

# APPLE PRESERVE & CHUTNEY



## 1.0 INTRODUCTION

Fruits are available only for a limited period during season and hence they need to be preserved for consumption during off-season. They can be preserved in the form of syrup, juice, cordial, squash, chutney, jam and so on. Apples are available for around 6-7 months and if they are preserved in the form of chutney or preserve, then they can be consumed round the year. Availability of good quality apples at competitive rates is crucial. During off-season, same set up can be utilised for other fruits.

## 2.0 PRODUCT

### 2.1 Applications

Preserve or chutney are table enrichers and are consumed round the year all over the country. Table enrichers have a special place in the Indian diet.

### 2.2 Compliance and Quality Standards

Compliances under the FPO and PFA Act are mandatory.

## 3.0 MARKET POTENTIAL

### 3.1 Demand and Supply

Fruit preserves and chutneys are popular items in India and are consumed round the year. They are used to increase the palatability of food. There are many individual being and bulk consumers like households, caterers, restaurants, hostels and clubs and other eateries. The supply side is mostly dominated by small units but off-late some established brands have entered the market.

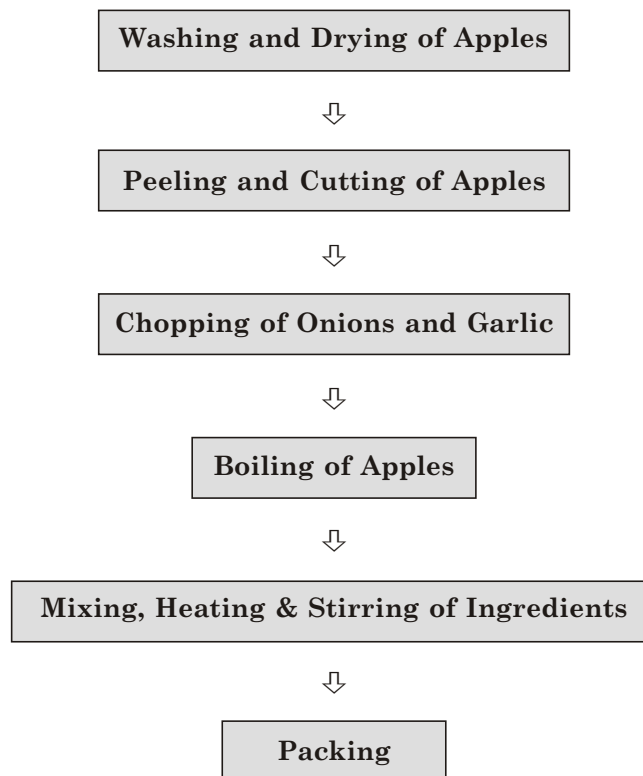
### 3.2 Marketing Strategy

The market is scattered in urban and semi-urban areas and there has to be an elaborate distribution network. Packing has to be attractive and middlemen must be paid lucrative commission.

## 4.0 MANUFACTURING PROCESS

### Chutney

Good quality apples are washed and cleaned before peeling them. Then they are cut into small pieces. Simultaneously onions and garlic are also cut into small pieces. Then apple pieces are boiled in water and are allowed to soften. Then, other ingredients except sugar and vinegar are mixed with pieces of apples and the mixture is stirred and heated. Subsequently sugar and vinegar are added and heating and stirring is continued till mixture thickens. Finally, chutney is packed in dry glass bottles. A typical process flow chart is as under



### Preserve

Good quality apples are washed and peeled and then they are dipped in common salt solution containing 20 gms. of salt in 4 ltrs. of water. Simultaneously, heat some water and when it is about to boil, add peeled apples in it. When apples become soft, they are punctured all over the surface with the help of steel forks to ensure uniform penetration of sugar syrup. Then apples and sugar are placed in alternate layer in pans. Gradually, sugar syrup is formed in the pans. On the second day, some sugar is added in this mixture and it is boiled for around 6-7 minutes. On the third day, some more sugar is added and the mixture is cooked for about 8-10 minutes. Finally citric acid is added and after cooling, apple preserve is packed in dry jars or bottles.

## 5.0 CAPITAL INPUTS

### 5.1 Land & Building

A plot of land of around 150 sq.mtrs. with built up area of 75 sq.mtrs. alongwith fruit washing area shall be adequate. Land may cost Rs. 45000/- whereas cost of construction would be around Rs. 2.00 lacs.

