# Soya Based Food Products

| | | |
|---|---|---|
| PRODUCT CODE | : | New Products |
| QUALITY AND STANDARDS | : | PFA (Prevention of Food Adulteration Act, 1955 |
| PRODUCTION CAPACITY (PER ANNUM) | : | **Item** / **Qty.( Kg.)** / **Value (Rs.)**<br>Flavoured Soya Milk / 60,000 / 6,60,000<br>Tofu (Soya Paneer) / 6,000 / 2,40,000<br>Soya Curd / 12,000 / 1,44,000 |
| MONTH AND YEAR OF PREPARATION | : | February, 2003 |
| PREPARED BY | : | Small Industries Service Institute<br>Industrial Area-B,<br>Ludhiana-141003<br>Punjab.<br>Phone Nos. : 531733-34-35<br>Fax: 91-161-533225<br>E-mail: sisildh@sisildh.com |

## Introduction

Soyabean is the most cheapest and best health food. Soya milk and related food products are becoming popular throughout the world due to their good nutritional values and medicinal qualities. Soya milk is high in protein, low in fat and carbohydrate and contains no cholesterol. It is an excellent food for babies, children, elderly people and pregnant and lactating women since it contains vegetable protein which is very nutritious and easy to digest. Besides possessing high nutritional values, Soya milk is best for people suffering from diabetes and lactose-intolerance. It can be said that Soyabean is a valuable gift of mother nature to human beings.

## Market Potential

With the increasing health consciousness among the general people, the use of Soyabean is getting acceptance in the form of textured vegetable protein (popularly known as Soya bodi or Soya nuggets), Soya fortified wheat flour, Soya milk, Tofu and Soya curd etc. Being mainly the country of vegetarians, India has indeed a very great potential for Soya products.

Experts predict that the Soya food industry will grow 20% annually over the next few years. Soya milk sales alone rose by 50% in 2001 and is expected to grow by atleast another 300% by the year 2005.

## BASIS AND PRESUMPTIONS

I. It is presumed that the unit will run single shift per day and 300 days in a year.

II. The rate of interest has been taken 15% on an average both for fixed investment and working capital.

III. It is presumed that 1 kg. of Soyabean may yield 7.5 litres of Soyamilk. 1 litre Soyamilk can be converted into two litres of flavoured Soya milk or 1 kg of Soya curd or 200 gms of Soya Paneer (Tofu).

IV. The rates of machinery and equipments and raw materials are those prevailing at the time of preparation of Project Profile. They are likely to vary from place to place and supplier to supplier and necessary changes are to be made as and when required.

## IMPLEMENTATION SCHEDULE

The approximate time required for various activities is given below. However, it may vary from place to place depending upon the local circumstances and enthusiasm of the entrepreneur:

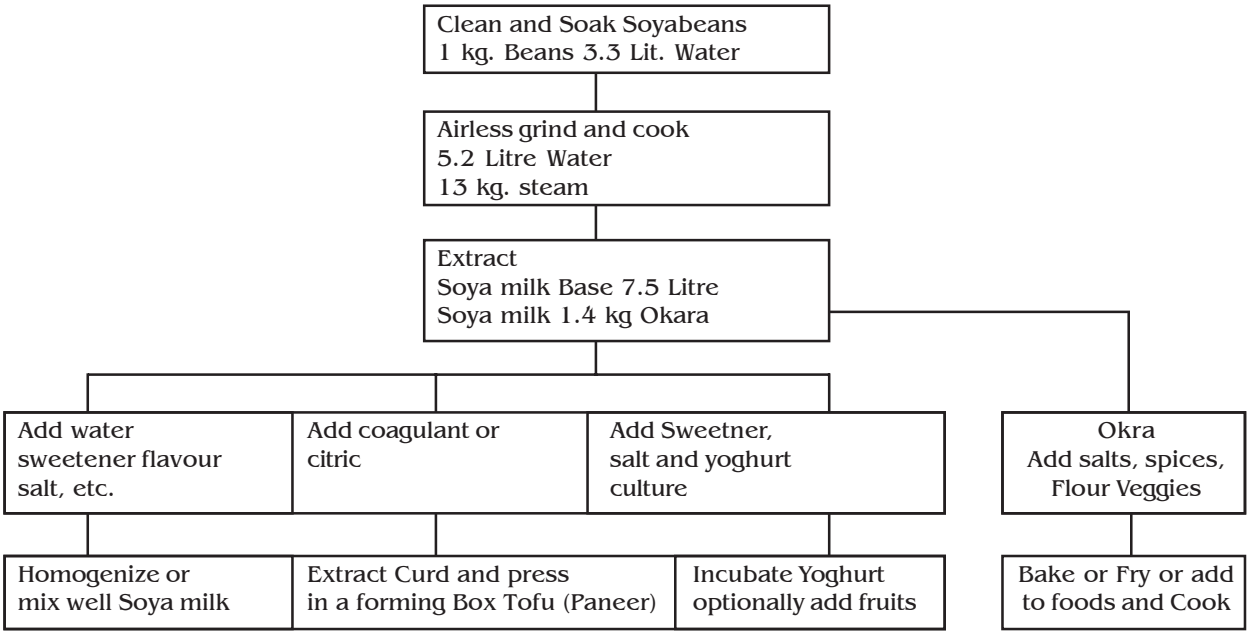
| | |
|---|---|
| 1. Selection of site, provisional registration and preparation of Project Report | 1 Month |
| 2. Sanction of loan | 2-3 Months |
| 3. Selection of machinery | 1 Month |
| 4. Commissioning and trial run, etc. | 4-5 Months |

