

# TAMARIND POWDER



## 1.0 INTRODUCTION

Tamarind trees are grown in almost all parts of the country and India is a leading producer of tamarind fruits. Due to some peculiar food habits of the Indians, juice of tamarind fruits is used regularly in many food as well as snack preparations. Tamarind fruits are rarely used directly. Instead, they are soaked in water for some time and then juice is extracted manually. This process is not only clumsy but unhygienic as well. Hence, tamarind powder has become popular. It is available in compact form, very convenient to use and there is no need to bother about disposal of residue as is the case when dry tamarind is soaked in water.

## 2.0 PRODUCT

### 2.1 Applications

Tamarind fruits are used in all parts of the country round the year. Tamarind powder is a hygienically prepared item and is a substitute for home-made tamarind paste or liquid. Powder is easily soluble and exact quantity is used. This project can be set up in many states of the country but this note considers Maharashtra as the preferred location.

### 2.2 Availability of know-how and compliances

CFTRI, Mysore, has successfully developed the technical know-how. Compliance under the PFA Act is mandatory.

## 3.0 MARKET POTENTIAL

Dried tamarind fruits are an integral part of Indian cuisine and is extensively used in many food and snack preparations. It is a mass consumption item used round the year. Apart from individual households, it is used in large quantities in restaurants, dhabas, road-side eateries, hotels and canteens and many such places. But the conventional method of soaking dry

tamarind in water and then squeezing it by hand is unhygienic and inconvenient. Hence tamarind concentrate and powder have become acceptable. Tamarind in powder form is easily soluble, is in compact form and very convenient to transport. With increasing health awareness and improved standards of living, tamarind powder has good market potential. There is a distinct possibility of exports to countries where Indians are settled like Gulf and African countries, the USA & UK, Australia etc.

#### 4.0 MANUFACTURING PROCESS

It is easy and well-established. Dried tamarind fruits are cleaned and after soaking them in water they are boiled in steam jacketed kettle for about 40-45 minutes. Then pulp is extracted in pulper and dried in drum type drier and on cooling, the final product is packed. Recovery or yield is around 45%.

#### 5.0 CAPITAL INPUTS

##### 5.1 Land and Building

A readymade shed of about 80 sq.mtrs. can accommodate main production area, storage and packing. Cost of shed is envisaged to be Rs. 2.00 lacs.

##### 5.2 Machinery

Annual rated processing capacity of 250 tonnes with 300 working days and 2 shift working would need following machines:

Item	Qty.	Price (Rs.)
SS Jacketed Kettle	1	1,20,000
Pulper	1	60,000
Baby Boiler	1	60,000
Drum Type Dryer	1	1,50,000
Laboratory equipments, Weighing Scales, SS Tanks and Utensils, Bag-sealing Machine, etc.	--	75,000
	<b>Total</b>	<b>4,65,000</b>

##### 5.3 Miscellaneous Assets

A provision of Rs. 60,000/- is adequate towards furniture and fixtures, plastic tubs, exhaust fans, packing tables etc.

##### 5.4 Utilities

Total power requirement shall be 30 HP whereas daily water requirement would be 2000 ltrs.

##### 5.5 Raw and Packing Materials

Dried tamarind fruits is the only raw material. Tamarind trees are grown throughout the country and the nearby States of Karnataka and Madhya Pradesh are leading producers. Good quality plastic bags of 100 gms. capacity with aluminium foil lining and cartons and BOPP tape shall be the packing materials.

## 6.0 MANPOWER REQUIREMENTS

Particulars	Nos.	Monthly Salary (Rs.)	Total Monthly Salary (Rs.)
Skilled Workers	2	2,500	5,000
Helpers	4	1,250	5,000
Salesman	1	2,500	2,500
		<b>Total</b>	<b>12,500</b>

## 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 Building

Readymade shed of around 80 sq.mtrs. is sufficient and it may cost Rs. 2.00 lacs.

### 8.2 Machinery

Total cost of machinery is estimated to be Rs.4.65 lacs as explained earlier.

### 8.3 Miscellaneous Assets

A provision of Rs. 60,000/- is made under this head as spelt out earlier.

### 8.4 Preliminary & Pre-operative Expenses

Pre-production expenses like registration, establishment, travelling and administrative charges, interest during implementation, trial runs etc. would cost Rs.70,000/-.

### 8.5 Working Capital Requirements

At 60% capacity utilisation in the first year, the working capital needs would be as under:

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Raw and Packing Materials	½ Month	30%	1.00	0.70	0.30
Stock of Finished Goods	½ Month	25%	1.15	0.85	0.30
Receivables	½ Month	25%	1.55	1.15	0.40
Working Expenses	1 Month	100%	0.30	--	0.30
		<b>Total</b>	<b>4.00</b>	<b>2.70</b>	<b>1.30</b>

## 8.6 Cost of the Project & Means of Financing (Rs. in lacs)

Item	Amount
Land and Building	2.00
Machinery	4.65
Miscellaneous Assets	0.60
P&P Expenses	0.70
Contingencies @ 10% on Building and Plant & Machinery	0.65
Working Capital Margin	1.30
<b>Total</b>	<b>9.90</b>
<b>Means of Finance</b>	
Promoters' Contribution	3.00
Term Loan from Bank/FI	6.90
<b>Total</b>	<b>9.90</b>
Debt Equity Ratio	2.30 : 1
Promoters' Contribution	30%

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 annual rated capacity of 250 tonnes, actual utilisation in the first year is taken as 60% and thereafter, it is limited to 75%.