### 5.2 Machinery

Rated production capacity of 30 tonnes of preserve and 30 tonnes of chutney would require following set up:

(Rs. in lacs)

Particulars	Qty	Amount
Coal-fired Furnaces	4	0.60
50 Ltrs. Cap. Pressure Cooker	1	0.15
Jar Washing Machine	1	0.20
PP Cap Sealer	1	0.10
1 Kg. Cap. Grinder	1	0.07
SS Pans of 10 Kgs. Cap.	6	0.30
SS Knives, Peelers, forks, utensils etc.	--	0.10
<b>Total</b>		<b>1.52</b>

### 5.3 Miscellaneous Assets

Other assets like furniture & fixtures, working tables, plastic crates, storage racks, weighing scales etc. would need around Rs.60,000/-.

### 5.4 Utilities

Power requirement shall be 5 HP whereas coal of around 20 tonnes shall be required during the season. Daily water requirement shall be about 1500 ltrs.

### 5.5 Raw and Packing Materials

The all important material shall be good quality delicious apples for which proper arrangements shall have to be made. Sugar shall also be required in large quantity. Other materials like onions, garlic, ginger, salt, chillies, vinegar, citric acid etc. shall be available easily. 500 ml. capacity glass bottles/jars, corrugated boxes, lables and BOPP tape shall be the packing materials.

## 6.0 MANPOWER REQUIREMENTS

Particulars	No	Monthly Salary (Rs.)	Total Monthly Salary (Rs.)
Skilled Workers	2	2,500	5,000
Helpers	4	1,250	5,000
Salesman	1	2,500	2,500
		<b>Total</b>	<b>12,500</b>

## 7.0 PROJECT IMPLEMENTATION

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 Land and Building

(Rs. in lacs)

Particulars	Area (Sq.Mtrs)	Cost
Land	150	0.45
Building	75	2.00

### 8.2 Machinery

The total cost of machinery is estimated to be Rs. 1.52 lacs as explained earlier.

### 8.3 Miscellaneous Assets

An amount of Rs. 60,000/- has been provided under this head as explained before.

### 8.4 Preliminary and Pre-Operative Expenses

A provision of Rs. 75,000/- would take care of various expenses under this head.

### 8.5 Working Capital Requirement

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

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Raw and Packing Materials (except apples)	½ Month	30%	0.45	0.32	0.13
Stock of Finished Goods	½ Month	25%	0.60	0.45	0.15
Receivables	1 Month	25%	1.70	1.28	0.42
Working Expenses	1 Month	100%	0.30	--	0.30
		<b>Total</b>	<b>3.05</b>	<b>2.05</b>	<b>1.00</b>

## 8.6 Cost of the Project and Means of Financing:

(Rs. in lacs)

Items	Amount
Land and Buildings	2.45
Machinery	1.52
Miscellaneous Assets	0.60
Preliminary and Pre-operative Expenses	0.75
Contingencies @ 10% on land and building and machinery	0.40
Working Capital Margin	1.00
<b>Total</b>	<b>6.72</b>
<b>Means of Finance</b>	
Promoter's Contribution	1.82
Term Loan from Bank/FI	4.90
<b>Total</b>	<b>6.72</b>
Debt Equity Ratio	2.69 : 1
Promoters' Contribution	27%

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 and Build-up

The rated capacity of 60 tonnes is considered only for 8 months. Actual utilisation in the first year is assumed to be 60% and thereafter it is pegged down to 75%.

### 9.2 Sales Revenue at 100%

(Rs. in lacs)

Product	Qty. (Tonnes)	Selling Price (Rs.)	Value
Chutney (500 gms packing)	30	40,000/ Ton	12.00
Preserve (500 gms packing)	30	75,000/ Ton	22.50
		<b>Total</b>	<b>34.50</b>

### 9.3 Raw and Packing Materials Required at 100%

(Rs. in lacs)

Item	Qty.	Rate (Rs.)	Value
Apples	38 Tonnes	15000/ Ton	5.70
Sugar	15 Tonnes	20000/ Ton	3.00
Onions and Garlic	--	--	0.50
Ginger & Chillies	--	--	0.60
Vinegar, Salt, Preservatives, etc.	--	--	1.00
Packing Material @ Rs.8,000/Ton	--	--	4.80
		<b>Total</b>	<b>15.60</b>

### 9.4 Utilities

Total expenditure under this head at 100% utilisation during the season is estimated to be Rs. 1.50 lacs.

### 9.5 Selling Expenses

A provision of 20% of sales income every year would take care of expenses like transportation, selling commission, publicity, free sampling etc.

