked (1-3), (1-4), b-D glucans (b-glucans). Hulled barley contains 3-7 per cent b glucans while hull less may have as much as 16 per cent b-glucans.

## **2. MARKET POTENTIAL:**

The world area under barley cultivation has been steadily increasing. The production increased from 83 million tones in 1961-62 to 132 million tones in 1971-72 and to 162 million tones in 1980. The chief barley producing countries in the world are the USSR, USA and Canada.

In India, barley is grown mostly in the northern part of the country. The area under cultivation was 0.72 million hectares in 1951-52 which rose to 1.75 million hectares in 1980, which a production of 1.6 million tones. The yield is the order of 7.5 to 9.0 quintals per hectares as against a world average of 19.5. In India, production is largely confined to Utter Pradesh, Punjab and Haryana but however it can be grown anywhere the wheat can be. In Haryana, barley crops cover 58000 hectares of land area and total yield is 160,000 tonnes.

### **3. PRODUCT DESCRIPTION**

#### **3.1 PRODUCT BENEFITS**

- Barley flour is used to prepare breads such as barley bread.
- It is sometimes added to wheat flour, creating a composite flour, which is used to prepare various breads.
- Its addition to wheat flour creates a darker-colored baked end-product, and also alters the flavor of the product.
- Barley flour is also used as an ingredient in some specialty foods.
- Barley breadding is another food product prepared using barley flour, which can be prepared using pregelatinized barley flour and an additional product called barley crunch, similar to Grape-Nuts cereal.

#### **3.2 RAW MATERIAL**

- Malt Barley are the raw material;
- Packaging material

#### **3.3 MANUFACTURING PROCESS**

Barley is cleaned, sized, segregated by variety and protein content and stored for several months to break any dormancy.

- Grain delivery: Grain is delivered to mills by covered trucks and hopper railcars. The distance the grain has travelled varies greatly. In some cases, it has travelled hundreds of miles in a 110-car unit train. In other instances, it is being delivered from a local farm in the same county. Grain deliveries will frequently have gone through a number of aggregation steps prior to arriving at the mill (farmer,

country elevator, terminal elevator etc.). The number of conveyances making deliveries of grain can vary depending on the time of year with more deliveries at harvest time.

- Grain standard: Before Barley is unloaded at a facility; samples are taken to ensure it passes inspection. Grain is tested for moisture content, test weight, unsound kernels, and foreign material. Grain is graded according to the Indian Grain Standards and is also subject to commercial specifications set by the ISO. At unloading, product control chemists begin their tests to classify Barley and determine end-use qualities. The results from these tests determine how the Barley will be handled and stored.

Standards define quality and condition factors and set grade limits based on those factor determinations. However, one must use commercial specifications that are even more rigorous than the Grain Standards when testing for natural toxins, evidence of pest exposure, stress cracks, etc. Sampling, grading and testing of grade and quality factors continues throughout the storage, handling and milling processes.

- Grain storage: Once the grain has passed inspection it is unloaded directly from the delivery vehicle into unloading bins and moved via conveyors and bucket elevators into large bins or silos. Storing grain is a science. The right moisture, heat and air must be maintained or the Barley may mildew, sprout, or ferment. During storage the grain may also be made to go through a fumigation process to eliminate insect pests. Barley is stored according to nutrient level and other quality considerations. Storage times vary. Many mills will clean the Barley at this time to obtain better storage results.

