

TAPIOCA CHIPS



1.0 INTRODUCTION

The growing demand for snacks has led to the introduction of new edible food items like tapioca chips. It has a rightful place in the household menu all over the country. This tasty delicacy makes a good titbit as a snack food item, not only in households but also in parties, gatherings, picnics etc. It is nutritious and very easy to make and thus has become a popular snack item within no time. It is generally made on regional basis and nearby markets are catered to. There are no complications in making tapioca chips and the capital cost of the project is also manageable.

Tapioca chips and tapioca grains are two major snack food items. Tapioca chips have gained popularity throughout India and there are many small-scale manufacturers primarily catering to the local demand. Demand for this product is scattered throughout the country and the project can be set up in the vicinity of the market.

This project profile is for setting up of a Tapioca Chips manufacturing unit with installed processing capacity of 200 tonnes per annum of tapioca tubers.

4.0 COST OF THE PROJECT

The estimated project cost is given below.

Particulars	Amount (Rs lacs)
Land & Site Development	-
Building & Civil Works	4.51
Machinery & Equipment	5.92
Misc. Fixed Assets	2.00
Preliminary & Pre-operative Expenses	0.83
Contingencies & Escalation @ 3%	0.37
Working Capital Margin	2.26
TOTAL	15.89

2.0 MARKET POTENTIAL

Convenience food is the demand of the day in the progressive modern world. Indians are fond of many table varieties since ages and tapioca chips are one such item. It is being used in bulk in the households of urban, semi-urban and rural areas. With changing food habits, it is no more considered as a table variety and has assumed acceptance as a snack food item. Tapioca chips are available in different shapes, colours and tastes primarily based on the imagination of the promoters as well as judgement about the consumer preferences. Keeping in mind, the local preferences about tastes and palatability, changes can be made by adding some spices or red chilly.

3.0 PROCESS DETAILS

Tapioca chips are manufactured from fresh roots, using semi automatic or fully automatic machineries. It involves following operations:

- Selection of tubers and washing;
- Peeling/ Trimming of tubers;
- Slicing, washing and sorting;
- De-watering;
- Frying, cooling and packing.

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)	60	3500	210000
Store cum office (Brick wall, CGI roof, Concrete floor)	40	5000	200000
		Sub-total	410000
Add: Electrification, water supply, etc @ 10%			41000
		TOTAL	451000
		Say (Rs. in lacs)	4.51

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

Particulars	Qty	Rate (Rs)	Amount (Rs)
Tapioca Washing Machine	1	72000	72000
Tapioca Slicer	1	55000	55000
Blancher	1	120000	120000
De-waterer	1	55000	55000
Thermostat controlled frying pans	2	3000	6000
Sealing Machine	1	165000	165000
Miscellaneous items	LS	LS	20000
		Sub-total	493000
Add: Transportation, taxes, etc @ 20%			98600
		TOTAL	591600
		Say (Rs. in lacs)	5.92

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

Particulars	Qty	Rate (Rs)	Amount (Rs)
Power connection (25 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	0.23
Miscellaneous expenses	0.10
	TOTAL
	0.83

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

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

Particulars	Period (Days)	Amount (Rs lacs)		
		Year 1	Year 2	Year 3
Raw Materials & Consumables	30	0.62	0.74	0.86
Power	30	0.06	0.08	0.09
Salary	30	0.40	0.41	0.41
Finished Goods	15	0.56	0.63	0.70
Receivables	15	0.62	0.74	0.86
Total		2.26	2.59	2.93
Working Capital Margin in Year 1 (100%)	2.26			

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%	6.35
B. Subsidy from Central/ State Govt.	-	
DEBT		
Term Loan from Banks/ FIs	60%	9.53
TOTAL	100%	15.89

