

FRUIT CANDY AND PRESERVE

QUALITY AND STANDARDS	:	As per FPO specifications
PRODUCTION CAPACITY	:	120 tpa

1.0 PRODUCT AND ITS APPLICATIONS

Murabba (preserve) and candy are traditional Indian food products which are also described in Ayurvedic and Unani texts. Murabba is a fruit or vegetable preserved in heavy sugar syrup (e.g. amla or green mango). When syrup is drained off and murabba is dry, it is called candy (e.g. petha).

Generally, apple, amla, green papaya, green mango, myrobalan, baheda, pear, cherry etc. are used for murabba making. Ginger and petha are used for making candy. Fruits with pronounced flavour such as pineapple, peach, cherry, peels of orange and grape fruit are suitable for making candies. Slightly unripe fruits should be used because fully ripe and over ripe fruits develop jam like consistency in the syruring process.

Product usage:

- As sweets e.g. petha, cherry, carrot etc.
- In bakery and confectionery items e.g. breads, cakes, buns and hard boiled candies and sweetmeats etc.
- In ice cream and fruit salad, tutti fruity, etc.
- As mouth freshner e.g. ginger candy.



2.0 MARKET POTENTIAL

Candied fruits and vegetables notably petha, tutti fruity, citrus peels candied ginger are quite popular. Similarly murabba from apple, amla, myrobalan, beal, carrot, mango, karonda are manufactured in a big way. A number of small scale units manufacture these items and find a ready market at a profitable price. As the consumption of bakery goods is on the increase, the demand for tutti fruity can also be expected to rise at the same pace. Ginger candy and ginger preserve can find a good market outside India also.

3.0 BASIS AND PRESUMPTIONS

- The unit proposes to work at least 300 days per annum on single shift basis.
- The unit can achieve its full capacity utilization during the 3rd year of operation.
- The wages for skilled workers is taken as per prevailing rates in this type of industry.
- Interest rate for total capital investment is calculated @ 12% per annum.
- The entrepreneur is expected to raise 20-25% of the capital as margin money.

- f) The unit proposes to construct own building as per F.P.O. specifications.
- g) Costs of machinery and equipment are based on average prices enquired from machinery manufacturers.

4.0 IMPLEMENTATION SCHEDULE

Project implementation will take a period of 8 months. Break-up of the activities and relative time for each activity is shown below:

❖ Scheme preparation and approval	:	01 month
❖ SSI provisional registration	:	1-2 months
❖ Sanction of financial supports etc.	:	2-5 months
❖ Installation of machinery and power connection	:	6-8 months
❖ Trial run and production	:	01 month

5.0 TECHNICAL ASPECTS

5.1 Location

A unit for manufacturing preserve and candied fruits/vegetables needs to be located close to fruit producing or distribution centres. Apart from this, the local demand for the finished product, availability of cheap labour, existing infrastructure facilities, etc. are to be taken into account for selecting the site.

5.2 Process of Manufacture

The fruits and vegetables are peeled and edible portion taken out. These are cured as per requirement of individual commodity. The general process is to slowly impregnate the prepared fruits and vegetables with sugar by the process of cooking and storage (holding) till the consistency is raised to minimum 68° brix (total soluble solids). Preserves are packed along with the syrup. Candied fruits are made, after draining the syrup and drying the pieces from the preserves. Candied fruits are further coated with thin transparent layer of sugar to make glazed crystallised fruits. Preserves are packed in glass bottles and plastic jars. Candy fruits is packed in polyethylene pouches or in tins (lined with polyethylene). The manufactures have to take a licence under FPO (Government of India).

5.3 Quality Control and Standards: As per FPO requirements

6.0 POLLUTION CONTROL

There is no major pollution problem associated with this industry except for disposal of waste which should be managed appropriately. The entrepreneurs are advised to take “No Objection Certificate” from the State Pollution Control Board.

7.0 ENERGY CONSERVATION

The fuel for the steam generation in the boiler is coal or LDO depending upon the type of boiler. Proper care should be taken while utilising the fuel for the steam production. There should be no leakage of steam in the pipe lines and adequate insulation should be provided.