- **Cleaning the Barley:** The first milling steps involve equipment that separates grain from seeds and other grains, removes foreign materials that might have originated during the farmer's harvest such as metal, sticks, stones and straw; and scours the kernels of Barley. It can take as many as six steps. The machines that clean the grain are collectively called the cleaning house.
  - ✓ **Magnetic separator** – The grain first passes by a magnet that removes ferrous metal particles. It will pass through other metal detectors after milling to ensure that no metal pieces are in the finished product. Magnets are also positioned throughout the milling process and at the last step prior to load-out.
  - ✓ **Separator** – Vibrating or rotating drum separators remove bits of wood, straw and almost anything else too big or too small to be the desired grain.
  - ✓ **Aspirator** – Air currents act as a vacuum to remove dust and lighter impurities.
  - ✓ **De-stoner** – Using gravity, the machine separates the heavy material from the light to remove stones that may be the same size as the desired grain.
  - ✓ **Disc separator** – The grain passes through a separator that identifies the size of the kernels even more closely. It rejects anything longer, shorter, rounder, more angular or in any way a different shape. **Scourer** – The scourer removes outer husks, dirt in the kernel crease and any smaller impurities with an intense scouring action. Currents of air pull all the loosened material away.
  - ✓ **Impact Entoleter** – Centrifugal force breaks apart any unsound kernels or insect eggs and aspiration rejects them from the mill flow. From the entoleter, the sound Barley flows to grinding bins, large hoppers that control the feeding of the Barley to the actual milling process.

- ✓ Color Separator – Newer mills may also utilize electronic color separators to simplify the cleaning process.

➤ Grinding Barley: The Barley kernels are now ready to be milled into flour. The modern milling process is a gradual reduction of the Barley kernels through a process of grinding and sifting. This science of analysis, blending, grinding, sifting and blending again results in consistent end products.

Barley kernels are measured or fed from the bins to the “roller mills”, corrugated cylinders made from chilled steel. The rolls are paired and rotate inward against each other, moving at different speeds. Passing through the corrugated “first break” rolls begins the separation of bran, endosperm (starch) and germ.

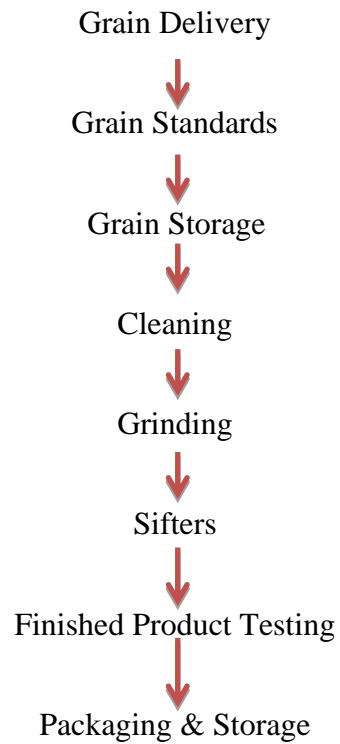
There are about five roller mills or breaks in the system. Again, the goal is to remove the endosperm from the bran and the germ. Each break roll must be set to get as much pure endosperm as possible. The “break” rolls, each have successively finer corrugations. After each trip through the break rolls, the grist is sent back upstairs to drop through sifters. The system reworks the coarse stocks from the sifters and reduces the Barley particles to granular “middlings” that are as free from bran as possible.

In some mills double high roller mills eliminate elevating and sifting the product between two successive passages in the milling process, thus increasing efficiency.

➤ Sifters- The broken particles of Barley are elevated through pneumatic tubes and then dropped into huge, vibrating, box-like sifters where they are shaken through a series of bolting cloths or screens to separate the larger from the smaller particles. Inside the sifter, there may be as many as 27 frames, each covered with either a nylon or stainless-steel screen, with square openings that get smaller and smaller the farther down they go. Up to six different sizes of particles may come from a single sifter.

- Blending: The flour is separated from the fibre and the process is repeated again.
- Finished product testing: After milling, lab tests are run to ensure that the flour meets specifications. Millers also conduct routine monitoring of indicator natural organisms. Although dry flour does not provide an environment that is conducive to microbial growth, it is important to understand that flour is a minimally processed agricultural ingredient and is not a ready-to-eat product. Flour is not intended to be consumed raw. The heat processes of baking, frying, boiling and cooking are adequate to destroy any pathogens that may be present in flour and reduce the potential risk of food borne illness.
- Packaging of Product: The packaging is carried out in a much simple process then milling, the Barley flour is fed to holding tank of the packaging machine, which simply seals one end of continuous packaging first, then it simply fills the packet as per required weight & seals the other end, generating the required packet.

