

# FRUIT TOFFEES



## 1.0 INTRODUCTION

Fruit toffees are made from pulpy fruits like banana, mango, jackfruit, guava etc. Fruits are grown seasonally and are perishable in nature. Fruit preservation techniques enable the mankind to enjoy fruits even during off-season and fruit toffees one such product. Fruit toffees are highly nutritious products compared to sugar boiled confectionaries. The prerequisite for this project is availability of fruits all round the year. The state of Uttaranchal produces many fruits and thus availability round the year would not be a problem. The technology is easy and standardised and the capital cost of the project is also not very high.

## 2.0 PRODUCT

### 2.1 Applications

Fruit toffees are made from fruit pulp which is the main ingredient and sugar, glucose, milk powder, hydrogenated fat, essences and colours are added in small quantity. Hence, they are tasty and nutritious.

### 2.2 Availability of technology and Compliances

CFTRI, Mysore, has successfully developed the required know-how. FPO provisions must be complied with.

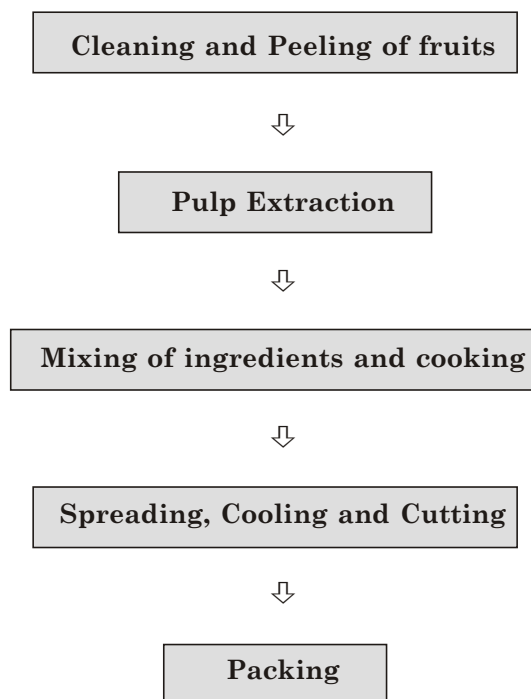
## 3.0 MARKET POTENTIAL

Fruit toffees not only enable enjoyment of certain fruits even during off-season but are nutritious as well, compared to sugar boiled confectionary items. There is a very large and growing market for these toffees and now even the rural population is a big consumer. Organised sector manufacturers find it difficult to cater to this vast market due to problems

of logistics and their prices are also on the higher side. A local manufacturer can compete with large manufacturers on both fronts. Proper marketing network, competitive pricing and appropriate publicity shall be the crucial aspects.

#### 4.0 MANUFACTURING PROCESS

Fresh fruits are cleaned and their pulp is extracted. Then this pulp is cooked till the original volume is reduced to around 35-40%. Other ingredients like sugar, glucose, milk powder, hydrogenated fat, essences, colours etc. are thoroughly mixed with fruit pulp and this mixture is cooked till the final weight becomes around 115-120% of the original weight of pulp. This cooked mass is then transferred to hard but level and smooth surface pre-smearred with fat and flavouring material is added. Finally, the entire mass is spread into a thin sheet of about 1 cm; allowed to cool and set for around 2 hours. This solid sheet is then cut with the help of toffee cutter, dried to bring down the moisture content to 5-6% and individual toffees are packed in either tissue paper or cellophane paper and finally they are packed in plastic jars. CFTRI, Mysore, has successfully developed this process. The process flow chart is as under:



#### 5.0 CAPITAL INPUTS

##### 5.1 Land and Building

The total built-up area requirement is not more than 100 sq.mtrs. and hence it is advisable to buy a suitable readymade shed and fruit washing tank can be constructed outside. The total cost is estimated to be Rs. 2.75 lacs. While finalising the location, FPO provisions must be kept in mind.

