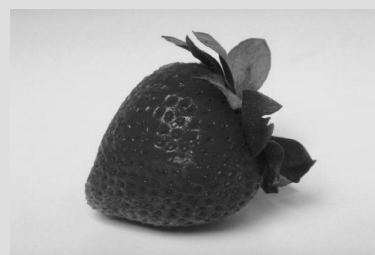


STRAWBERRY SYRUP



1.0 INTRODUCTION

Strawberries are grown in many areas of Maharashtra. Satara district is not an exception. As a matter of fact, many strawberry products from Panchgani and Mahabaleshwar region have become very popular and brands like Mapro are well established. Strawberries were not grown in large quantities few years back but with gradual increase in demand for table varieties as well as from processing units, number of farmers have now taken up this activity. Some progressive farmers should undertake strawberry processing as a measure of forward integration. With assured supply of good quality strawberries, quality of products would be very good and the competitive edge would also go up. This product can also be produced in HP & J&K.

2.0 PRODUCT

Fruits are available only during 4-5 months every year and they are perishable. But with the advent of preservation techniques, it is possible to enjoy them even during off-season. There are many methods like dehydration, preparation of pulp or squash or syrup and so on. This note considers manufacture of strawberry syrup from pulp.

2.1 Compliances under the FPO and PFA Act is mandatory.

3.0 Market Potential

Strawberries are liked by many but till 8-10 years back, they were not easily available and hence were very costly. But with the modernisation of agriculture and horticulture, many crops and fruits are grown at many new locations. Strawberry is one such fruit. Strawberry processing is taking roots and processed products are becoming popular outside the state as

well. Nearby tourist centres like Mahabaleshwar, Lonavala and Goa have helped this cause. The manufacturing process is not very complicated and if some strawberry growers start this project then the chances of success are more. Competition is slowly increasing and any new entrant has to offer quality product at competitive rates, offer handsome returns to middlemen and latching packaging to lure buyers. Placement of product is also very important as it would attract customers and also provide visibility.

4.0 MANUFACTURING PROCESS

The process of manufacture is very well standardised and easy to implement. Fully grown and matured strawberries are washed, cleaned and graded and then peeled. Subsequently, juice is extracted and filtered to remove seeds, fibres etc. Juice is then processed and sterilised and some preservatives are added to it and stored in pulp form for use during off-season. Mixture of pulp, sugar syrup and preservatives along with water is thoroughly mixed and syrup is packed in plastic bottles. Weight and process loss is on an average 35% to 40%.

5.0 CAPITAL INPUTS

5.1 Land and Building

A plot of land of around 200 sq.mtrs. with built-up area of 100 sq.mtrs. would be sufficient. Land may cost Rs. 75,000/- whereas cost of construction could be Rs. 2.50 lacs.

5.2 Machinery

Strawberries would be available only for around 6 months and hence the factory is expected to run for around 150 days. It is, therefore, suggested to install processing capacity of 30 tonnes per month which would need following equipments:

Item	Qty.	Price (Rs.)
Fruit Washing Tanks	2	10,000
Juice Extractors	2	1,10,000
Steam-jacketed Kettle	1	20,000
Stirrer	1	15,000
Baby Boiler	1	60,000
Bottle Washing, Filling and Capping Machine	1	70,000
Testing Equipments, Weighing scales etc.	--	35,000
	Total	3,20,000

5.3 Miscellaneous Assets

Some other support assets like furniture and fixtures, packing tables, SS utensils, fruit crates etc. shall be required for which a provision of Rs. 60,000/- is made.

5.4 Utilities

Power requirement shall be 50 HP including operations of mini boiler whereas per day water requirement for process and potable and sanitation purposes will be about 1200 ltrs.

5.5 Raw and Packing Materials

The most critical raw material will be strawberries. They are grown in ample quantity in Satara and Nasik districts with many large farms. Hence, the location has to be appropriately selected. Prior supply arrangements with some farmers would ensure smooth supply. Other materials like sugar, citric acid and permitted food colours and flavours will also be available locally. Packing materials like food grade plastic bottles of 700 ml. capacity, labels, corrugated boxes etc. shall be required for which adequate arrangements must be made.

6.0 MANPOWER REQUIREMENTS

Particulars	Nos.	Monthly Salary (Rs.)	Total Monthly Salary (Rs.)
Machine Operators	2	2,500	5,000
Semi-skilled Workers	2	1,750	3,500
Helpers	4	1,250	5,000
Salesman	1	2,500	2,500
		Total	16,000

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 Land and Building

Particulars	Area (Sq.Mtrs)	Cost (Rs.)
Land	200	75,000
Building	100	2,50,000
	Total	3,25,000

8.2 Machinery

The total cost of machinery is expected to be Rs. 3.20 lacs as explained earlier.

8.3 Miscellaneous Assets

A provision of Rs.60,000/- is adequate for some other assets as discussed earlier.

8.4 Preliminary & Pre-operative Expenses

Any industrial project entails many pre-production expenses like registration, establishment and administrative charges, travelling, interest during implementation, trial runs etc. An amount of Rs. 60,000/- is provided towards them.

