

# TOMATO KETCHUP



## 1.0 INTRODUCTION

Tomato Ketchup is a table product used in households, restaurants, canteens etc. It is used with sandwiches, snack food items and while cooking many vegetarian and non-vegetarian dishes. Tomatoes are not available throughout the year and their prices shoot-up during lean season. Further, tomatoes cannot be conveniently utilised on or with certain products whereas tomato sauce, ketchup and puree can. Tomatoes are perishable but ketchup has shelf life of 10-12 months. Hence, this product has become very popular and is used in large quantity.

## 2.0 PRODUCTS

### 2.1 Applications

Products like ketchup, sauce and puree are made from tomato juice. Non-availability of tomatoes round the year and their perishable nature means they are used during specified period. But down stream products from tomato juice provide solution as they have longer shelf life. This note discusses only one of them i.e. tomato ketchup. This product can be produced in states like Gujarat, Maharashtra, AP, Karnataka and many others but this note considers Maharashtra as the prospective location in view of ever increasing demand.

### 2.2 Availability of technology, Quality Standards and Compliance

CFTRI, Mysore, has successfully developed the technical know-how. BIS has laid down the quality parameters vide 3882:1966. Compliance with PFA Act is mandatory.

### 3.0 MARKET POTENTIAL

#### 3.1 Demand and Supply

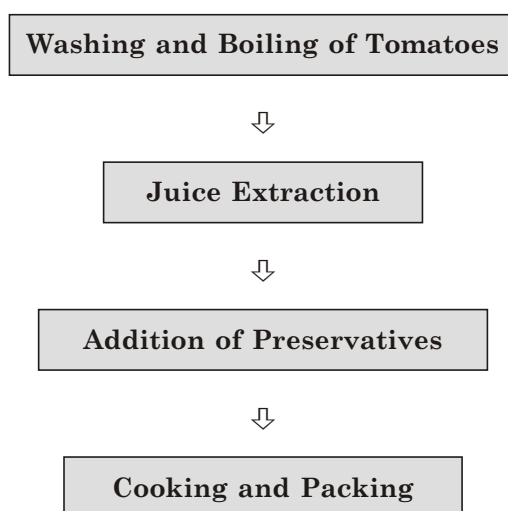
Tomatoes are extensively used for making fresh soup, as additives with many prepared vegetables and making salads. But they cannot be used as table enrichers due to their availability only during season, transportation bottlenecks and perishable nature. Tomato ketchup has become extremely popular and is extensively used for making many fastfood items, as additive in many vegetarian and non-vegetarian food preparations and as a table product. It has already made in-roads in urban and semi-urban markets and is now becoming popular in rural areas as well.

#### 3.2 Marketing Strategy

Many established national and international brands are eyeing this huge Indian market. Their presence is still limited to urban and elite markets. Semi-urban and rural markets still provide an opportunity especially to a small scale entrepreneur as it can offer a low cost good product due to its distinct edge over large units. Apart from a growing household market, there are many bulk buyers like canteens, restaurants, roadside eateries, fast food joints, caterers etc. Proper marketing strategy has to be planned before launching the product.

### 4.0 MANUFACTURING PROCESS

Matured and ripe tomatoes are thoroughly washed and then they are boiled in a steam-jacketed kettle for smooth pulping. Pulping enables extraction of juice and separation of juice and seeds, fibres and other solid materials. Many ingredients like ginger, garlic, clove, pepper, salt, sugar, vinegar and preservatives are added to the juice and this mixture is once again cooked to make it thicker and then packed. Recovery of juice varies from 40% to 45% depending upon quality of tomatoes. The process flow chart is as follows:



## 5.0 CAPITAL INPUTS

### 5.1 Land and Building

Land of around 250 sq.mtrs. would suffice. Considering price of about Rs.300/- per sq.mtr, the total expenditure would be Rs. 0.75 lac. Total constructed area of 125 sq.mtrs. can accommodate main production hall, storage and packing rooms and a small office and other facilities. Cost of civil work is estimated to be Rs. 3.35 lacs.