## 5.2 Machinery

Annual rated production capacity of 200 tons considering 2 shift working and 300 working days would need the following equipments:

| Item   | Qty.         | Price (Rs.)     |
|--|--------------|-----------------|
| Fruit Pulper- 50 Kgs. Capacity                   | 1            | 70,000          |
| Steam jacketed Kettles- 60 Ltrs. Capacity        | 2            | 40,000          |
| Tray Drier with 48 Trays                         | 1            | 90,000          |
| Homogeniser                                      | 1            | 65,000          |
| Baby Boiler- 100 Ltrs.capacity                   | 1            | 75,000          |
| Weighing scale, wrapping and sealing machine etc | --           | 60,000          |
|  | <b>Total</b> | <b>4,00,000</b> |

## 5.3 Miscellaneous Assets

Some other assets like furniture and fixtures, packing tables, ladles, storage racks, toffee cutters etc. would cost Rs.0.80 lacs.

## 5.4 Utilities

Total power requirement would be 20 HP whereas coal or LDO will be required for boiler. Per day water requirement will be 3500 ltrs.

## 5.5 Raw and Packing Materials

The most critical material would be fresh and matured fruits like banana, mango, guava, papaya etc. Uttaranchal grows many fruits and procuring around 13-14 tons of fruits every month should not be a problem. Other materials like milk powder, sugar, glucose, hydrogenated fat, flavours, colours shall be available from local market. Proper arrangements for packing materials like cellophane or tissue paper, plastic jars, labels, corrugated boxes, BOPP tape etc. shall have to be made.

## 6.0 MANPOWER REQUIREMENTS

| Particulars     | Nos. | Monthly Salary (Rs.) | Total Monthly Salary (Rs.) |
|-----------------|------|----------------------|----------------------------|
| Skilled Workers | 2    | 2,500                | 5,000                      |
| Helpers         | 8    | 1,250                | 10,000                     |
| Salesman        | 1    | 2,500                | 2,500                      |
|                 |      | <b>Total</b>         | <b>17,500</b>              |

## 7.0 TENTATIVE IMPLEMENTATION SCHEDULE

| Activity   | Period (in months) |
|--|--------------------|
| Application and sanction of loan                               | 2                  |
| Site selection and commencement of civil work                  | 1                  |
| Completion of civil work and placement of orders for machinery | 4                  |
| Erection, installation and trial runs                          | 1                  |

## 8.0 DETAILS OF THE PROPOSED PROJECT

### 8.1 Building

Total cost of building is estimated to be Rs. 2.75 lacs as explained earlier.

### 8.2 Machinery

Expenditure on machinery is estimated to be Rs. 4.00 lacs as explained earlier.

### 8.3 Miscellaneous Assets

A provision of Rs. 0.80 lacs is sufficient under this head as stated earlier.

### 8.4 Preliminary & Pre-operative Expenses

An amount of Rs. 1.00 lac would take care of pre-production expenses like registration, establishment, administrative and travelling charges, interest during implementation, trial runs etc.

### 8.5 Working Capital Requirements

At 60% capacity utilisation in the first year, the working capital needs would be as under:

(Rs. in lacs)

| Particulars                                      | Period  | Margin       | Total       | Bank        | Promoters   |
|--|---------|--------------|-------------|-------------|-------------|
| Stock of Raw and Packing Materials except fruits | ½ Month | 30%          | 0.85        | 0.60        | 0.25        |
| Stock of Finished Goods                          | ½ Month | 25%          | 1.20        | 0.90        | 0.30        |
| Receivables                                      | ½ Month | 25%          | 1.80        | 1.35        | 0.45        |
| Working Expenses                                 | 1 Month | 100%         | 0.50        | --          | 0.50        |
|  |         | <b>Total</b> | <b>4.35</b> | <b>2.85</b> | <b>1.50</b> |