### 9.6 Interest

Interest on term loan of Rs. 4.90 lacs is computed @ 12% per annum assuming complete repayment in 3.5 years including a moratorium period of 6 months and on working capital from bank, it is computed @ 14% per annum.

### 9.7 Depreciation

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

## 10.0 PROJECTED PROFITABILITY

(Rs. in lacs)

No	Particulars	1st Year	2nd Year
<b>A</b>	<b>Installed Capacity</b>	<b>— 60 Tonnes —</b>	
	Capacity Utilisation	60%	75%
	Sales Income	20.70	25.90
<b>B.</b>	<b>Cost of Production</b>		
	Raw and Packing Materials	9.36	11.70
	Utilities	0.90	1.12
	Salaries	1.50	1.85
	Stores and Spares	0.30	0.42
	Repairs and Maintenance	0.24	0.36
	Adm. Expenses	1.00	1.25
	Selling Expenses @ 20%	4.14	5.18
	<b>Total</b>	<b>17.44</b>	<b>21.88</b>
<b>C.</b>	<b>Profit Before Interest &amp; Depreciation</b>	<b>3.26</b>	<b>4.02</b>
	Interest on Term Loan	0.52	0.30
	Interest on Working Capital	0.29	0.38
	Depreciation	0.56	0.47
	Profit before Tax	1.89	2.87
	Income Tax @ 20%	0.39	0.57
	Profit after Tax	1.50	2.30
	Cash Accrual	2.06	2.77
	Repayment of Term Loan	0.80	1.60

## 11.0 BREAK-EVEN POINT ANALYSIS

(Rs. in lacs)

No.	Particulars	Amount	
<b>A</b>	<b>Sales</b>		<b>25.90</b>
<b>B</b>	<b>Variable Cost</b>		
	Raw and Packing Materials	11.70	
	Utilities (70%)	0.78	
	Salaries (70%)	1.30	
	Repairs and Maintenance	0.36	
	Selling Expenses (70%)	3.63	
	Administrative Expenses (50%)	0.63	
	Interest on working capital	0.38	<b>18.78</b>
<b>C</b>	<b>Contribution (A-B)</b>		<b>7.12</b>
<b>D.</b>	<b>Fixed Cost</b>		<b>4.25</b>
<b>E.</b>	<b>Break-Even Point (D ÷ C)</b>		<b>60%</b>

## 12.0 [A] LEVERAGES

### Financial leverage

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

$$= 4.49 \div 2.87$$

$$= 1.56$$

### Operating Leverage

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

$$= 7.12 \div 2.87$$

$$= 2.48$$

### Degree of Total Leverage

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

$$= 1.56 \div 2.48$$

$$= 0.63$$

## [B] Debt Service Coverage Ratio

(Rs. in lacs)

Particulars	1st Yr	2nd Yr	3rd Yr	4th Yr
Cash Accruals	2.06	2.77	2.97	3.04
Interest on Term Loan	0.52	0.30	0.19	0.10
<b>Total (A)</b>	<b>2.58</b>	<b>3.07</b>	<b>3.16</b>	<b>3.14</b>
Interest on Term Loan	0.52	0.30	0.19	0.10
Repayment of Term Loan	0.80	1.60	1.60	0.90
<b>Total (B)</b>	<b>1.32</b>	<b>1.90</b>	<b>1.79</b>	<b>1.00</b>
<b>DSCR (A) ÷ (B)</b>	<b>1.95</b>	<b>1.62</b>	<b>1.77</b>	<b>3.14</b>
<b>Average</b>	----- <b>2.12</b> -----			

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

Cost of the project is Rs. 6.72 lacs

(Rs. in lacs)

Year	Cash Accruals	24%	28%	32%
1	2.06	1.66	1.61	1.56
2	2.77	1.80	1.69	1.59
3	2.97	1.56	1.42	1.29
4	3.04	1.29	1.13	1.00
5	3.17	1.08	0.92	0.79
	<b>14.01</b>	<b>7.39</b>	<b>6.77</b>	<b>6.23</b>

The IRR is around 28%.

### Some of the machinery suppliers are

1. D K Barry & Co Pvt Ltd., 11/35, West Punjabi Bagh, New Delhi 110 026
2. Delight Engg. Works, Lane No 8, Aslatpura, Moradabad 244 001,  
Tel. No.: 2498398-2491687, Fax: 2494378
3. Lakhanpal Food Processing Machinery, 36/6, Balkashwar Road, Agra 282 004  
Tel. No.: 2540726, Fax: 2540789
4. SS Engineering, B-25, Khanpur Extension, New Delhi 110 062,  
Tel. No.: 26081475, 9810217935