

MALTED FOOD BEVERAGES



INTRODUCTION:

India is fervently poised for the Food Revolution. This ensures agricultural diversification and large investments in food processing. The concept of food security has two dimensions – availability of food and access to food. Thirty percent of the food produced in the country is wasted during storage, infestation, rodents. There is a need to increase the range of foods available to improve overall nutrition. Special foods for malnutrition children, patients suffering from hypertension, diabetes which gives health benefits, are needed. Malted food is proven to be the boost in this respect. Packaging of food products to meet the required specifications has become important to ensure safety and hygiene.

OBJECTIVE:

- Major objective of this project is to support malnutrition affected children in India. Utilization of regional food crops for the purpose of high value nutrition products is the need of the hour to eliminate malnutrition in children and pregnant women in India.
- To increase the market potential of value added products based on the regional food crops.
- To encourage entrepreneurs in the region based agriculture raw materials processing to manufacture malted food.

RAW MATERIAL AVAILABILITY:

The main raw materials for these products are Oats, rye, barley, wheat, sorghum, millet, corn, soya proteins, other types of cereals and legumes, spouted pulses etc. All raw materials are easily available in across India.

The main ingredients in malted beverages are malt extract, cocoa powder, milk solids, liquid glucose and vitamins the product is labeled with the information of nutrition and available energy per 100 gram of product.

SUITABLE LOCATION:

Malted Food Beverages can be manufactured at any location.

MARKET OPPORTUNITIES:

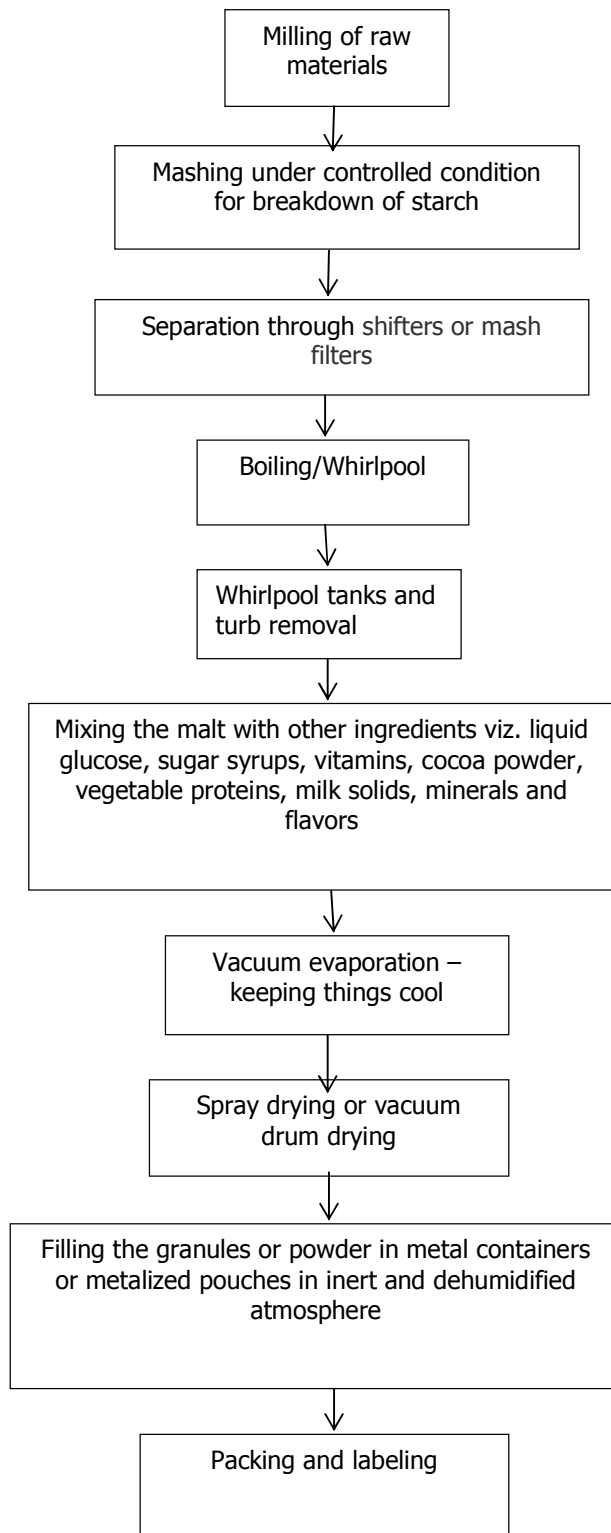
In India, Rs. 14.4 billion malted foods market is composed of two segments - brown and white. Malted beverages with nutritional attributes control around 70% of the total market and energy drinks (brown beverages) account for the rest. The malted food drink industry is dominated by few players. These include brands such as 'Horlicks', 'Complain' and 'Viva', which are mainly known as white beverages. 'Boost', 'Bournvita', 'Milo' and 'Maltova' on the other hand are classified as brown drink. The consumption pattern of malted beverages differs according to usage patterns across geographic zones in the country.