**8.6 Cost of the Project & Means of Financing** (Rs. in lacs)

| <b>Item</b>   | <b>Amount</b> |
|---|---------------|
| Building  | 2.75          |
| Machinery   | 4.00          |
| Miscellaneous Assets                                  | 0.80          |
| P&P Expenses  | 1.00          |
| Contingencies @ 10% on Building and Plant & Machinery | 0.70          |
| Working Capital Margin                                | 1.50          |
| <b>Total</b>  | <b>10.75</b>  |
| <b>Means of Finance</b>                               |               |
| Promoters' Contribution                               | 3.25          |
| Term Loan from Bank/FI                                | 7.50          |
| <b>Total</b>  | <b>10.75</b>  |
| Debt Equity Ratio                                     | 2.31 : 1      |
| Promoters' Contribution                               | 30%           |

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

**9.0 PROFITABILITY CALCULATIONS**

**9.1 Production Capacity & Build-up**

As against the rated annual capacity of 200 tonnes, actual utilisation in the first year is assumed to be 60% and thereafter 75%.

**9.2 Sales Revenue at 100%**

Assuming selling price of Rs. 35,000/- per ton, annual sales at 100% would be Rs. 70.00 lacs.

**9.3 Raw and Packing Materials Required at 100%** (Rs. in lacs)

| <b>Product</b>  | <b>Qty. (Tonnes)</b> | <b>Price/Ton (Rs.)</b> | <b>Value</b> |
|---|----------------------|------------------------|--------------|
| Assorted Fruits                                       | 200                  | 10,000                 | 20.00        |
| Sugar   | 50                   | 18,000                 | 9.00         |
| Glucose, milk powder, hydrogenated fat, essence, etc. | --                   | --                     | 1.80         |
| Packing Materials @ Rs.4000/Ton                       | --                   | --                     | 8.00         |
|   |                      | <b>Total</b>           | <b>38.80</b> |

#### 9.4 Utilities

Annual cost of utilities at 100% would be Rs. 1.50 lacs towards power, water and coal or LDO.

#### 9.5 Selling Expenses

A provision of 22.5% of sales income each year is made towards transportation, selling commission, publicity, free sampling etc.

#### 9.6 Interest

Interest on working capital from bank is calculated @ 14% per annum whereas on term loan of Rs. 7.50 lacs, it is computed @ 12% per annum assuming repayment in 5 years including a moratorium period of 1 year.

#### 9.7 Depreciation

It is calculated on WDV @ 10% on building and 20% on machinery and miscellaneous assets.

### 10.0 PROJECTED PROFITABILITY

(Rs. in lacs)

| No.      | Particulars                                      | 1st Year                | 2nd Year     |
|----------|--|-------------------------|--------------|
| <b>A</b> | <b>Installed Capacity</b>                        | <b>-- 200 Tonnes --</b> |              |
|          | Capacity Utilisation                             | 60%                     | 75%          |
|          | Sales Realisation                                | 42.00                   | 52.50        |
| <b>B</b> | <b>Cost of Production</b>                        |                         |              |
|          | Raw and Packing Materials                        | 23.28                   | 29.10        |
|          | Utilities  | 0.90                    | 1.12         |
|          | Salaries   | 2.10                    | 2.50         |
|          | Stores and Spares                                | 0.60                    | 0.75         |
|          | Repairs & Maintenance                            | 0.72                    | 0.90         |
|          | Selling Expenses @ 22.5%                         | 9.45                    | 11.81        |
|          | Administrative Expenses                          | 0.72                    | 0.90         |
|          | <b>Total</b>                                     | <b>37.77</b>            | <b>47.08</b> |
| <b>C</b> | <b>Profit before Interest &amp; Depreciation</b> | <b>4.23</b>             | <b>5.42</b>  |
|          | Interest on Term Loan                            | 0.83                    | 0.67         |
|          | Interest on Working Capital                      | 0.40                    | 0.50         |
|          | Depreciation                                     | 1.24                    | 1.00         |
|          | Profit before Tax                                | 1.76                    | 3.25         |
|          | Income-tax @ 20%                                 | 0.35                    | 0.65         |
|          | Profit after Tax                                 | 1.41                    | 2.60         |
|          | Cash Accruals                                    | 2.65                    | 3.60         |
|          | Repayment of Term Loan                           | --                      | 1.75         |

