

PROJECT PROFILE

ON

TAPIOCA CHIPS

Month & Year
Aug 2010

**PREPARED BY
TANSTIA-FNF SERVICE CENTRE
B-22, INDUSTRIAL ESTATE
CHENNAI-600032**

Supported by

Friedrich Naumann
STIFTUNG **FÜR DIE FREIHEIT**

TAPIOCA CHIPS

1. Introduction

Tapioca chips are gaining wide acceptance in numerous households as a tasty snack food. It is being consumed as an alternative to potato chips.

2. Market

The major market outlets are the “A” and “B” class outlets, departmental stores, super markets and self service counters. The product also has a good export potential. Although the product is conceptually new, its properties as a ready to eat snack food are known among housewives.

3. Packaging

The processed product is packed in laminated polyester-poly pouches. The product is packed in measures of 50 grams and 100 grams.

4. Production capacity

- The plant will be in operation for two shifts a day with each shift of 8 hours duration.
- The plant will operate to a capacity of a raw material (tuber) input of 250 kilograms per shift or 500 kilograms per day. The end product yield will be 135 kilograms of chips per day.
- The estimated production per day is therefore 135 kilograms.
- The total production per month will be 3.375 M.T while the annual production is estimated at 40.50 M.T
- The time period required for achieving full capacity utilization is one year.

5. Sales revenue

- The ex-factory selling price will be Rs. 200 per kilogram thereby yielding a sales revenue of Rs. 81.00 lakhs on full capacity utilization.

6. Production process outline.

The tapioca tuber is first washed thoroughly to remove any adhering dirt or sand. The skin is peeled in the peeling machine and the tuber is sliced with slice thickness ranging from 1.8 mm to 2.5 mm. The slices are dipped into a blanching tank to remove surface starches and prevent browning at the time of frying. The slices are subjected to centrifugal spinning in the spinner whereby excess moisture is removed. The slices are fried in medium hot oil to give golden brown chips. The excess oil from the chips is drained and the chips dusted with salt and spices in the coating pan before being packed. The product is flushed with nitrogen gas in the pouch so as to prevent development of rancidity.

7. Quality specifications

- The product shall conform to standards laid down under the Bureau of Indian Standards and the Prevention of Food Adulteration Act.
- Outer residual skin - not exceeding 10%
- Hydrocyanic acid - should be absent.
- Dirt and other suspended extraneous matter - should be absent.
- Moisture - 2% maximum
- Total ash - 0.4% maximum
- Acid insoluble ash - 0.1% maximum
- Free fatty acids of oil used - 0.1% maximum
- Peroxide value of oil used - nil

8. Pollution control measures

Not necessary as there are no pollutants or effluents.

9. Energy conservation measures

Common measures will do.

10. Land and construction cost for the proposed unit

The proposed unit is to be set up in a leased area. The total leased area is 2500 square feet vide details given below.

SI	Description	Sq. feet
1	Processing area	1400
2	Raw material store for tapioca	100
3	Oter ingredients store room	100
4	Finished goods store room	100
5	Packaging material store room	100
6	Laboratory	200
7	Office space	200
8	Machinery spares room	100
9	Toilets	100
10	Miscellaneous space	100
11	Total	2500

Lease rent – Rs. 6.00 per square foot

Total rent per month – Rs. 15000

Lease advance – Rs. 60000

11. Costing of machinery and equipment

SI	Description	Rs. lakhs
1	Washing machine	0.600
2	Peeling machine	0.400
3	Slicing machine	0.450
4	Rinsing and spinning machine	0.350
5	Batch fryer – 2 nos	1.000
6	Spice coating pan	1.600
7	Sealing machine with inert gas flushing system	2.500
9	Total	6.900
10	Laboratory equipment	0.600
11	Grand total machinery and equipment	7.500

12. Project cost

SI	Description	Rs. lakhs
1	Land	On lease
2	Civil works	On lease
3	Plant machinery	6.900
4	Laboratory equipment	0.600
5	Transport vehicle (Tata Ace)	3.760
6	Pollution control equipment	0.000
7	Energy conservation equipment	0.000
8	Cost of power connection	0.250
9	Cost of electrification	0.350
10	Erection and commissioning	0.630
11	Cost of machinery spares	0.200
12	Cost of office equipment	1.000
13	Deposits if any	0.500
14	Company formation expenses	0.100
15	Gestation period expenses	0.500
16	Sales tax registration expenses	0.100
17	Initial advertisement and publicity	5.000
18	Contingencies	0.250
19	Working capital margin money	2.410
20	Total	22.550