Development of rural infrastructure, rural extension services, agro-based and food processing industries have been given high priority in every five year plan. The process of setting up of Food Parks in various key locations of the country with the involvement of the various state governments and other allied institutions is also playing a major role in development.

Food industries are projected to have overall steady growth between 8% -8.5 % per annum. The other food processing sectors which are projected to achieve excellent growth of 20% and above are –Semi Processed/Cooked Ready to eat (22%), Ice-Cream(20%), Edible/Vegetable oil (20%),Wine(22%).

MANUFACTURING PROCESS:

Flow Sheet for Making Malt Extracts:



Step 1: Milling

The milling equipment consists of removal of stones, dirt, extraneous matter, metals from the grains and further conditioned the grains with required moisture content. The sprouted grains are milled to get malt. For plants using lautertuns, milling is accomplished with four or six-roller mills. For plants using mash filters or other methods, hammer mills are used.

Step 2: Mashing

Brewing-grade malt extracts are typically mashed under controlled conditions to produce various degrees of starch breakdown and resultant fermentation. This step involves careful control of the pH and predetermined multiple temperature steps are required during mashing.

Food-grade extracts may be mashed in a variety of methods, but are usually concerned more with optimum extraction speed with desired degree of fermentation. Typically a simple single step mashing process is employed.

Step 3: Separation

In the modern brewing-grade plants, the wort is separated from the spent grains in lautertuns or mash filters. Both these methods produce high-quality worts and can be set up for high throughput, with as many as 10–14 brews per day.

Step 4: Boiling/Whirlpool

Boiling and hot break separation is used in brewing-grade products to achieve sterilization, coagulation of proteins, volatilization of di-methyl sulfide (DMS gas) precursors, isomerization of hops, etc. Hopped extracts are boiled for long period in order to achieve better hop utilization, though many are made with hop extracts to achieve better consistency. This also reduces the need for boiling. Unhopped extracts are typically boiled only long enough to achieve good protein coagulation. Because of the large scale of malt extract brew houses use highly efficient boiling systems.

Food grade plants often do not use brew kettles or whirlpool tanks and frequently run wort straight from the lautertun to buffer tanks to feed the evaporator.

Step 5: Whirlpool Tanks and Trub Removal

Brewing-grade plants remove proteins coagulated during the process using whirlpool tanks or centrifuges. This produces a clearer overall extract suitable for brewing. Some also go an extra step and remove additional "cold break" prior to evaporation.

Step 6: Mixing of malt with other ingredients

This step include mixing of malt with other ingredients viz liquid glucose, sugar syrups, vitamins, cocoa powder, powder, milk solids, minerals and flavors. Further the mixture is homogenized.

Step 6: Vacuum Evaporation — Keeping Things Cool

It is concentrated in vacuum evaporators.

Step 7: Spray Drying

There are several types of dryers that can be used to produce malt extract. They can be divided into two types, atmospheric and vacuum. For powder making spray dryers are used and for granule making rotary dryers are used.