## Flow chart of Barley Flour Processing











### 4. PROJECT COMPONENTS

#### 4.1 Land & Building

The approximate total area required for complete factory setup is 4000-5000 Sq. ft. approximately smooth production including storage area.

## 4.2 Plant & Machinery

<b>Vibrating Pre-Cleaner</b>	It's composed of a vibrating sieve, powered by an exciter which is in turn is powered by an appropriate motor; which is used to remove most of the dirt & large impurities from given grain.	
<b>De-stoner</b>	It's a machine which is used to remove stones from the given grain, widely used in various grain mills in cleaning section.	
<b>Disc Separator</b>	It's a separator class machine, generally used to remove foreign grains from required grain efficiently.	
<b>Magnetic Separator</b>	It's a type of separator which is used to magnetic impurities from given product using powerful electromagnets, used in wide range of industries for separation.	

<b>Aspirator</b>	It's a more fine-tuned separator designed to remove finer impurities like remaining dirt, similar sized impurities, leaves etc.	
<b>Heavy duty Pulveriser Mill</b>	It basically a grinder class machine, which may employ any possible grinding arrangement to achieve, required grinding as per product to be grinded.	
<b>Flour Sifter Machine</b>	It's basically an industrial version of the sieve used to sieve out, large fibers, particles etc, to achieve required particle size in flour.	
<b>Packet Filling &amp;Packaging Machine</b>	It's a simple packaging machine, designed to fill the given food grade plastic material's continuous pouch with required product after sealing one end & after filling sealing the other end also to generate packet of product.	

**Note:** Approx. Total Machinery cost shall be Rs 46.80 lakhs including equipment's but excluding GST and Transportation Cost.

#### **4.3 Power Requirement**

The borrower shall require power load of 20 KW which shall be applied with Power Corporation.

#### **4.4 Manpower Requirement**

20 Manpower are required for the Barley Flour Mill Business.

Includes:

1 Plant Operator

1 Supervisor

4 Skilled Labour

8 Unskilled Labour

1 Manager

4 Administrative Staffs

1 Accountant

## 5. FINANCIALS

### 5.1 Cost of Project

COST OF PROJECT	
(in Lacs)	
PARTICULARS	Amount
Land & Building	Owned/Rented
Plant & Machinery	46.80
Miscellaneous Assets	1.20
Working capital	15.56
<b>Total</b>	<b>63.56</b>

### 5.2 Means of Finance

MEANS OF FINANCE	
PARTICULARS	AMOUNT
Own Contribution (min 10%)	13.16
Subsidy @35%(Max. Rs 10 Lac)	10.00
Term Loan @ 55%	26.40
Working Capital (bank Finance)	14.00
<b>Total</b>	<b>63.56</b>

### 5.3 Projected Balance Sheet

<b>PROJECTED BALANCE SHEET</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>Liabilities</u></b>					
Capital					
opening balance		26.41	32.16	40.45	51.84
Add:- Own Capital	13.16				
Add:- Retained Profit	5.26	9.75	13.29	17.39	21.52
Less:- Drawings	2.00	4.00	5.00	6.00	8.00
Subsidy/grant	10.00				
Closing Balance	26.41	32.16	40.45	51.84	65.36
Term Loan	23.47	17.60	11.73	5.87	-
Working Capital Limit	14.00	14.00	14.00	14.00	14.00
Sundry Creditors	2.15	2.46	2.82	3.20	3.61
Provisions & Other Liab	0.40	0.50	0.60	0.72	0.86
<b>TOTAL :</b>	<b>66.43</b>	<b>66.73</b>	<b>69.61</b>	<b>75.63</b>	<b>83.83</b>
<b><u>Assets</u></b>					
<b>Fixed Assets ( Gross)</b>	48.00	48.00	48.00	48.00	48.00
Gross Dep.	7.14	13.22	18.38	22.78	26.53
<b>Net Fixed Assets</b>	<b>40.86</b>	<b>34.79</b>	<b>29.62</b>	<b>25.22</b>	<b>21.47</b>
<b>Current Assets</b>					
Sundry Debtors	7.98	9.72	11.19	12.74	14.40
Stock in Hand	9.98	11.35	12.87	14.51	16.23
Cash and Bank	7.61	10.87	15.93	23.16	31.72
<b>TOTAL :</b>	<b>66.43</b>	<b>66.73</b>	<b>69.61</b>	<b>75.63</b>	<b>83.83</b>