8.0 PRODUCTION CAPACITY

Quantity	:	120 tpa
Value	:	Rs. 64.8 lakh
Installed capacity	:	500 kg/day
Working days	:	300/annum
Product mix	:	Tutti fruity Petha candy Carrot preserve Amla preserve Ginger candy Bael preserve Apple preserve
Manpower	:	16
Utilities		
Motive Power	:	10 kW
Water	:	7 kL/day
Coal/LD oil	:	250 kg/60 L/day

9.0 FINANCIAL ASPECTS

9.1 Fixed Capital

9.1.1 Land & Building

Amount (Rs. lakh)

Land 300 sq.mtr	:	0.30
Built up Area 200 sq. mtr. @ 2500	:	5.00

Total cost of Land and Building	:	5.30

9.1.2 Machinery and Equipment

Description		Amount (Rs. lakh)
Fruit cubing machine, SS jacketed kettles, sugar grinder, tray drier, improved preserve manufacturing unit, boiler, weighing scales, preparation tables, cutting knives, material handling equipment, washing tanks.	:	4.60

Erection & electrification @10% cost of machinery & equipment	:	0.46
Office furniture & fixtures	:	0.54
Total	:	<u>5.60</u>

9.1.3 Pre-operative Expenses

Consultancy fee, project report, deposits with electricity department etc.	:	0.60
--	---	------

9.1.4 Total Fixed Capital : 11.50 (9.1.1+9.1.2+9.1.3)

9.2 Recurring expenses per annum

9.2.1 Personnel

Designation	No.	Salary Per month	Amount (Rs.lakh)
Factory Manager	1	6000	0.72
Accountant, Supervisor , Storekeeper Mechanic	3	4000	1.44
Skilled workers	2.	2000	0.48
Unskilled workers	10	1500	1.80
			4.44
Perquisites @15%			0.66
Total :	16		<u>5.10</u>

9.2.2 Raw Material including packaging materials

Particulars	Qty.(MT)	Rate	Amount (Rs. lakh)
Fruits/Vegetables	100	10/kg	10.00
Sugar	80	17/kg	13.60
Citric acid, lime, salt,chemicals	LS		2.70
Pet Jars cap. 1kg	1,20,000 no.	12 each	14.40
Total:			<u>40.70</u>

9.2.3 Utilities	Amount (Rs. lakh)
Power	1.25
Water	0.02
Coal	1.33
	<hr/>
Total:	2.60
 9.2.4 Other Contingent Expenses	 Amount (Rs. lakh)
Repairs and maintenance @10%	0.56
Consumables & spares	0.17
Transport & Travel	0.18
Publicity	0.05
Postage & stationery	0.08
Telephone	0.10
Insurance	0.06
	<hr/>
Total:	1.20
 9.2.5 Total Recurring Expenditure	 Amount (Rs. lakh)
(9.2.1+9.2.2+9.2.3+9.2.4)	49.60
 9.3 Working Capital	 12.40
Recurring Expenditure for 3 months	
 9.4 Total Capital Investment	 Amount (Rs. lakh)
Fixed capital (Refer 9.1.4)	11.50
Working capital (Refer 9.3)	12.40
	<hr/>
Total:	23.90

10.0 FINANCIAL ANALYSIS

10.1 Cost of Production (per annum)	Amount (Rs. lakh)
Recurring expenses (Refer 9.2.5)	49.60
Depreciation on building @5%	01.00
Depreciation on machinery @10%	00.60
Depreciation on furniture @20%	00.13
Interest on Capital Investment @12%	02.87
	<hr/>
Total:	54.20

10.2 Sale Proceeds (Turnover) per year

Item	Qty. (MT)	Rate per MT	Amount (Rs.lakh)
Candy and preserve packed In 500g glass jar	100	30	60.00

10.3 Net Profit per year

= Sales – Cost of production
= 60.00 – 54.20
= Rs. 5.80 lakh

10.4 Net Profit Ratio

= $\frac{\text{Net profit} \times 100}{\text{Sales}}$
= $\frac{5.80 \times 100}{60.00}$
= 9.67%

10.5 Rate of Return on Investment

= $\frac{\text{Net profit} \times 100}{\text{Capital Investment}}$
= $\frac{5.80 \times 100}{48.66}$
= 11.92%

10.6 Annual Fixed Cost

	Amount (Rs. Lakh)
All depreciation	1.04
Interest	2.87
40% of salary, wages, utility, contingency	8.84
Insurance	0.06
Total:	12.81

10.7 Break even Point

= $\frac{\text{Annual Fixed Cost} \times 100}{\text{Annual Fixed Cost} + \text{Profit}}$
= $\frac{12.81 \times 100}{12.81 + 5.80}$
= 68.83%