

FRUIT SQUASH



1.0 INTRODUCTION

Fruits are an important source of energy for human-beings. But their availability is seasonal and they are perishable. Hence, they need to be processed and preserved which also results in value-addition. India produces many varieties of citrus fruits and the project can be set up in states like Maharashtra, Uttarakhand, HP and the North-Eastern states. The North East states grow in large quantities many fruits like pineapple, orange, lemon, mango etc. Hence fruit squash making activity on a small scale is suggested.

Squashes are sweetened juice of fruits containing some pulp. They contain at least 25% (by volume) of fruit juice and are consumed after dilution. Squashes also contain added flavours. Since preservatives are added in adequate quantities, the shelf life of squashes is fairly longer.

This project profile is for setting up of Fruit Squash manufacturing unit with installed processing capacity of 50 tonnes per annum of fresh fruits. It is proposed to make squashes from different fruits and hence average prices

have been assumed for raw materials and finished product.

2.0 MARKET POTENTIAL

Fruits are popular amongst all age groups but their availability is limited during season only which lasts for a period of 3-4 months for most of the fruits. Hence, squashes are becoming popular. They are sold at many places like provision and departmental stores, cold drink centres, restaurants, etc. and since they have a longer shelf life, consumers prefer them. Squashes of some conventional and selected fruits are available in the market but it is worth trying some fruits grown in the North East as their tastes are palatable to local populace.

3.0 PROCESS DETAILS

Good quality ripe fruits are washed, peeled and cleaned. Then juice is extracted from fruits and it is filtered to remove seeds and fibres. Then juice is processed and sterilised and then syrup of sugar, preservatives etc. are added and this mixture is stirred till uniform solution is formed. In the final process, bottling and packing is done.

4.0 COST OF THE PROJECT

The estimated project cost is given below.

Particulars	Amount (Rs lacs)
Land & Site Development	-
Building & Civil Works	5.83
Machinery & Equipment	6.56
Misc. Fixed Assets	2.00
Preliminary & Pre-operative Expenses	0.87
Contingencies & Escalation @ 3%	0.43
Working Capital	1.10
TOTAL	16.79

4.1 Land & Site Development: No cost has been considered for land & site development. It is assumed that the project will be set up in own land.

4.2 Building & Civil Works: Details of building & civil works are given below.

Particulars	Area (Sqm)	Rate (Rs)	Amount (Rs)
Work shed (Open shed, CGI roof, Concrete floor)	80	3500	280000
Store cum office (Brick wall, CGI roof, Concrete floor)	50	5000	250000
Sub-total			530000
Add: Electrification, water supply, etc @ 10%			53000
TOTAL			583000
Say (Rs. in lacs)			5.83

4.3 Machinery & Equipment: Details of machinery & equipment are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Fruit Washing Tanks	3	20000	60000
Juice Extractors	2	90000	180000
Steam Jacketed Kettles	2	45000	90000
Stirrer	1	20000	20000
Baby Boiler	1	80000	80000
Bottle Washing and Filling Machine	1	90000	90000
Weighing scales, testing equipment, etc	LS	LS	50000
Sub-total			570000
Add: Transportation, taxes, etc @ 15%			85500
TOTAL			655500
Say (Rs. in lacs)			6.56

4.4 Misc. Fixed Assets: Details of miscellaneous fixed assets are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Power connection (30 HP)	1	100000	100000
Water supply system (STW boring, 3 HP pump set, storage, pipes & fittings)	1	80000	80000
Furniture & fixtures	LS	LS	10000
Miscellaneous items	LS	LS	10000
TOTAL			200000
Say (Rs. in lacs)			2.00

4.5 Preliminary & Pre-operative Expenses: Details of preliminary & pre-operative expenses are given below.

Particulars	Amount (Rs lacs)
Travelling expenses	0.30
Professional & other fees	0.20
Interest during implementation	0.27
Miscellaneous expenses	0.10
TOTAL	0.87

4.6 Contingencies & Escalation: Contingencies & escalation has been assumed at 3% of the cost of building & civil works, machinery & equipment and miscellaneous fixed assets.