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 (MT)	50	50	50	50	50	50	50
Capacity utilisation	50%	60%	70%	70%	70%	70%	70%
Production at capacity utilisation	25	30	35	35	35	35	35
Price (Rs/tonne)	60000	60000	60000	60000	60000	60000	60000
Income from sales	15.00	18.00	21.00	21.00	21.00	21.00	21.00
B. OPERATING EXPENSES							
Raw Materials & Consumables	7.50	9.00	10.50	10.50	10.50	10.50	10.50
Power	0.78	0.94	1.10	1.10	1.10	1.10	1.10
Salary	4.92	4.94	4.97	4.99	5.02	5.04	5.07
Repair & Maintenance	0.12	0.15	0.18	0.21	0.26	0.31	0.37
Selling Expenses	0.15	0.18	0.21	0.21	0.21	0.21	0.21
Miscellaneous Expenses	0.08	0.09	0.11	0.11	0.11	0.11	0.11
Total Operating Expenses	13.55	15.30	17.06	17.12	17.19	17.27	17.35
Less: Working expenses capitalised	2.26	0.00	0.00	0.00	0.00	0.00	0.00
Operating profit	3.71	2.70	3.94	3.88	3.81	3.73	3.65
C. FINANCIAL EXPENSES							
Depreciation	0.59	0.59	0.59	0.59	0.59	0.59	0.59
Interest on Term Loan	0.76	0.68	0.55	0.43	0.31	0.19	0.07
Net Profit	2.36	1.43	2.80	2.86	2.91	2.96	2.99
Net cash accruals	2.95	2.02	3.39	3.45	3.50	3.55	3.58
Principal Repayment	0.38	1.53	1.53	1.53	1.53	1.53	1.53

6.1 Production capacity: Total production of Tapioca Chips at installed capacity is estimated as below.

Rated processing capacity/ annum (tonnes of raw materials)	200
Yield of chips from tapioca tubers	25%
Production of chips per annum at installed capacity (tonnes)	50

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

Particulars	Unit	Quantity	Rate (Rs)	Amount (Rs)
Tapioca tubers	Tonnes	200	6000	1200000
Add: Additives, packing materials, etc @ 25%				300000
Expenses on raw materials & consumables at installed capacity (Rs)				1500000

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

Connected load (kw)	19
Avg. load factor	70%
Hrs/day	8
Days/annum	300
Annual power consumption (kwh)	31332
Rate per unit (Rs)	5.00
Expenses on power at installed capacity (Rs)	156660

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 Employees	Numbers	Salary/Month (Rs)	Cost/annum (Rs)
Manager	Self	-	-
Machine operators/ skilled workers	3	7000	252000
Salesperson	2	4000	96000
Casual labour	4	3000	144000
Expenses on salary in the 1st year (Rs)			492000

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 @ 20% every subsequent year.

(Rs. in lacs)

Particulars	Cost (Rs)	Rate	Amount (Rs)
Building & Civil Works	4.51	1%	0.05
Machinery & Equipment	5.92	1%	0.06
Misc. Fixed Assets	2.00	1%	0.02
Expenses on repair & maintenance in year 1			0.12

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	4.51	3.34%	0.15
Machinery & Equipment	5.92	5.28%	0.31
Misc. Fixed Assets	2.00	6.33%	0.13
TOTAL			0.59

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	9.53	9.15	7.63	6.10	4.58	3.05	1.53
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest (8%)	0.06	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	9.53	9.02	7.50	5.97	4.45	2.92	1.40
Month 2	Opening balance	9.53	9.02	7.50	5.97	4.45	2.92	1.40
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.06	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	9.53	8.90	7.37	5.85	4.32	2.80	1.27
Month 3	Opening balance	9.53	8.90	7.37	5.85	4.32	2.80	1.27
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.06	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	9.53	8.77	7.24	5.72	4.19	2.67	1.14
Month 4	Opening balance	9.53	8.77	7.24	5.72	4.19	2.67	1.14
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.06	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	9.53	8.64	7.12	5.59	4.07	2.54	1.02
Month 5	Opening balance	9.53	8.64	7.12	5.59	4.07	2.54	1.02
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.06	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	9.53	8.52	6.99	5.47	3.94	2.41	0.89
Month 6	Opening balance	9.53	8.52	6.99	5.47	3.94	2.41	0.89
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.06	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	9.53	8.39	6.86	5.34	3.81	2.29	0.76
Month 7	Opening balance	9.53	8.39	6.86	5.34	3.81	2.29	0.76
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13