#### 5.4 Projected Cash Flow

<b>PROJECTED CASH FLOW STATEMENT</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>SOURCES OF FUND</u></b>					

Own Margin	13.16				
Net Profit	5.53	10.60	15.06	20.23	25.43
Depriciation & Exp. W/off	7.14	6.08	5.17	4.40	3.74
Increase in Cash Credit	14.00	-	-	-	-
Increase In Term Loan	26.40	-	-	-	-
Increase in Creditors	2.15	0.31	0.36	0.38	0.40
Increase in Provisions & Oth lib	0.40	0.10	0.10	0.12	0.14
Sunsidy/grant	10.00				
<b>TOTAL :</b>	<b>78.78</b>	<b>17.09</b>	<b>20.69</b>	<b>25.13</b>	<b>29.72</b>
<b><u>APPLICATION OF FUND</u></b>					
Increase in Fixed Assets	48.00				
Increase in Stock	9.98	1.37	1.52	1.63	1.73
Increase in Debtors	7.98	1.74	1.46	1.56	1.65
Repayment of Term Loan	2.93	5.87	5.87	5.87	5.87
Drawings	2.00	4.00	5.00	6.00	8.00
Taxation	0.28	0.85	1.77	2.84	3.91
<b>TOTAL :</b>	<b>71.17</b>	<b>13.83</b>	<b>15.62</b>	<b>17.90</b>	<b>21.16</b>
Opening Cash & Bank Balance	-	7.61	10.87	15.93	23.16
Add : Surplus	7.61	3.26	5.07	7.23	8.56
Closing Cash & Bank Balance	<b>7.61</b>	<b>10.87</b>	<b>15.93</b>	<b>23.16</b>	<b>31.72</b>

## 5.5 Projected Profitability

<b>PROJECTED PROFITABILITY STATEMENT</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>
Capacity Utilisation %	50%	55%	60%	65%	70%
<b><u>SALES</u></b>					
<b>Gross Sale</b>					
Barley Flour	159.60	194.47	223.70	254.86	287.93
<b>Total</b>	<b>159.60</b>	<b>194.47</b>	<b>223.70</b>	<b>254.86</b>	<b>287.93</b>
<b>COST OF SALES</b>					
Raw Material Consumed	92.16	105.60	120.96	137.28	154.56
Electricity Expenses	4.80	5.52	6.35	7.30	8.03
Depreciation	7.14	6.08	5.17	4.40	3.74
Wages & labour	18.12	19.93	21.93	24.12	26.53
Repair & maintenance	3.99	4.86	5.59	6.37	7.20
Packaging	11.97	14.59	16.78	19.11	21.59
<b>Cost of Production</b>	<b>138.18</b>	<b>156.57</b>	<b>176.77</b>	<b>198.58</b>	<b>221.66</b>
<b>Add: Opening Stock /WIP</b>	-	6.91	7.83	8.84	9.93
<b>Less: Closing Stock /WIP</b>	6.91	7.83	8.84	9.93	11.08
Cost of Sales	131.27	155.65	175.76	197.49	220.50
<b>GROSS PROFIT</b>	<b>28.33</b>	<b>38.82</b>	<b>47.94</b>	<b>57.36</b>	<b>67.43</b>
	<b>17.75%</b>	<b>19.96%</b>	<b>21.43%</b>	<b>22.51%</b>	<b>23.42%</b>
Salary to Staff	7.08	7.79	8.57	9.42	10.37