4.7 Working Capital: Details of working capital are given below.

	Period (Days)	Amount (Rs lacs)		
		Year 1	Year 2	Year 3
Fruits	7	0.06	0.07	0.09
Bottles	30	0.41	0.51	0.62
Power	30	0.06	0.08	0.09
Salary	30	0.62	0.62	0.63
Finished Goods	15	0.77	0.89	1.00
Receivables	15	0.82	1.03	1.23
Total		2.74	3.20	3.66
Working Capital Margin in Year 1 (40%)	1.10			

5.0 MEANS OF FINANCE

The means of finance for the project is estimated as below.

Particulars	Percent	Amount (Rs lacs)
EQUITY		
A. Equity from Promoters	40%	6.72
B. Subsidy from Central/State Govt.	-	
DEBT		
Term Loan from Banks/FIs	60%	10.07
TOTAL	100%	16.79

6.0 PROFITABILITY STATEMENT

(Rs. in lacs)

Particulars	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
A. INCOME							
Installed capacity (Nos)	250000	250000	250000	250000	250000	250000	250000
Capacity utilisation	40%	50%	60%	60%	60%	60%	60%
Production at CU	100000	125000	150000	150000	150000	150000	150000
Price (Rs/bottle)	20	20	20	20	20	20	20
Income from sales (Rs)	20.00	25.00	30.00	30.00	30.00	30.00	30.00
B. OPERATING EXPENSES							
Raw Materials & Consumables	10.00	12.50	15.00	15.00	15.00	15.00	15.00
Power	0.75	0.94	1.13	1.13	1.13	1.13	1.13
Salary	7.56	7.60	7.64	7.67	7.71	7.75	7.79
Repair & Maintenance	0.14	0.16	0.17	0.19	0.21	0.23	0.25
Selling Expenses	0.20	0.25	0.30	0.30	0.30	0.30	0.30
Miscellaneous Expenses	0.10	0.13	0.15	0.15	0.15	0.15	0.15
Total Operating Expenses	18.76	21.57	24.39	24.44	24.50	24.56	24.62
Less: Working expenses capitalised	1.10	0.00	0.00	0.00	0.00	0.00	0.00
Operating profit	2.34	3.43	5.61	5.56	5.50	5.44	5.38
C. FINANCIAL EXPENSES							
Depreciation	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Interest on Term Loan	0.80	0.71	0.59	0.46	0.33	0.20	0.07
Interest on Working Capital Loan	0.26	0.31	0.35	0.00	0.00	0.00	0.00
Net Profit	0.87	2.05	4.36	4.43	4.50	4.57	4.64
Net cash accruals	1.54	2.71	5.03	5.10	5.17	5.24	5.31
Principal Repayment	0.40	1.61	1.61	1.61	1.61	1.61	1.61

6.1 Production Capacity: Total production of fruit squash at installed capacity is estimated as below.

Rated processing capacity/annum (tonnes)	50
Yield of fruit juice	75%
Production of fruit juice (tonnes)	37.5
Percent of fruit juice in fruit squash	30%
Production of fruit squash (tonnes)	125
Capacity of packing 600 ml bottle (kg)	0.50
Total Nos. squash bottles per annum at installed capacity (Nos)	250000

6.2 Raw materials & Consumables: Expenses on raw materials & consumables at installed capacity is estimated as below.

Particulars	Unit	Quantity	Rate (Rs)	Amount (Rs)
Fresh fruits	Tonnes	50	15000	750000
Bottles	Nos	250000	5	1250000
			Sub-total	2000000
Add: Additives, etc @ 25%				500000
Expenses on raw materials & consumables at installed capacity (Rs)				2500000

6.3 Power: Expenses on power at installed capacity is estimated as below.

Connected load (kw)	22
Avg. load factor	70%
Hrs/day	8
Days/annum	300
Annual power consumption (kwh)	37598
Rate per unit (Rs)	5.00
Expenses on power at installed capacity (Rs)	187992

6.4 Salary: Expenses on salary in the 1st year is estimated as given below. It is assumed that salary expenses will increase @ 0.5% every subsequent year.