CAPACITY OF THE PROJECT:

- The total capacity of the unit is 120 MT per year.

PRODUCTION TARGETS (PER ANNUM):

- The scheme is worked out per shift (8 Hour) basis and 300 working days per annum.
- Assume there'll be 70% production in first year.
- Quantity: 84 MT per year or 7 MT per month.

PROJECT COMPONENT AND COST:

Major components of the projects and their costs are described in the table hereunder:

Financial Aspects:-**APPLICATION OF FUNDS**

| Particular | Amount |
|------------------------------|----------------------|
| Land | 600 sq. meter |
| Building | covered area on rent |
| Plant & Machinery | 11,110,000.00 |
| Office Equipment & Furniture | 100,000.00 |
| Working Capital | 1,634,488.84 |
| Pre-Operative Expenses | 25,000.00 |
| Total | 12,869,488.84 |

SOURCE OF FUND

| Particular | Amount |
|--------------------------|----------------------|
| Own Capital | 3,571,619.99 |
| Loan from Banks | 8,407,500.00 |
| Loan for Working Capital | 891,479.97 |
| Total | 12,870,599.95 |

FIXED ASSETS

| | | | | |
|-------------------------------------|--|-------------|-------------|------------------------|
| (1) Land And Building: | | | | Value (Rs.) |
| | Land & Building 600 sq. meter covered area on rent | | | 300,000 per annum |
| (2) Machinery And Equipment: | | | | |
| S. N. | Description (Name of machine with specification) | Qty. | Rate | Value (Rs.) |
| Production Unit | | | | |
| i | Milling machine with de-stoner | 1 | 650,000 | 650,000.00 |
| ii | Magnetic seperator and washing and conditioning silos | 1 | 300,000 | 300,000.00 |
| iii | Whirlpool tanks made of SS, stirring arrangement homogenizer double jacketed | 2 | 550,000 | 1,100,000.00 |
| iv | Blending Tanks | 1 | 400,000 | 400,000.00 |
| v | Vacuume Evaporator | 1 | 1,400,000 | 1,400,000.00 |
| vi | Spray dryer | 1 | 5,000,000 | 5,000,000.00 |
| vii | Powder Filling and Packing machine | 1 | 500,000 | 500,000.00 |
| viii | Bar-coding and printing maching | 1 | 250,000 | 250,000.00 |
| ix | Boiller | 1 | 200,000 | 200,000.00 |
| x | Effluent treatment Plant | 1 | 200,000 | 200,000.00 |
| xi | Miscelleneous Equipments / items | - | - | 100,000.00 |
| | Total Cost of Machinery & Equipments | | | 10,100,000.00 |
| | Electrification & Installation Charges @ 10% | | | 1,010,000.00 |
| | Total Cost of Production Unit | | | 11,110,000.00 |
| | Furniture & Fixtures | | - | 100,000.00 |
| 3 | Pre-Operative Expenses: | | | - 25,000.00 |
| | Total Fixed Capital (2+3) | | | - 11,135,000.00 |

RAW MATERIAL REQUIREMENT & STOCK

| Particulars | Mode | Year' 1 |
|---|---------|---------------------|
| Capacity Utilisation | | 70% |
| Daily Production at 100% capacity-No of Pkts | 400.00 | |
| No of Working days per annum | 300 | |
| Annual Production | Kg | 84,000.00 |
| Wastage | % | 2.00 |
| Net Production | Kg | 82,320.00 |
| GROSS CONSUMPTION | | |
| Legumes | Kg | 75,460.00 |
| Other ingredients: cocoa powder, milk solids, liquid glucose, vitamins etc. | Kg | 6,860.00 |
| Rate (Per Kg) | | |
| Legumes | Rs | 35.00 |
| Other ingredients: cocoa powder, milk solids, liquid glucose, vitamins etc. | Rs | 75.00 |
| Annual Consumption | | |
| Legumes | Rs | 2,641,100.00 |
| Other ingredients: cocoa powder, milk solids, liquid glucose, vitamins etc. | Rs | 514,500.00 |
| Total | | 3,155,600.00 |
| Stock of Raw Material | 30 days | 259,364.38 |
| Stock of WIP | 02 days | 14,471.78 |
| Purchase Cost of Raw Material | Rs | 3,429,436.16 |

