SQUASH, SYRUP, JUICE & RTS BEVERAGES

QUALITY AND STANDARDS : As per FPO specifications

PRODUCTION CAPACITY : Fresh fruit 400 tpa or 2 tpd
Juice : 50 MT
RTS : 350 MT
Squash / Cordial 160 MT
Fruit syrup 15 MT
Crush 15 MT

1.0 PRODUCT AND ITS APPLICATIONS

Fruit based beverages are relished when served chilled, particularly during summers. These are delicious as well as nutritious containing the goodness of fresh fruit. Squash, syrup, cordial, crush are diluted with water before use. The juice is used as such. Ready-to-serve beverages are made out of juice, sugar and water and consumed as such. The fruits e.g. pineapple,orange, lime, banana, litchi, passion fruit, other local fruits can be used. The final products are : pure juice, ready-to-serve beverages packed in 200 mL glass bottles; squashes/syrups packed in 500 mL/700 mL/ 1L glass or PET bottles.

Herbal roots, flowers, extracts can also be used to make syrups and squashes. Products made out of ginger-citrus, rhododendron, rose petals, sorrel leaves also have a good demand.

2.0 MARKET POTENTIAL

India is second largest producer of fruits (45 million tonnes) and vegetables (90 million tonnes). The wastage of fresh produce is estimated at 25-30% due to transport and marketing problems and lack of processing facililties. Less than 2% of fresh produce is processed. Of late the infrastructural facilities have greatly improved and Govt. of India has laid high priority to food processing sector. Setting up of Food Parks, attractive incentives to the entrepreneurs, phenomenal strides in export and domestic demands have encouraged a large number of new start ups resulting in food processing industry to become a sun rise industry in the country.

3.0 BASIS AND PRESUMPTIONS

a) The unit proposes to work at least 300 days per annum on single shift basis.
b) The unit can achieve its full capacity utilization during the 2nd year of operation.
c) The wages for skilled workers is taken as per prevailing rates in this type of industry.
d) Interest rate for total capital investment is calculated @ 12% per annum.
e) 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

The unit can be set up in Food Park, industrial sheds, fruit growing area or near the market. Availability of raw material, bottles, skilled labour, potable water, road connectivity must be taken into consideration.

5.2 Process of Manufacture

Fully ripe sound fruits are selected and washed in water. Juice from citrus fruits is extracted using a rosing machine. Pineapple, litchi are peeled, decored, milled and passed through a juice press. Passion fruits are cut, boiled and juice extracted through the pulper. The juice from banana is extracted by pulping the peeled fruit and liquefaction using pectolytic enzyme. The juices are filtered, bottled and pasteurized. For making squash and syrups, sugar-acid syrup is blended with fruit pulp/juice in specific proportion, mixed with preservative and bottled. For making ready-to-serve beverages, the juice or pulp is mixed with acidified sugar syrup, mixed, packed in 200 mL glass bottles and pasteurised.

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	:	400 tpa (2 tpd)
	Juice :	2.50 lakh bottles of 200 mL
	RTS :	17.50 lakh bottles of 200 mL
	Squash :	1.60 lakh bottles of 1L

		Syrup : 15,000 bottles of 1L Crush : 15,000 bottles of 1L
Installed capacity	:	1300 kg/day
Optimum capacity utilization	:	70%
Working days	:	200/annum
Manpower	:	40

Utilities

Motive Power	:	40 kW
Water	:	25 kL/day
Coal/LD oil	:	500 kg/120 L/day

9.0 FINANCIAL ASPECTS

9.1 Fixed Capital

9.1.1 Land & Building

		Amount (Rs. lakh)
Land 1000 sq.m.	:	1.30
Built up Area 400 sq. m..	:	13.70

Total cost of Land and Building	:	15.00

9.1.2 Machinery and Equipment

Description		Amount (Rs. lakh)
Pulper, fruit mill, rosing machine, filter press, hydraulic press, bottle filling machine, crown corking machine, PP cap sealing machine, mixing tank, boiler, bottle washing machine, platform balance, table balance, washing tank, Flash pasteuriser, pasteurization tank, labelling machine, ss steam jacketted kettles, aluminum pans, working tables, laboratory equipments, knives, buckets etc.	:	22.00
Erection & electrification @10% cost of machinery & equipment	:	2.20
Office furniture & fixtures	:	0.80
Total :		--------
		25.00

9.1.3 Pre-operative Expenses

Consultancy fee, project report, deposits with electricity department etc.	:	1.00

9.1.4 **Total Fixed Capital** : **41.00**
(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	10000	1.20
Supervisor Production/Sales	3	6000	2.16
Office Assistant, Storekeeper	4	5000	2.40
Technician, Lab Assistant	3	4500	1.62
Skilled workers	6	2500	1.80
Unskilled workers(8 months)	23	2000	3.68
			12.86
Perquisites @15%			1.94