	Interest	0.06	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	9.53	8.26	6.74	5.21	3.69	2.16	0.64
Month 8	Opening balance	9.53	8.26	6.74	5.21	3.69	2.16	0.64
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.06	0.06	0.04	0.03	0.02	0.01	0.00
	Closing balance	9.53	8.13	6.61	5.08	3.56	2.03	0.51
Month 9	Opening balance	9.53	8.13	6.61	5.08	3.56	2.03	0.51
	Repayment	0.00	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.06	0.05	0.04	0.03	0.02	0.01	0.00
	Closing balance	9.53	8.01	6.48	4.96	3.43	1.91	0.38
Month 10	Opening balance	9.53	8.01	6.48	4.96	3.43	1.91	0.38
	Repayment	0.13	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.06	0.05	0.04	0.03	0.02	0.01	0.00
	Closing balance	9.41	7.88	6.35	4.83	3.30	1.78	0.25
Month 11	Opening balance	9.41	7.88	6.35	4.83	3.30	1.78	0.25
	Repayment	0.13	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.06	0.05	0.04	0.03	0.02	0.01	0.00
	Closing balance	9.28	7.75	6.23	4.70	3.18	1.65	0.13
Month 12	Opening balance	9.28	7.75	6.23	4.70	3.18	1.65	0.13
	Repayment	0.13	0.13	0.13	0.13	0.13	0.13	0.13
	Interest	0.06	0.05	0.04	0.03	0.02	0.01	0.00
	Closing balance	9.15	7.63	6.10	4.58	3.05	1.53	0.00
Principal Repayment		0.38	1.53	1.53	1.53	1.53	1.53	1.53
Interest		0.76	0.68	0.55	0.43	0.31	0.19	0.07

7.0 DEBT SERVICE COVERAGE RATIO (DSCR)

(Rs. in lacs)

Year	1	2	3	4	5	6	7	Total
Profit After Tax (Net Profit)	2.36	1.43	2.80	2.86	2.91	2.96	2.99	
Depreciation	0.59	0.59	0.59	0.59	0.59	0.59	0.59	
Interest	0.76	0.68	0.55	0.43	0.31	0.19	0.07	
Total	3.71	2.70	3.94	3.88	3.81	3.73	3.65	25.42
Interest	0.76	0.68	0.55	0.43	0.31	0.19	0.07	
Loan repayment	0.38	1.53	1.53	1.53	1.53	1.53	1.53	
Total	1.14	2.20	2.08	1.96	1.84	1.71	1.59	12.52
DSCR	3.25	1.22	1.89	1.98	2.08	2.18	2.29	

Average DSCR = 2.03

8.0 BREAK EVEN POINT (BEP)

(Rs. in lacs)

Year	1	2	3
A. Net sales	15.00	18.00	21.00
B. Variable cost			
Raw Materials & Consumables	7.50	9.00	10.50
Power	0.78	0.94	1.10
Selling Expenses	0.15	0.18	0.21
Miscellaneous Expenses	0.08	0.09	0.11
Total variable cost	8.51	10.21	11.91
C. Contribution (A-B)	6.49	7.79	9.09
D. Fixed & Semi-fixed Costs			
Salary	4.92	4.94	4.97
Repair & maintenance	0.12	0.15	0.18
Interest on Term Loan	0.76	0.68	0.55
Depreciation	0.59	0.59	0.59

Total fixed cost	6.39	6.36	6.29
E. BREAK EVEN POINT	98.50%	81.64%	69.23%
F. BEP at operating capacity	49.25%	48.98%	48.46%
G. Cash BEP	44.71%	44.44%	43.92%

9.0 INTERNAL RATE OF RETURN (IRR)

(Rs. in lacs)

Year	0	1	2	3	4	5	6	7
CASH OUTFLOW								
Capital Expenditure	12.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Working Capital	0.00	2.26	0.33	0.33	0.00	0.00	0.00	0.00
Total (A)	12.80	2.26	0.33	0.33	0.00	0.00	0.00	0.00
CASH INFLOW								
Profit After Tax		2.36	1.43	2.80	2.86	2.91	2.96	2.99
Add: Depreciation		0.59	0.59	0.59	0.59	0.59	0.59	0.59
Add: Interest		0.76	0.68	0.55	0.43	0.31	0.19	0.07
Add: Salvage Value (10%)								1.28
Total (B)	0.00	3.71	2.70	3.94	3.88	3.81	3.73	4.93
NET FLOW (B-A)	-12.80	1.45	2.36	3.61	3.88	3.81	3.73	4.93

IRR = 15%

MACHINERY SUPPLIERS

- Thomas International
No. 306 Linghi Chetty Street, Chennai, India
- Labh Projects Pvt Ltd
4th Floor, Sarthik Square, Besides Info Tower, S. G. Road, Ahmedabad, India
- Ambica Engineering Works, Bangalore
No. 16 - A, 1st Main, Modi Hospital Road, West Of chord Road, 2nd Stage, Opposite To Bata showroom,
Near Vijaya Bank, Rajaji Nagar, Bengaluru - 560 086, Karnataka, India