8.5 Working Capital Requirements

Capacity utilisation in the first year is assumed to be 60% in the first year which would require following working funds:

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Packing Materials and Sugar	1 Month	30%	1.00	0.70	0.30
Stock of Finished Goods	4 Months	25%	7.50	5.60	1.90
Receivables	½ Month	25%	1.60	1.20	0.40
Other Expenses	1 Month	100%	0.60	--	0.60
		Total	10.70	7.50	3.20

8.6 Cost of the Project & Means of Financing

(Rs. in lacs)

Item	Amount
Land and Building	3.25
Machinery	3.20
Miscellaneous Assets	0.60
P&P Expenses	0.60
Contingencies @ 10% on Land and Building & Plant & Machinery	0.65
Working Capital Margin	3.20
Total	11.50
Means of Finance	
Promoters' Contribution	3.50
Term Loan from Bank/FI	8.00
Total	11.50
Debt Equity Ratio	2.29 : 1
Promoters' Contribution	31%

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 processing capacity of 30 tonnes per month, the plant is expected to run at 60% in the first season and 75% thereafter.

9.2 Sales Revenue at 100%

The selling price (MRP) of some established brands is in the range of Rs.90 to 100 per ltr. To penetrate the market, the selling price assumed is Rs. 60 per ltr. Thus, sale of 108 kilo litres (with 60% yield) would result in income of Rs.64.80 lacs.

9.3 Raw & Packing Materials Required at 100%

(Rs. in lacs)

Product	Qty. (Tonnes)	Price/Ton (Rs.)	Value
Strawberries	180	12,000	21.60
Sugar	-	-	4.25
Citric Acid and Other Preservatives, Flavours	--	--	1.00
Packing Materials @ Rs.7000/Kl.	--	--	7.56
		Total	34.41

9.4 Utilities

Monthly cost of utilities at 100% activity level is envisaged to be Rs.8,000/-.

9.5 Selling Expenses

Apart from very competitive selling price, the retailers need to be given lucrative commission and adequate publicity materials. Product publicity by way of hoardings, free sampling is also contemplated. Hence, a provision of 25% of sales revenue is made.

9.6 Interest

Interest on term loan of Rs. 8.00 lacs is calculated @ 12% per annum assuming complete repayment in 4 years including a moratorium period of 1 year. Interest on working capital loan from bank is computed @ 14% every year.

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
A	Installed Capacity	-- 180 Tonnes --	
	Capacity Utilisation	60%	75%
	Sales Realisation	38.90	48.60
B	Cost of Production		
	Raw and Packing Materials	20.64	25.81
	Utilities	0.34	0.43
	Salaries	1.32	1.75
	Stores and Spares	0.24	0.30
	Repairs & Maintenance	0.30	0.45
	Selling Expenses @ 25%	9.72	12.15
	Administrative Expenses	0.48	0.66
	Total	33.04	41.55
C	Profit before Interest & Depreciation	5.86	7.05
	Interest on Term Loan	0.88	0.66
	Interest on Working Capital	1.05	1.31
	Depreciation	1.01	0.83
	Profit before Tax	2.92	4.25
	Income-tax @ 20%	0.58	0.85
	Profit after Tax	2.34	3.40
	Cash Accruals	3.35	4.23
	Repayment of Term Loan	--	2.40

11.0 BREAK-EVEN ANALYSIS

(Rs. in lacs)

No	Particulars	Amount	
[A]	Sales		38.90
[B]	Variable Costs		
	Raw and Packing Materials	20.64	
	Utilities (70%)	0.24	
	Salaries (70%)	0.92	
	Stores & Spares	0.24	
	Selling Expenses (70%)	6.80	
	Admn Expenses (50%)	0.24	
	Interest on WC	1.05	30.13
[C]	Contribution [A] - [B]		8.77
[D]	Fixed Cost		5.35
[E]	Break-Even Point [D] ÷ [C]		61%

12.0 [A] LEVERAGES

Financial Leverage

= EBIT/EBT

= 4.85 ÷ 2.92

= 1.66

Operating Leverage

= Contribution/EBT

= 8.77 ÷ 2.92

= 3.00

Degree of Total Leverage

= FL/OL

= 1.66 ÷ 3.00

= 0.55

[B] Debt Service Coverage Ratio (DSCR)

(Rs. in lacs)

Particulars	1st Yr	2nd Yr	3rd Yr	4th Yr
Cash Accruals	3.35	4.23	4.55	4.94
Interest on TL	0.88	0.66	0.37	0.19
Total [A]	4.23	4.89	4.92	5.13
Interest on TL	0.88	0.66	0.37	0.19
Repayment of TL	--	2.70	2.70	2.60
Total [B]	0.88	3.36	3.07	2.79
DSCR [A] ÷ [B]	4.81	1.45	1.63	1.84
Average DSCR	----- 2.43 -----			

[C] Internal Rate of Return (IRR)

Cost of the project is Rs. 11.50 lacs.

(Rs. in lacs)

Year	Cash Accruals	16%	18%	20%
1	3.35	2.89	2.84	2.79
2	4.23	3.14	3.04	2.94
3	4.55	2.92	2.77	2.63
4	4.94	2.73	2.55	2.38
	17.07	11.68	11.20	10.74

The IRR is around 17%.

Some of the machinery suppliers are

1. T. Alimohammad & Co, MJ Phule Market, Mumbai 400 003
2. Sujata Enterprise, Laxmi Rd., Pune 411 030
3. Apurva Engg. Works, Borivali, Mumbai 400 098
4. Raylons Metal Works, PB No. 17426, JB Nagar, Andheri(E), Mumbai-400059