Interest on Term Loan	2.59	2.29	1.64	0.99	0.35
Interest on working Capital	1.54	1.54	1.54	1.54	1.54
Rent	3.60	3.96	4.36	4.79	5.27
selling & adm exp	7.98	12.64	16.78	20.39	24.47
<b>TOTAL</b>	<b>22.79</b>	<b>28.21</b>	<b>32.88</b>	<b>37.14</b>	<b>42.00</b>
NET PROFIT	5.53	10.60	15.06	20.23	25.43
	<b>3.47%</b>	<b>5.45%</b>	<b>6.73%</b>	<b>7.94%</b>	<b>8.83%</b>
Taxation	0.28	0.85	1.77	2.84	3.91
PROFIT (After Tax)	5.26	9.75	13.29	17.39	21.52

## 5.6 Production and Yield

### COMPUTATION OF PRODUCTION OF BARLEY FLOUR

#### Items to be Manufactured

Barley Flour

Machine capacity Per hour	200	KG
Total working Hours	8	
Machine capacity Per Day	1,600	
working days in amonth	25	Days
working days per annum	300	
machine capacity per annum	480000	KG

<b>Production of Barley Flour</b>		
<b>Production</b>	<b>Capacity</b>	<b>KG</b>
1st year	50%	240,000
2nd year	55%	264,000
3rd year	60%	288,000
4th year	65%	312,000
5th year	70%	336,000

<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	50%	38.40	92.16
2nd year	55%	40.00	105.60
3rd year	60%	42.00	120.96
4th year	65%	44.00	137.28
5th year	70%	46.00	154.56

## **5.7 Sales Revenue**

<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	-	12,000	13,200	14,400	15,600
Production	240,000	264,000	288,000	312,000	336,000
Less : Closing Stock	12,000	13,200	14,400	15,600	16,800
<b>Net Sale</b>	<b>228,000</b>	<b>262,800</b>	<b>286,800</b>	<b>310,800</b>	<b>334,800</b>
sale price per KG	70.00	74.00	78.00	82.00	86.00
<b>Sales (in Lacs)</b>	<b>159.60</b>	<b>194.47</b>	<b>223.70</b>	<b>254.86</b>	<b>287.93</b>

## 5.8 Working Capital Assessment

<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>					
	6.91	7.83	8.84	9.93	11.08
<b><u>Raw Material</u></b>					
-	3.07	3.52	4.03	4.58	5.15
<b>Closing Stock</b>	<b>9.98</b>	<b>11.35</b>	<b>12.87</b>	<b>14.51</b>	<b>16.23</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	9.98				
Less : Creditors	2.15				
<b>Paid stock</b>	<b>7.83</b>	<b>10%</b>	<b>0.78</b>	<b>90%</b>	<b>7.05</b>
<b>Sundry Debtors</b>	<b>7.98</b>	<b>10%</b>	<b>0.80</b>	<b>90%</b>	<b>7.18</b>
	<b>15.81</b>		<b>1.58</b>		<b>14.23</b>
<b>MPBF</b>					<b>14.23</b>
<b>WORKING CAPITAL LIMIT DEMAND ( from Bank)</b>					<b>14.00</b>
<b>Working Capital Margin</b>					<b>1.56</b>

## 5.9 Power, Salary & Wages Calculation

<b>Utility Charges (per month)</b>		
<b>Particulars</b>	<b>value</b>	<b>Description</b>
Power connection required	20	KWH
consumption per day	160	units
Consumption per month	4,000	units
Rate per Unit	10	Rs.
power Bill per month	40,000	Rs.