Total :	40		14.80

9.2.2 Raw Material including packaging materials

Particulars	**Qty.(MT)**	**Rate/MT**	**Amount (Rs. lakh)**
Fresh fruit	400	5000	20.00
Sugar	330	16000	52.80
Citric acid	3.5	1,50,000	5.25
Preservative,colour, essence	1.5	-LS-	7.50
Pet bottles, cap. 1L	1.90 lakh	4 each	7.60
Glass bottles, cap. 200 mL	13 lakh	4 each	52.00
Crown corks	14 lakh	0.50 each	7.00
Labels	15 lakh	0.50 each	7.50
Packing material	-LS-		12.85
Detergent, etc.	-LS-		0.50

Total:			173.00

9.2.3 Utilities **Amount (Rs. lakh)**

Power	2.50
Water	0.20
Coal	4.00

Total:	6.70

9.2.4	Other Contingent Expenses	Amount (Rs. lakh)
	Repairs and maintenance@10%	2.80
	Consumables & spares	1.60
	Transport & Travel	1.10
	Publicity	1.00
	Postage & stationery	0.60
	Telephone	0.27
	Licence fee & miscellaneous	0.26
	Insurance	0.40

	Total:	8.03

9.2.5	Total Recurring Expenditure	Amount (Rs. lakh)
	(9.2.1+9.2.2+9.2.3+9.2.4)	202.53

9.3	Working Capital	50.65
	Recurring Expenditure for 3 months	

9.4	Total Capital Investment	Amount (Rs. lakh)
	Fixed capital (Refer 9.1.4)	41.00
	Working capital (Refer 9.3)	50.65

	Total:	91.65

10.0 FINANCIAL ANALYSIS

10.1	Cost of Production (per annum)	Amount (Rs. lakh)
	Recurring expenses (Refer 9.2.5)	202.53
	Depreciation on building @5%	0.69
	Depreciation on machinery @10%	2.42
	Depreciation on furniture @20%	0.16
	Interest on Capital Investment @12%	11.00

	Total:	216.80

10.2 Sale Proceeds (Turnover) per year

Item	Qty. (MT)	Rate per doz.	Amount (Rs.lakh)
Fruit juice in 200 mL glass bottles	2,50,000	126	26.25
Ready-to-serve beverage in 200 mL glass bottles	17,50,000	78	113.75
Squash in 1L Pet bottle	1,60,000	660	88.00

	Syrup in 1L Pet bottle	15,000	820	10.25
	Crush in 1L Pet bottle	15,000	700	8.75

				247.00

10.3 Net Profit per year

= Sales - Cost of production

= 247.00 - 216.80

= Rs. 30.20 lakh

10.4 Net Profit Ratio

$$= \frac{\text{Net profit X 100}}{\text{Sales}}$$

$$= \frac{30.20 \text{ X } 100}{247}$$

= 12.2%

10.5 Rate of Return on Investment

$$= \frac{\text{Net profit X 100}}{\text{Capital Investment}}$$

$$= \frac{30.20 \text{ X } 100}{91.65}$$

= 33%

10.6 Annual Fixed Cost

	Amount (Rs. Lakh)
All depreciation	3.27
Interest	11.00
40% of salary, wages, utility, contingency	11.83
Insurance	00.40
	———
Total:	26.50

10.7 Break even Point

$$= \frac{\text{Annual Fixed Cost X 100}}{\text{Annual Fixed Cost + Profit}}$$

$$= \frac{26.50 \text{ X } 100}{26.50 + 30.20}$$

= 46.7%

11.0 ADDRESSES OF MACHINERY AND EQUIPMENT SUPPLIERS

Batliboi Engineers (Bangalore) Pvt. Ltd.
99/2&3, N.R.Road
Bangalore – 560 002

B.Sen Barry & Co.
65/11, New Rohtak Road
New Delhi – 110 005

Gardners Corporation
158 Golf Links,
New Delhi – 110 003

Narene Tulaman Manufacturers Pvt. Ltd.
Balanagar
Hyderabad – 500 037

Raylon Metal Works
Kondivitta Lane
J.B.Nagar, Andheri
Mumbai – 400 059

Bajaj Maschinen Pvt. Ltd.
7/20-7/27 Jai Laxmi Industrial Estate, Site IV
Sahibabad Industrial Area - 201010
Dist.Ghaziabad, UP

SSP (Pvt) Ltd.
13th Milestone, Mathura Road
Faridabad – 121003, Haryana

Narangs Corporation
P-25/90 Connaught Place
New Delhi – 110001

Nirmal Services
2254/23 Rajguru Road, Chuna Mandi
Paharganj
New Delhi – 110055

Ganson Ltd.
645 Anna Salai
Chennai – 600006

Grovers Pvt. Ltd.
223, Kaliandas Udyog Bhavan
Prabhadevi
Mumbai – 400 025

Macneill and Magor Ltd.
4, Mangoe Lane
Kolkata – 700 001

12.0 OTHER SPECIAL FEATURES

A careful selection of sound fruits is necessary. The facilities can also be utilised to manufacture squashes, jams, jellies, marmalades etc. for fuller utilisation of capacity.