Particulars of Employee	Numbers	Salary/Month (Rs)	Cost/annum (Rs)
Manager	1	10000	120000
Machine operators/skilled workers	4	7000	336000
Sales Staff	2	5000	120000
Helpers	5	3000	180000
Expenses on salary in the 1st year (Rs)			756000

6.5 Repair & Maintenance: Expenses on repair & maintenance in the 1st year is estimated as given below. It is assumed that expenses on repair & maintenance will increase @ 10% every subsequent year.

Particulars	Cost (Rs)	Rate	Amount (Rs lacs)
Building & Civil Works	5.83	1%	0.06
Machinery & Equipment	6.56	1%	0.07
Misc. Fixed Assets	2.00	1%	0.02
Expenses on repair & maintenance in year 1			0.14

6.6 Selling Expenses: Selling expenses has been assumed at 1% of sales.**6.7 Miscellaneous Expenses:** Miscellaneous expenses have been assumed at 0.5% of sales.**6.8 Depreciation:** Depreciation has been calculated by straight line method. The details of calculation are given below.

Description	Cost (Rs)	Rate	Amount/annum (Rs lacs)
Building & Civil Works	5.83	3.34%	0.19
Machinery & Equipment	6.56	5.28%	0.35
Misc. Fixed Assets	2.00	6.33%	0.13
TOTAL			0.67

6.9 Interest on Term Loan & Principal Repayment: Interest rate has been assumed at 8%. Duration of Loan repayment has been considered for a period of 7 years including moratorium period of 9 months with equal monthly instalments. The details of calculation are given below.

(Rs in lacs)

Month	Year	1	2	3	4	5	6	7
Month 1	Opening balance	10.07	9.67	8.06	6.45	4.84	3.22	1.61
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest (8%)	0.07	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	10.07	9.54	7.92	6.31	4.70	3.09	1.48
Month 2	Opening balance	10.07	9.54	7.92	6.31	4.70	3.09	1.48
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	10.07	9.40	7.79	6.18	4.57	2.95	1.34
Month 3	Opening balance	10.07	9.40	7.79	6.18	4.57	2.95	1.34
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	10.07	9.27	7.66	6.04	4.43	2.82	1.21
Month 4	Opening balance	10.07	9.27	7.66	6.04	4.43	2.82	1.21
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	10.07	9.13	7.52	5.91	4.30	2.69	1.07
Month 5	Opening balance	10.07	9.13	7.52	5.91	4.30	2.69	1.07
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	10.07	9.00	7.39	5.78	4.16	2.55	0.94
Month 6	Opening balance	10.07	9.00	7.39	5.78	4.16	2.55	0.94
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	10.07	8.86	7.25	5.64	4.03	2.42	0.81
Month 7	Opening balance	10.07	8.86	7.25	5.64	4.03	2.42	0.81
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	10.07	8.73	7.12	5.51	3.90	2.28	0.67
Month 8	Opening balance	10.07	8.73	7.12	5.51	3.90	2.28	0.67
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.07	0.06	0.05	0.04	0.03	0.02	0.00
	Closing balance	10.07	8.60	6.98	5.37	3.76	2.15	0.54
Month 9	Opening balance	10.07	8.60	6.98	5.37	3.76	2.15	0.54
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.07	0.06	0.05	0.04	0.03	0.01	0.00
	Closing balance	10.07	8.46	6.85	5.24	3.63	2.01	0.40
Month 10	Opening balance	10.07	8.46	6.85	5.24	3.63	2.01	0.40
	Repayment	0.13	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.07	0.06	0.05	0.03	0.02	0.01	0.00
	Closing balance	9.94	8.33	6.72	5.10	3.49	1.88	0.27
Month 11	Opening balance	9.94	8.33	6.72	5.10	3.49	1.88	0.27
	Repayment	0.13	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.07	0.06	0.04	0.03	0.02	0.01	0.00
	Closing balance	9.80	8.19	6.58	4.97	3.36	1.75	0.13
Month 12	Opening balance	9.80	8.19	6.58	4.97	3.36	1.75	0.13
	Repayment	0.13	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.07	0.05	0.04	0.03	0.02	0.01	0.00
	Closing balance	9.67	8.06	6.45	4.84	3.22	1.61	0.00
Principal Repayment		0.40	1.61	1.61	1.61	1.61	1.61	1.61
Interest		0.80	0.71	0.59	0.46	0.33	0.20	0.07

6.10 Interest on Working Capital Loan: Interest rate on working capital loan has been assumed at 16%. The details of calculation are given below.