<b><u>BREAK UP OF LABOUR CHARGES</u></b>			
<b>Particulars</b>	<b>Wages Rs. per Month</b>	<b>No of Employees</b>	<b>Total Salary</b>
Plant Operator	15,000	1	15,000
Supervisor	20,000	1	20,000
Skilled (in thousand rupees)	12,000	4	48,000
Unskilled (in thousand rupees)	8,500	8	68,000
<b>Total salary per month</b>			<b>151,000</b>
<b>Total annual labour charges</b>	<b>(in lacs)</b>		<b>18.12</b>

<b><u>BREAK UP OF STAFF SALARY CHARGES</u></b>			
<b>Particulars</b>	<b>Salary Rs. per Month</b>	<b>No of Employees</b>	<b>Total Salary</b>
Administrative Staff	6,000	4	24,000
Manager	20,000	1	20,000
Accountant	15,000	1	15,000
<b>Total salary per month</b>			<b>59,000</b>
<b>Total annual Staff charges</b>	<b>(in lacs)</b>		<b>7.08</b>

## 5.10 DSCR

<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	12.40	15.82	18.46	21.79	25.26
Interest on Term Loan	2.59	2.29	1.64	0.99	0.35
<b>Total</b>	<b>14.99</b>	<b>18.11</b>	<b>20.10</b>	<b>22.78</b>	<b>25.61</b>
<b><u>REPAYMENT</u></b>					
Instalment of Term Loan	2.93	5.87	5.87	5.87	5.87
Interest on Term Loan	2.59	2.29	1.64	0.99	0.35
<b>Total</b>	<b>5.53</b>	<b>8.15</b>	<b>7.51</b>	<b>6.86</b>	<b>6.22</b>
<b>DEBT SERVICE COVERAGE RATIO</b>	<b>2.71</b>	<b>2.22</b>	<b>2.68</b>	<b>3.32</b>	<b>4.12</b>
<b>AVERAGE D.S.C.R.</b>	<b>3.01</b>				

## 5.11 Depreciation

<b><u>COMPUTATION OF DEPRECIATION</u></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	46.80	1.20	48.00
Total	46.80	1.20	48.00
Less : Depreciation	7.02	0.12	7.14
<b>WDV at end of Year</b>	<b>39.78</b>	<b>1.08</b>	<b>40.86</b>
Additions During The Year	-	-	-
Total	39.78	1.08	40.86
Less : Depreciation	5.97	0.11	6.08
<b>WDV at end of Year</b>	<b>33.81</b>	<b>0.97</b>	<b>34.79</b>
Additions During The Year	-	-	-
Total	33.81	0.97	34.79
Less : Depreciation	5.07	0.10	5.17
<b>WDV at end of Year</b>	<b>28.74</b>	<b>0.87</b>	<b>29.62</b>
Additions During The Year	-	-	-
Total	28.74	0.87	29.62
Less : Depreciation	4.31	0.09	4.40
<b>WDV at end of Year</b>	<b>24.43</b>	<b>0.79</b>	<b>25.22</b>
Additions During The Year	-	-	-
Total	24.43	0.79	25.22
Less : Depreciation	3.66	0.08	3.74
<b>WDV at end of Year</b>	<b>20.77</b>	<b>0.71</b>	<b>21.47</b>

## 5.12 Repayment schedule

REPAYMENT SCHEDULE OF TERM LOAN								
							Interest	11.00%
							<b>Closing</b>	
Year	Particulars	Amount	Addition	Total	Interest	Repayment	Balance	
ist	Opening Balance							
	1st month	-	26.40	26.40	-	-	26.40	
	2nd month	26.40	-	26.40	0.24	-	26.40	
	3rd month	26.40	-	26.40	0.24	-	26.40	
	4th month	26.40	-	26.40	0.24	-	26.40	