WORKING CAPITAL REQUIREMENT

| Particulars | Days | Year' 1 |
|----------------------------|------|---------------------|
| Raw Material | 30 | 259,364.38 |
| Work in Process | 2 | 14,471.78 |
| Finished Goods | 10 | 211,639.03 |
| Receivables | 30 | 1,234,800.00 |
| Advance/Security | | 200,000.00 |
| Total | | 1,920,275.19 |
| Less: Creditors | 30 | 285,786.35 |
| Net Current Assets | | 1,634,488.84 |
| Paid Stock | | 199,688.84 |
| 75% of Paid Stock | | 149,766.63 |
| 60% of Book Debts | | 740,880.00 |
| Bank Limits | | 890,646.63 |
| Margin for Working Capital | | 743,842.21 |

**SELLING & ADMINISTRATION
EXPENSES**

| Particular | Year I |
|---------------------------|-------------------|
| i Postage | 30,000.00 |
| ii Commission on sales | 120,000.00 |
| iii Office Expenses | 90,000.00 |
| iv Tour & Travel | 80,000.00 |
| v Printing & Stationary | 50,000.00 |
| vi Advertisement | 180,000.00 |
| vii Telephone | 65,000.00 |
| viii Repair & Maintenance | 190,000.00 |
| ix Conveyance | 100,000.00 |
| x Sales expenses | 120,000.00 |
| xi Insurance | 100,000.00 |
| xii Misc. Expenses | 80,000.00 |
| Total | 1205000.00 |

STAFF AND LABOUR EXPENSES

(1)

| S. No. | Description | No. | Salary | Total Salaries-Year I |
|--|------------------------|-----|-----------|-----------------------|
| (a) Administrative & Supervisory | | | | |
| i | Production Manager | 1 | 15,000.00 | 180000.00 |
| ii | Supervisor/storekeeper | 1 | 10,000.00 | 120,000.00 |
| iii | Accountant | 1 | 10,000.00 | 120,000.00 |
| iv | Salesman | 2 | 8,000.00 | 192,000.00 |
| v | Peon/watchman | 1 | 5,000.00 | 60,000.00 |
| vi | Sweeper | 1 | 5,000.00 | 60000.00 |
| Total Salaries | | | | 732,000.00 |
| (b) Technical Skilled & Unskilled | | | | |
| i | Skilled Worker | 1 | 10,000.00 | 120,000.00 |
| ii | Semi Skilled Worker | 2 | 8,000.00 | 192,000.00 |
| iii | Helper | 3 | 5000 | 180,000.00 |
| Total Wages | | | | 492,000.00 |
| Grand Total | | | | 1,224,000.00 |

**MANUFACTURING AND PROFIT & LOSS
ACCOUNT**

| Particulars | Year' 1 |
|---|----------------------|
| Sales Value of Malted Food Powder @ Rs. 180 per Kg. | 14,817,600.00 |
| Cost of Production: | |
| Raw Material Consumed: | |
| Opening Stock | - |
| Add: Purchases | 3,429,436.16 |
| | <u>3,429,436.16</u> |
| Less: Closing Stock | 259,364.38 |
| Raw Material Consumption | 3,170,071.78 |
| Add: Op Stock of WIP | - |
| | <u>3,170,071.78</u> |
| Less: Cl Stock of WIP | 14,471.78 |
| | <u>3,155,600.00</u> |
| Power & Fuel | 900,000.00 |
| Manufacturing Wages | 492,000.00 |
| Bonus & Incentives | 34,440.00 |
| Packaging Materials | 1,000,000.00 |
| Rent | 300,000.00 |
| Raw material storage & ins. | 24,600.00 |
| Cost | |
| Carriage inward | 30,864.93 |
| Depreciation | 1,681,500.00 |