### 5.2 Plant and Machinery

It is suggested to have an installed production capacity of 250 tonnes per year based on 2 shifts and 300 working days. This would require following set of equipments:

Item	Qty.	Total Cost (Rs.)
Baby Boiler	1	50,000
Steam Jacketed Kettles	1	30,000
Pulper	1	25,000
Stirrer	1	15,000
Bottle Washing & Filling Machine	1	60,000
Concentration Tank	1	15,000
Washing Tank	1	7,000
Precision Weighing Scale	1	10,000
	<b>Total</b>	<b>2,12,000</b>

### 5.3 Miscellaneous Assets

Many other items like aluminium top tables, fruit crates, stainless steel utensils, furniture & fixtures, storage racks etc. shall be required for which a provision of Rs. 50,000/- is made.

### 5.4 Utilities

Power requirement will be 25 HP whereas daily water requirement will be about 2000 ltrs. Coal of about 20 tonnes will be required for boiler during the year. Hence, annual expenditure of about Rs. 1,00,000/- is expected at 100% utilisation.

### 5.5 Raw Material

The most important raw material will be good quality tomatoes. They are grown in many parts of Maharashtra and an appropriate location has to be selected. In any case, the annual requirement even at 100% utilisation will be about 600 tonnes. Other materials like sugar, spices, vinegar, salt, preservatives etc. shall be required in small quantities and can be easily procured from local market.

For packing of the finished product, glass bottles of 500 gms and 1 kg. capacity with caps and labels, corrugated boxes, BOPP tape etc. shall be needed.

## +6.0 MANPOWER REQUIREMENTS

Particulars	Nos.	Monthly Salary (Rs.)	Total Monthly Salary (Rs.)
Skilled-workers	4	2,000	8,000
Semi-skilled Workers	4	1,500	6,000
Helpers	6	1,000	6,000
Salesmen	2	2,500	5,000
		<b>Total</b>	<b>25,000</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 Land and Building

Particulars	Area (Sq.Mtrs)	Cost (Rs.)
Land	250	75,000
Building	125	3,35,000

### 8.2 Machinery

For installation of production capacity of 250 tonnes per year, the total cost of machinery will be Rs.2.12 lacs as discussed before.

### 8.3 Miscellaneous Assets

A provision of Rs.50,000/- under this head is adequate as explained earlier.

### 8.4 Preliminary & Pre-operative Expenses

There will be many pre-production expenses like registration and establishment charges, travelling, consultation fees, interest during implementation, trial run expenses and so on. A lump sum provision of Rs. 60,000/- is suggested.

### 8.5 Working Capital Requirement

As against installed capacity of 250 tonnes, actual utilisation in the first year is assumed to be 60%. To achieve this target, the project would require following working funds:

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Packing Material	1 Month	30%	0.85	0.60	0.25
Stock of Finished Goods	½ Month	25%	1.30	0.98	0.32
Receivables	1 Month	25%	2.20	1.65	0.55
Working Expenses	1 Month	100%	0.55	--	0.55
		<b>Total</b>	<b>4.90</b>	<b>3.23</b>	<b>1.67</b>

### 8.6 Cost of the Project and Means of Financing

(Rs. in lacs)

Item	Amount
Land and Building	4.10
Machinery	2.12
Miscellaneous Assets	0.50
P&P Expenses	0.60
Contingencies @ 10% on Building and Plant and Machinery	0.62
Working Capital Margin	1.67
<b>Total</b>	<b>9.61</b>
<b>Means of Finance</b>	
Promoters' Contribution	3.31
Term Loan from Bank/FI	6.30
<b>Total</b>	<b>9.61</b>
Debt Equity Ratio	1.90 : 1
Promoters' Contribution	34%

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 and Build-up

As against the installed production capacity of 250 tonnes, capacity utilisation of 60% is assumed in the first year and thereafter it is restricted to 75%.