	5th month	26.40	-	26.40	0.24		26.40
	6th month	26.40	-	26.40	0.24		26.40
	7th month	26.40	-	26.40	0.24	0.49	25.91
	8th month	25.91	-	25.91	0.24	0.49	25.42
	9th month	25.42	-	25.42	0.23	0.49	24.93
	10th month	24.93	-	24.93	0.23	0.49	24.44
	11th month	24.44	-	24.44	0.22	0.49	23.96
	12th month	23.96	-	23.96	0.22	0.49	23.47
					2.59	2.93	
<b>2nd</b>	Opening Balance						
	1st month	23.47	-	23.47	0.22	0.49	22.98
	2nd month	22.98	-	22.98	0.21	0.49	22.49
	3rd month	22.49	-	22.49	0.21	0.49	22.00
	4th month	22.00	-	22.00	0.20	0.49	21.51
	5th month	21.51	-	21.51	0.20	0.49	21.02
	6th month	21.02	-	21.02	0.19	0.49	20.53
	7th month	20.53	-	20.53	0.19	0.49	20.04
	8th month	20.04	-	20.04	0.18	0.49	19.56
	9th month	19.56	-	19.56	0.18	0.49	19.07
	10th month	19.07	-	19.07	0.17	0.49	18.58
	11th month	18.58	-	18.58	0.17	0.49	18.09
	12th month	18.09	-	18.09	0.17	0.49	17.60
					<b>2.29</b>	<b>5.87</b>	
<b>3rd</b>	Opening Balance						

	1st month	17.60	-	17.60	0.16	0.49	17.11
	2nd month	17.11	-	17.11	0.16	0.49	16.62
	3rd month	16.62	-	16.62	0.15	0.49	16.13
	4th month	16.13	-	16.13	0.15	0.49	15.64
	5th month	15.64	-	15.64	0.14	0.49	15.16
	6th month	15.16	-	15.16	0.14	0.49	14.67
	7th month	14.67	-	14.67	0.13	0.49	14.18
	8th month	14.18	-	14.18	0.13	0.49	13.69
	9th month	13.69	-	13.69	0.13	0.49	13.20
	10th month	13.20	-	13.20	0.12	0.49	12.71
	11th month	12.71	-	12.71	0.12	0.49	12.22
	12th month	12.22	-	12.22	0.11	0.49	11.73
					<b>1.64</b>	<b>5.87</b>	
<b>4th</b>	Opening Balance						
	1st month	11.73	-	11.73	0.11	0.49	11.24
	2nd month	11.24	-	11.24	0.10	0.49	10.76
	3rd month	10.76	-	10.76	0.10	0.49	10.27
	4th month	10.27	-	10.27	0.09	0.49	9.78
	5th month	9.78	-	9.78	0.09	0.49	9.29
	6th month	9.29	-	9.29	0.09	0.49	8.80
	7th month	8.80	-	8.80	0.08	0.49	8.31
	8th month	8.31	-	8.31	0.08	0.49	7.82
	9th month	7.82	-	7.82	0.07	0.49	7.33

10th month	7.33	-	7.33	0.07	0.49	6.84
11th month	6.84	-	6.84	0.06	0.49	6.36
12th month	6.36	-	6.36	0.06	0.49	5.87
				<b>0.99</b>	<b>5.87</b>	
<b>5th</b>	Opening Balance					
1st month	5.87	-	5.87	0.05	0.49	5.38
2nd month	5.38	-	5.38	0.05	0.49	4.89
3rd month	4.89	-	4.89	0.04	0.49	4.40
4th month	4.40	-	4.40	0.04	0.49	3.91
5th month	3.91	-	3.91	0.04	0.49	3.42
6th month	3.42	-	3.42	0.03	0.49	2.93
7th month	2.93	-	2.93	0.03	0.49	2.44
8th month	2.44	-	2.44	0.02	0.49	1.96
9th month	1.96	-	1.96	0.02	0.49	1.47
10th month	1.47	-	1.47	0.01	0.49	0.98
11th month	0.98	-	0.98	0.01	0.49	0.49
12th month	0.49	-	0.49	0.00	0.49	-
				<b>0.35</b>	<b>5.87</b>	
DOOR TO DOOR	60	MONTHS				
MORATORIUM PERIOD	6	MONTHS				
REPAYMENT PERIOD	54	MONTHS				