## 11.0 BREAK-EVEN ANALYSIS

(Rs. in lacs)

| No  | Particulars                | Amount |       |
|-----|----------------------------|--------|-------|
| [A] | Sales                      |        | 52.50 |
| [B] | Variable Costs             |        |       |
|     | Raw and Packing Materials  | 29.10  |       |
|     | Utilities (70%)            | 0.78   |       |
|     | Salaries (70%)             | 1.75   |       |
|     | Stores & Spares            | 0.75   |       |
|     | Selling Expenses (70%)     | 8.27   |       |
|     | Admn Expenses (50%)        | 0.45   |       |
|     | Interest on WC             | 0.50   | 41.60 |
| [C] | Contribution [A] - [B]     |        | 10.90 |
| [D] | Fixed Cost                 |        | 6.65  |
| [E] | Break-Even Point [D] ÷ [C] |        | 61%   |

## 12.0 [A] LEVERAGES

### Financial Leverage

$$= \text{EBIT/EBT}$$

$$= 2.99 \div 1.76$$

$$= 1.70$$

### Operating Leverage

$$= \text{Contribution/EBT}$$

$$= 8.64 \div 1.76$$

$$= 4.91$$

### Degree of Total Leverage

$$= \text{FL/OL}$$

$$= 1.70 \div 4.91$$

$$= 0.35$$

**[B] Debt Service Coverage Ratio (DSCR)**

(Rs. in lacs)

| Particulars           | 1st Yr                  | 2nd Yr      | 3rd Yr      | 4th Yr      | 5th Yr      |
|-----------------------|-------------------------|-------------|-------------|-------------|-------------|
| Cash Accruals         | 2.65                    | 3.60        | 3.87        | 4.11        | 4.31        |
| Interest on TL        | 0.83                    | 0.67        | 0.46        | 0.25        | 0.14        |
| <b>Total [A]</b>      | <b>3.48</b>             | <b>4.27</b> | <b>4.33</b> | <b>4.36</b> | <b>4.45</b> |
| Interest on TL        | 0.83                    | 0.67        | 0.46        | 0.25        | 0.14        |
| Repayment of TL       | --                      | 1.90        | 1.90        | 1.90        | 1.90        |
| <b>Total [B]</b>      | <b>0.83</b>             | <b>2.57</b> | <b>2.36</b> | <b>2.15</b> | <b>1.94</b> |
| <b>DSCR [A] ÷ [B]</b> | <b>4.19</b>             | <b>1.66</b> | <b>1.85</b> | <b>2.11</b> | <b>2.38</b> |
| <b>Average DSCR</b>   | ----- <b>2.43</b> ----- |             |             |             |             |

**[C] Internal Rate of Return (IRR)**

Cost of the project is Rs. 10.75 lacs.

(Rs. in lacs)

| Year | Cash Accruals | 16%          | 18%          | 20%          | 24%          |
|------|---------------|--------------|--------------|--------------|--------------|
| 1    | 2.65          | 2.28         | 2.24         | 2.21         | 2.14         |
| 2    | 3.60          | 2.67         | 2.58         | 2.50         | 2.34         |
| 3    | 3.87          | 2.48         | 2.36         | 2.24         | 2.03         |
| 4    | 4.11          | 2.27         | 2.12         | 1.98         | 1.74         |
| 5    | 4.31          | 2.05         | 1.88         | 1.73         | 1.47         |
| 6    | 4.56          | 1.87         | 1.69         | 1.53         | 1.25         |
|      | <b>23.10</b>  | <b>13.62</b> | <b>12.87</b> | <b>12.19</b> | <b>10.97</b> |

The IRR is around 25%.

**Some of the machinery suppliers are**

- 1) B. Sen Berry & Co, 65/11, Rohatak Road, Karol Baugh, New Delhi 110 005
- 2) Gardners Corporation, 158, Golf Links, New Delhi 110 001
- 3) S.P. Engg. Works, PB No. 218, Kanpur
- 4) Dhiman Systems (India) Ltd. , Kapurthala Road, Nakodar-144040.  
Tel No. 220707-222707, Fax: 221007