13. Working capital requirements per month

a. Salaries and wages

SI	Description	No of persons	Total salary / month (Rs. lakhs)
1	Production Supervisor (female)	1	0.150
2	Chemist (female)	2	0.100
3	Skilled workers (female)	2	0.120
4	Unskilled workers (female)	4	0.120
5	Sales staff	2	0.200
6	Administrative staff	1	0.100
7	Driver	1	0.060
8	Total	13	0.850

b. Raw material requirement per month

SI	Description	Qty (kgs)	Rate / kg (Rs)	Value (Rs. lakhs)
1	Tapioca Tuber	12500	8.00	1.000
2	Edible oil	1000	80.00	0.800
3	Salt	200	8.00	0.016
4	Spices	50	60.00	0.030
5	Total raw material	13750		1.846

c. Packaging material requirement per month

SI	Description	Qty	Rate / unit (Rs)	Value (Rs. lakhs)
1	Primary packaging material – metallized polyester – poly pouches	67500	2.00	1.350
2	Cartons and straps	1350 nos	40	0.540
3	Total			1.890

Total raw + packaging material = Rs. 3.736 lakhs

d. Utilities per month

SI	Description	Rs. lakhs
1	Power 1500 kwh @ Rs. 5.50 per unit	0.085
2	Water	0.050
3	Boiler fuel	0.000
4	Total utilities	0.135

e. Contingent expenses per month

SI	Description	Rs. lakhs
1	Rent for processing shed	0.150
2	Postage and stationery	0.010
3	Telephones, fax etc.	0.050
4	Consumable stores	0.020
5	Repairs and maintenance	0.044
6	Local transports, loading and unloading	0.100
7	Advertisement and publicity @ 5% of sales	0.380
8	Insurance	0.005
9	Sales expenses @ 1% of sales	0.068
10	Miscellaneous expenses @ 1% of sales	0.068
11	Trade incentives @ 2% of sales	0.136
12	Taxes @ 4%	0.272
13	Total contingent expenses	1.303

f. Total working capital requirement per month

SI	Description	Rs. lakhs
1	Salaries and wages	0.850
2	Raw material and packaging material	3.736
3	Utilities	0.135
4	Contingent expenses	1.303
5	Total	6.024

14. Means of finance

SI	Description	Rs. lakhs
1	Total Project Cost	22.550
2	Equity	7.441
3	Debt	15.109
4	Working capital margin money	2.410

15. Financial analysis

SI	Description	Rs. lakhs
1	Total recurring cost per year	72.288
2	Depreciation on land and building	0.000
3	Depreciation on machinery and vehicle	1.040
4	Depreciation on furnaces	0.000
5	Depreciation on moulds and fixtures	0.020
6	Depreciation on office equipment	0.100
7	Interest on long term loan @ 13.5%	2.040
8	Interest on short term borrowings@ 13.5%	0.487
9	Total cost of production	75.975

16. Turnover per year

SI	Item	Qty	Rate/unit (Rs)	Total Rs. lakhs
1	Tapioca chips	40,500 kgs	200	81.00

17. Viability analysis

SI	Description	Value
1	Net profit before income tax (Rs. lakhs)	5.025
2	Net profit ratio	6.3%
3	Internal rate of return	18.9%
4	Break even percentage	54%
5	Debt service coverage ratio	1.868

List of machinery suppliers for manufacture of Tapioca chips

1. Hari Om Industries; Dhebar Road South, Atika Industrial Area, Street No. 3, Near Jaydev Foundry, Rajkot 360002, Gujarat.; Tel: 0281 - 2363620; Fax: 0281 - 2371745.
2. Geeta Food Engineering, Plot No. C - 7 / 1, TTC Industrial Area, Pawana MIDC, Thane - Belapur Road, Behind Savita Chemicals, Navi Mumbai 400705. Maharashtra.; Tel: 022 - 56101973; Fax: 022 – 55906450
3. Agaram Industries, 126, Nelson Road, Aminjikarai, Chennai, 600029, ; Tel: 044-23741413; Fax: 044-23741529
4. Royal Scientific Industries, T.S.74A, SIDCO Industrial Estate, Ekkatuthangal, Chennai. 600097., Tel: 044-22254749
5. Heat and Control (S) Pvt. Ltd.,E-2, 3rd Avenue, Anna Nagar, East, Chennai. 600102., Tel: 044-26212943