### 5.13 Break Even Point Analysis

BREAK EVEN POINT ANALYSIS					
Year	I	II	III	IV	V

<b>Net Sales &amp; Other Income</b>	159.60	194.47	223.70	254.86	287.93
Less : Op. WIP Goods	-	6.91	7.83	8.84	9.93
Add : Cl. WIP Goods	6.91	7.83	8.84	9.93	11.08
<b>Total Sales</b>	<b>166.51</b>	<b>195.39</b>	<b>224.71</b>	<b>255.95</b>	<b>289.08</b>
<b>Variable &amp; Semi Variable Exp.</b>					
Raw Material Consumed	92.16	105.60	120.96	137.28	154.56
Electricity Exp/Coal Consumption at 85%	4.08	4.69	5.40	6.21	6.83
Wages & Salary at 60%	15.12	16.63	18.30	20.12	22.14
Selling & administrative Expenses 80%	6.38	10.11	13.42	16.31	19.58
Interest on working Capital	1.54	1.54	1.54	1.54	1.54
Repair & maintenance	3.99	4.86	5.59	6.37	7.20
Packaging	11.97	14.59	16.78	19.11	21.59
<b>Total Variable &amp; Semi Variable Exp</b>	<b>135.24</b>	<b>158.02</b>	<b>181.98</b>	<b>206.95</b>	<b>233.43</b>
<b>Contribution</b>	<b>31.27</b>	<b>37.37</b>	<b>42.73</b>	<b>49.00</b>	<b>55.65</b>
<b>Fixed &amp; Semi Fixed Expenses</b>					
Electricity Exp/Coal Consumption at 15%	0.72	0.83	0.95	1.10	1.20
Wages & Salary at 40%	10.08	11.09	12.20	13.42	14.76
Interest on Term Loan	2.59	2.29	1.64	0.99	0.35
Depreciation	7.14	6.08	5.17	4.40	3.74
Selling & administrative Expenses 20%	1.60	2.53	3.36	4.08	4.89
Rent	3.60	3.96	4.36	4.79	5.27
<b>Total Fixed Expenses</b>	<b>25.73</b>	<b>26.76</b>	<b>27.67</b>	<b>28.77</b>	<b>30.22</b>
<b>Capacity Utilization</b>	<b>50%</b>	<b>55%</b>	<b>60%</b>	<b>65%</b>	<b>70%</b>
<b>OPERATING PROFIT</b>	<b>5.53</b>	<b>10.60</b>	<b>15.06</b>	<b>20.23</b>	<b>25.43</b>
<b>BREAK EVEN POINT</b>	<b>41%</b>	<b>39%</b>	<b>39%</b>	<b>38%</b>	<b>38%</b>
<b>BREAK EVEN SALES</b>	<b>137.04</b>	<b>139.95</b>	<b>145.51</b>	<b>150.30</b>	<b>157.00</b>

## **6. LICENSE & APPROVALS**

- Obtain the GST registration.
- Additionally, obtain the Udyog Aadhar registration Number.
- Fire/pollution license as required.
- FSSAI License
- Factory License
- Choice of a Brand Name of the product and secure the name with Trademark if required.

## **7. ASSUMPTIONS**

1. Production Capacity of Barley flour is 200 kg per hour. First year, Capacity has been taken @ 50%.
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 15 days.
4. Credit period to Sundry Debtors has been given for 15 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 20 KW.
10. Increase in sales and raw material costing has been taken @ 5% on a yearly basis.

## Limitations of the Model DPR and Guidelines for Entrepreneurs

### Limitations of the Model DPR

- i. This model DPR has provided only the basic standard components and methodology to be adopted by an entrepreneur while submitting a proposal under the Formalization of Micro Food Processing Enterprises Scheme of MoFPI.
- ii. This is a model DPR made to provide general methodological structure not for specific entrepreneur/crops/location. Therefore, information on the entrepreneur, forms and structure (proprietorship/partnership/cooperative/ FPC/joint stock company) of his business, details of proposed DPR, project location, raw material base/contract sourcing, entrepreneurs own SWOT analysis, detailed market research, rationale of the project for specific location, community advantage/benefit from the project, employment generation and many more detailed aspects not included.
- iii. The present DPR is based on certain assumptions on cost, prices, interest, capacity utilization, output recovery rate and so on. However, these assumptions in reality may vary across places, markets and situations; thus the resultant calculations will also change accordingly.