Due to overlapping of some activities, normally 4 to 5 months are required to implement the Project.

## TECHNICAL ASPECTS

### Process of Manufacture

The initial stage involves the cleaning, sorting of the Soyabean followed by dehulling and soaking at room temperature in 0.5-1% sodium bicarbonate solution in 1: 3 ratio (soya: solution). After soaking, the weight of original soyabean becomes double, the split (dehulled beans) are ground in hot water in 1:7 ratio and filtered to get milk. The residue is known as okra. The milk is then cooled to 70°C and 0.1 molar calcium sulphate/magnesium chloride or 2% citric acid solution is added with slow stirring. These chemicals precipitate/coagulate the proteins of soya milk. The muslin cloth containing Soya protein is pressed in paneer making boxes for 30 to 45 mts. and then cut into pieces of approx. desired size and put in cold water for another 30 minutes. Vacuum packed tofu should always be kept in the fridge and, after unpacking, immersed in water. The various products which can be manufactured are mentioned in the Chart below:




## Quality Control and Standards

Product should conform to the PFA (Prevention of Food Adulteration) Act, 1955.

## Production Capacity (per annum)

| | | |
|---|---|---|
| Flavoured Soya milk | : | 60,000 kg. |
| Soya paneer | : | 6,000 kg. |
| Soya curd | : | 12,000 kg. |

Motive Power 20 H.P.

## Pollution Control

Though no industrial effluent is released in the manufacturing process even then a NOC from State Pollution Control Board is to be obtained before commercial production.

# FINANCIAL ASPECTS

## A. Fixed Capital

| i) Land and Building | | Amount (In Rs.) |
|---|---|---|
| Built up area including mfg. | 100 sq. mtr. (rented) | Rs 2,000 per month |
| Land and Building | | Amount (In Rs.) |
| place, finished store and office etc. | @ Rs 20 per sq. mtr. | |

ii) Machinery and Equipments

| Sl. No. | Description | No. | Amount (In Rs.) |
|---|---|---|---|
| a. | Soya Machine for soya milk and paneer (Tofu) consisting of grinder cooker, Manual Boiler, Filter Press, Tofu Box & Tofu Press. | 1 No. | 1,00,000 |
| b. | Deodorizer | 1 No. | 43,000 |
| c. | Vacuum Packaging Machine | 1 No. | 75,000 |
| d. | Freezer | 2 Nos. | 30,000 |
| e. | Pouch Sealing Machine | 1 No. | 10,000 |
| f. | Tables with AL Top | 3 Nos. | 10,500 |
| g. | Plastic Trays/Tubes and other misc. items | L.S. | 15,000 |
| h. | Packaging -2%, Excise 16% Sales tax-10% | | 79,380 |
| | Total | | 3,62,880 |
| | *Electrification and Installation @ 10%* | | 28,350 |
| | *Office Furniture and Equipments* | | 10,000 |
| | Total | | 4,01,230 |