(Rs. in lacs)			
Particulars	Year 1	Year 2	Year 3
Total current assets	2.74	3.20	3.66
Bank Loan (60%)	1.65	1.92	2.19
Interest @ 16%	0.26	0.31	0.35

7.0 DEBT SERVICE COVERAGE RATIO (DSCR)

(Rs. in lacs)								
Year	1	2	3	4	5	6	7	Total
Profit After Tax (Net Profit)	0.87	2.05	4.36	4.43	4.50	4.57	4.64	
Depreciation	0.67	0.67	0.67	0.67	0.67	0.67	0.67	
Interest	0.80	0.71	0.59	0.46	0.33	0.20	0.07	
Total	2.34	3.43	5.61	5.56	5.50	5.44	5.38	33.26
Interest	0.80	0.71	0.59	0.46	0.33	0.20	0.07	
Loan repayment	0.40	1.61	1.61	1.61	1.61	1.61	1.61	
Total	1.21	2.33	2.20	2.07	1.94	1.81	1.68	13.23
DSCR	1.94	1.47	2.55	2.69	2.84	3.00	3.20	

Average DSCR = 2.51

8.0 BREAK EVEN POINT (BEP)

(Rs. in lacs)			
Year	1	2	3
A. Net sales	20.00	25.00	30.00
B. Variable cost			
Raw Materials & Consumables	10.00	12.50	15.00
Power	0.75	0.94	1.13
Selling Expenses	0.20	0.25	0.30
Miscellaneous Expenses	0.10	0.13	0.15
Interest on Working Capital	0.26	0.31	0.35
Total variable cost	11.32	14.12	16.93
C. Contribution (A-B)	8.68	10.88	13.07
D. Fixed & Semi-fixed Costs			
Salary	7.56	7.60	7.64
Repair & maintenance	0.14	0.16	0.17
Interest on Term Loan	0.80	0.71	0.59
Depreciation	0.67	0.67	0.67
Total fixed cost	9.17	9.14	9.06
E. BREAK EVEN POINT	105.64%	84.01%	69.34%
F. BEP at operating capacity	42.26%	42.00%	41.60%
G. Cash BEP	39.18%	38.94%	38.54%

9.0 INTERNAL RATE OF RETURN (IRR)

(Rs. in lacs)

Year	0	1	2	3	4	5	6	7
CASH OUTFLOW								
Capital Expenditure	14.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Working Capital	0.00	2.74	0.46	0.46	0.00	0.00	0.00	0.00
Total (A)	14.82	2.74	0.46	0.46	0.00	0.00	0.00	0.00
CASH INFLOW								
Profit After Tax		0.87	2.05	4.36	4.43	4.50	4.57	4.64
Add: Depreciation		0.67	0.67	0.67	0.67	0.67	0.67	0.67
Add: Interest		0.80	0.71	0.59	0.46	0.33	0.20	0.07
Add: Salvage Value								
Total (B)	0.00	2.34	3.43	5.61	5.56	5.50	5.44	5.38
NET FLOW (B-A)	-14.82	-0.40	2.97	5.16	5.56	5.50	5.44	5.38

IRR = 16%

MACHINERY SUPPLIERS

- (a) Raman Industries
W. Z. - 40/3, Sant Garh, Street No. 30, Tilak Nagar, Delhi - 110018, Delhi, India
- (b) Wholesale Mart
S-562, 1st Floor, Main Road, School Block, Shakarpur, New Delhi - 110092, Delhi, India
- (c) Madaan International
21 B Swasthya Vihar Appartment, Preet Vihar, Delhi - 110 092, Delhi, India