BALANCE SHEET

| Particulars | Year' 1 |
|----------------------|----------------------|
| Liabilities: | |
| Capital | 3,571,342.21 |
| Reserve & Surplus | 1,768,780.19 |
| Secured Loan: | |
| Term Loan | 6,726,000.00 |
| Unsecured loan: | |
| Current Liabilities: | |
| Bank Borrowings | 890,646.63 |
| Sundry Creditors | 285,786.35 |
| | <u>13,242,555.38</u> |
| Assets: | |
| Fixed Assets: | |
| Gross Block: | 11,210,000.00 |
| Less: Depreciation | 1,681,500.00 |
| | <u>9,528,500.00</u> |

| | |
|----------------------------------|---------------------|
| Total Cost of Production | 7,619,004.93 |
| Add: Op. Stock of Finish. Goods | - |
| | 7,619,004.93 |
| Less: Cls. Stock of F. Goods | 211,639.03 |
| Cost of Sales | 7,407,365.90 |
| Gross Profit | 7,410,234.10 |
| | 0.50 |
| Selling & Admin Cost: | |
| Expenses | 1,205,000.00 |
| Salary | 732,000.00 |
| Financial Expenses: | |
| Interest on Term Loan | 1,145,521.88 |
| Interest on W. Capital | 111,330.83 |
| Pre. Expenses | 5,000.00 |
| Profit Before Taxation | 4,211,381.40 |
| Taxation | 1,263,414.42 |
| Net Profit After Taxation | 2,947,966.98 |
| Cash withdrawal | 1,179,186.79 |
| Transfer to Reserves | 1,768,780.19 |
| Cumulative Reserves | 1,768,780.19 |
| % of PBT on Sales | 28.42 |

| | |
|----------------------|----------------------|
| Current Assets: | |
| Inventories | 485,475.19 |
| Receivables | 1,234,800.00 |
| Advance/Security | 200,000.00 |
| Cash & Bank | 1,773,780.19 |
| Balance | |
| Preliminary Expenses | 20,000.00 |
| | <u>13,242,555.38</u> |
| Difference | 0.00 |

RATIO ANALYSIS

| Particulars | Year' 1 |
|-------------------------|--------------|
| Net Profit ratio | |
| NP*100/Total sales | 19.90 |
| Rate of Return | |
| NP*100/Total Investment | 22.91 |

BREAK EVEN ANALYSIS

| | |
|-------------------------|---|
| Fixed Cost | |
| Rent | 300,000.00 |
| Interest on Borrowing | 1,145,521.88 |
| 40% of Salaries | 292,800.00 |
| 40% of Utilities | 360,000.00 |
| 25% of Admin Exp | 301,250.00 |
| Depreciation | 1,681,500.00 |
| Total | 4,081,071.88 |
| Break Even Point | $\frac{\text{Fixed Cost} * 100}{\text{Fixed Cost} + \text{Profit}}$ |
| | 58.06 |

ADDRESS OF MACHINERY & EQUIPMENT SUPPLIERS:

- M/s Bajaj Processpack Maschinen Pvt. Ltd., 7/27, Jai Lakshmi Industrial Estate, Sahibabad Industrial Area, Sahibabad, Dist. Ghaziabad (U.P.) - 201301.
- M/s Kanchan Metals Pvt Ltd., 19G, Everest House, 46C, Jawaharlal Nehru Road, Kolkata (West Bengal) - 700 071.
- M/s Hindustan Insustries, Flat No. 6, Building No. - P - 11/12, Gandharvanagri, Pune-Nashik Highway, Moshi, Pune - 412105, Maharashtra, India
- M/s KSJ Foods & Services Pvt. Ltd., 7/87, Vishnu Prasad, Mahanti Road, Vile Parle (E), Mumbai – 400057.
- M/s Econo Mode Food Equipment (India) Private Limited, B - 6, 5 - Acre, Kothari Compound, Tikuji - Ni - Wadi Road, Thane - 400607, Maharashtra.