| | |
|---|---|
| iii. Pre-operative Expenses | 5000 |

Total Fixed Cost (ii+iii) = Rs. 4,06,230

## B. Working Capital (per month)

| i) Personnel | | | Salary (In Rs.) |
|---|---|---|---|
| 1. Manager | 1 No. | @ Rs. 5000 | 5000 |
| 2. Skilled workers | 2 Nos. | @ Rs. 2000 | 4000 |
| 3. Sales Supervisor | 1 No. | @ Rs. 3000 | 3000 |
| 4. Peon | 1 No. | @ Rs. 1500 | 1500 |
| | | Total | 13,500 |
| | | *Perquisites @ 15%* | 2,025 |
| | | Total | 15,525 |

| ii) Raw Materials including Packaging | | Amount (In Rs.) |
|---|---|---|
| i. Soyabean- 800 kg. @ Rs15per kg. | | 12,000 |
| ii. Chemicals and other misc. expenses | L.S. | 8,000 |
| iii. Packaging material for milk and paneer | L.S. | 4,000 |
| | Total | 24,000 |

| iii) Utilities | Amount (In Rs.) |
|---|---|
| 1. Power | 2,000 |
| 2. Fuel/LPG | 5,000 |
| 3. Water | 1,000 |
| Total | 8,000 |

| iv) Other Contingent Expenses | Amount (In Rs.) |
|---|---|
| i. Rent | 2,000 |
| ii. Postage and stationery | 300 |
| iii. Consumable store | 500 |
| iv. Repairs and maintenance | 300 |
| v. Advertisement and publicity | 1,000 |
| vi. Sales Expenses | 1,000 |
| vii. Telephone | 500 |
| viii. Miscellaneous Expenses | 1,400 |
| Total | 7,000 |

| v) Total Recurring Expenses (per month) | | Amount (In Rs.) |
|---|---|---|
| i. | Raw materials | 24,000 |
| ii. | Personnel | 15,525 |
| iii. | Utilities | 8,000 |
| iv. | Other expenses | 7,000 |
| | Total | 54,525 |

vi) Working Capital (for 2 months) Rs.1,09,050

## C. Total Capital Investment

| | | Amount (In Rs.) |
|---|---|---|
| i. | Fixed Capital. | 4,06,230 |
| ii. | Working Capital (for 2 months) | 1,09,050 |
| | Total | 5,15,280 |

# FINANCIAL ANALYSIS

| 1. Cost of Production (per annum) | Amount (In Rs.) |
|---|---|
| 1. Total recurring cost | 6,54,300 |
| 2. Depreciation on machinery @ 20% | 56,700 |
| 3. Depreciation on furniture @ 20% | 2,000 |
| 4. Interest on total investment @ 15% | 77,300 |
| Total | 7,90,300 |
| Say | 7,90,000 |

| 2. Turn-over (per annum) | Total (In Rs.) |
|---|---|
| i. Flavoured Soya milk 60,000 kgs. @ Rs 11per kg. | 6,60,000 |
| ii. Tofu (paneer) 6000 kgs. @ Rs 40 per kg. | 2,40,000 |
| iii. Soya Curd- 12000 kgs. @ Rs 12 per kg. | 1,44,000 |
| Total | 10,44,000 |

3. Net Profit (per annum) Rs. 2,54,000

4. Net Profit Ratio

$$= \frac{254000 \times 100}{1044000}$$

$$= 24\%$$

5. Rate of Return

$$= \frac{254000 \times 100}{515280}$$

$$= 49\%$$

6. Break-even Point

| Fixed Cost (per annum) | Amount (In Rs.) |
|---|---|
| i. Depreciation on machinery | 56,700 |
| ii. Depreciation on furniture | 2,000 |
| iii. Rent | 24,000 |
| iv. 40% of other expenses | 33,600 |
| v. 40% of salary and wages | 74,520 |
| vi. Interest on total investment @ 15% per annum | 77,300 |
| Total | 2,68,120 |

B.E.P.

$$= \frac{2,68,120 \times 100}{2,68,120 + 2,54,000}$$

$$= \frac{2,68,120 \times 100}{5,22,120}$$

$$= 51\%$$

## Addresses of Machinery Suppliers

1. M/s. SSP Limited
   19, DLF Industrial Area-IV,
   13/4, Mathura Road,
   Faridabad- 121003 (Haryana)
   Phone: 0129 (527544), 5277730,
   Fax: 91-129-527744)

## Raw Material Suppliers

Locally Available.