### 9.2 Sales Revenue at 100%

Assuming selling price of Rs. 55/kg. and yield of 45%, the annual sales at 100% would be Rs. 61.88 lacs.

### 9.3 Raw and Packing Materials Required at 100% (Rs. in lacs)

Product	Qty. (Tonnes)	Price/Ton (Rs.)	Value
Dried Tamarind Fruits	250	15,000	37.50
Packing Materials	--	--	1.20
		<b>Total</b>	<b>38.70</b>

### 9.4 Utilities

Annual expenditure on utilities at 100% would be Rs.60,000/-.

### 9.5 Selling Expenses

A provision of 20% of sales income every year is made towards selling commission, transportation, free sampling, appropriate publicity etc.

### 9.6 Interest

Interest on term loan of Rs. 6.90 lacs is calculated @ 12% per annum assuming repayment in 4 years including a moratorium period of 6 months whereas on working capital loan it is taken at 14% per annum.

### 9.7 Depreciation

It is calculated @ 10% on building and 15% on machinery and miscellaneous assets.

## 10.0 PROJECTED PROFITABILITY

(Rs. in lacs)

No.	Particulars	1st Year	2nd Year
<b>A</b>	<b>Installed Capacity</b>	--- 250 Tonnes ---	
	Capacity Utilisation	60%	75%
	Sales Realisation	37.15	46.40
<b>B</b>	<b>Cost of Production</b>		
	Raw and Packing Materials	23.22	29.02
	Utilities	0.36	0.45
	Salaries	1.50	1.70
	Stores and Spares	0.18	0.30
	Repairs & Maintenance	0.24	0.36
	Selling Expenses @ 20%	7.43	9.28
	Administrative Expenses	0.42	0.54
	<b>Total</b>	<b>33.35</b>	<b>41.65</b>
<b>C</b>	<b>Profit before Interest &amp; Depreciation</b>	<b>3.80</b>	<b>4.75</b>
	Interest on Term Loan	0.71	0.51
	Interest on Working Capital	0.38	0.48
	Depreciation	0.99	0.85
	Profit before Tax	1.72	2.91
	Income-tax @ 20%	0.34	0.58
	Profit after Tax	1.38	2.33
	Cash Accruals	2.37	3.18
	Repayment of Term Loan	0.90	1.80

## 11.0 BREAK-EVEN ANALYSIS

(Rs. in lacs)

No	Particulars	Amount	
[A]	Sales		37.15
[B]	Variable Costs		
	Raw and Packing Materials	23.22	
	Utilities (70%)	0.25	
	Salaries (70%)	1.05	
	Stores & Spares	0.18	
	Selling Expenses (70%)	5.20	
	Admn Expenses (50%)	0.21	
	Interest on WC	0.38	30.49
[C]	Contribution [A] - [B]		6.66
[D]	Fixed Cost		3.94
[E]	Break-Even Point [D] ÷ [C]		59%

## 12.0 [A] LEVERAGES

### Financial Leverage

$$= \text{EBIT/EBT}$$

$$= 2.81 \div 1.72$$

$$= 1.63$$

### Operating Leverage

$$= \text{Contribution/EBT}$$

$$= 6.66 \div 1.72$$

$$= 3.87$$

### Degree of Total Leverage

$$= \text{FL/OL}$$

$$= 1.63 \div 3.87$$

$$= 0.42$$

**[B] Debt Service Coverage Ratio (DSCR)**

(Rs. in lacs)

Particulars	1st Yr	2nd Yr	3rd Yr	4th Yr
Cash Accruals	2.37	3.18	3.69	4.17
Interest on TL	0.71	0.51	0.29	0.16
<b>Total [A]</b>	<b>3.08</b>	<b>3.69</b>	<b>3.98</b>	<b>4.33</b>
Interest on TL	0.71	0.51	0.29	0.16
Repayment of TL	1.00	2.00	2.00	1.90
<b>Total [B]</b>	<b>1.71</b>	<b>2.51</b>	<b>2.29</b>	<b>2.06</b>
<b>DSCR [A] ÷ [B]</b>	<b>1.87</b>	<b>1.47</b>	<b>1.78</b>	<b>2.17</b>
<b>Average DSCR</b>	----- <b>1.92</b> -----			

**[C] Internal Rate of Return (IRR)**

Cost of the project is Rs. 9.90 lacs.

(Rs. in lacs)

Year	Cash Accruals	16%	18%	20%	24%	28%	32%
1	2.37	2.04	2.01	1.97	1.91	1.85	1.80
2	3.18	2.36	2.28	2.21	2.07	1.94	1.83
3	3.69	2.37	2.25	2.14	1.93	1.76	1.61
4	4.17	2.30	2.15	2.01	1.76	1.56	1.37
5	4.43	2.11	1.94	1.78	1.51	1.29	1.11
	<b>17.84</b>	<b>11.18</b>	<b>10.63</b>	<b>10.11</b>	<b>9.18</b>	<b>8.40</b>	<b>7.72</b>

The IRR is around 21%.

**Some of the machinery suppliers are**

1. Raylon Metal Works, PB No. 17426, JB Nagar, Andheri (E), Mumbai 400 059
2. Laxicon Engg, Sita Bardi, Nagpur 440 012
3. De Leval Pvt. Ltd., A-3, Abhimanshree Society, Pashan Road, Pune-411008,  
Tel. No. 25675881/2, Fax: 25675916