**9.2 Sales Revenue at 100%**

(Rs. in lacs)

Product	Qty. (Tonnes)	Selling Price (Rs./Ton)	Sales
Tomato Sauce	250	35,000	87.50

**9.3 Raw Materials Required at 100%**

(Rs. in lacs)

Product	Qty. (Tonnes)	Rate (Rs/Ton)	Value
Raw Materials			
Tomatoes	600	4,000	24.00
Sugar	10	17,000	1.70
Vinegar, Spices, Salt and preservatives	--	--	2.00
		<b>Total (A)</b>	<b>27.70</b>
<b>Packing Material</b>			
Glass Bottles			
500 gms (2,50,000 Nos)		2.50	6.25
1 Kg (1,25,000 Nos)		4.50	5.62
Corrugated Boxes (12,500 Nos)		30.00	3.75
Labels, BOPP Tape, etc.	--	--	1.25
		<b>Total (B)</b>	<b>16.87</b>
		<b>Total (A+B)</b>	<b>44.57</b>

**9.4 Utilities**

As discussed earlier, annual expenditure under this head at 100% activity level will be Rs. 1,00,000/-.

**9.5 Selling Expenses**

Since the unit will be entering the market for the first time, it has to offer attractive selling commission of 15% to 17.5% to dealers and retailers. Necessary back-up support by way of hoardings, advertisement on local TV-channel, free-sampling etc. has to be undertaken. Hence a provision of 25% of sales income is made every year which is slightly on the higher side.

**9.6 Interest**

Interest on term loan of Rs.6.30 lacs is calculated @ 12% per annum considering repayment in 3 years including a moratorium period of 1 year. Interest on bank assistance for working capital is computed @ 14% per annum.

**9.7 Depreciation**

It is calculated on WDV basis @ 10% on building and 20% on plant & machinery and miscellaneous assets.

## 10.0 PROJECTED PROFITABILITY

(Rs. in lacs)

No.	Particulars	1st Year	2nd Year
<b>A</b>	<b>Installed Capacity</b>	<b>— 250 Tonnes —</b>	
	Capacity Utilisation	60%	75%
	Sales Realisation	52.50	65.62
<b>B</b>	<b>Cost of Production</b>		
	Raw Materials	16.62	20.78
	Packing Materials	10.12	12.65
	Utilities	0.60	0.75
	Salaries	3.00	3.45
	Stores and Spares	0.36	0.48
	Repairs and Maintenance	0.48	0.60
	Selling Expenses @ 25%	13.12	16.40
	Administrative Expenses	1.20	1.80
	<b>Total</b>	<b>45.50</b>	<b>56.91</b>
<b>C</b>	<b>Profit before Interest &amp; Depreciation</b>	<b>7.00</b>	<b>8.71</b>
	Interest on Term Loan	0.76	0.57
	Interest on Working Capital	0.49	0.61
	Depreciation	0.77	0.65
	Net Profit	4.98	6.88
	Income-tax @ 20%	1.00	1.40
	Profit after Tax	3.98	5.48
	Cash Accruals	4.75	6.13
	Repayment of Term Loan	--	3.15

## 11.0 BREAK-EVEN ANALYSIS

(Rs. in lacs)

No	Particulars	Amount	
[A]	Sales		<b>52.50</b>
[B]	Variable Costs		
	Raw and Packing Materials	26.74	
	Utilities (60%)	0.36	
	Salaries (65%)	1.95	
	Stores and Spares	0.36	
	Selling and Distribution Expenses (70%)	9.18	
	Admn Expenses (50%)	0.60	
	Interest on WC	0.49	<b>39.68</b>
[C]	Contribution [A] - [B]		<b>12.82</b>
[D]	Fixed Costs		<b>7.84</b>
[E]	Break-Even Point [D] ÷ [C]		<b>61%</b>

**12.0 [A] LEVERAGES**

**Financial Leverage**

= EBIT/EBT

= 6.23 ÷ 4.98

= 1.25

**Operating Leverage**

= Contribution/EBT

= 12.82 ÷ 4.98

= 2.57

**Degree of Total Leverage**

= FL/OL

= 1.25 ÷ 2.57

= 0.49

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

(Rs. in lacs)

Particulars	1st Yr	2nd Yr	3rd Yr
Cash Accruals	4.75	6.13	6.45
Interest on TL	0.76	0.57	0.21
<b>Total [A]</b>	<b>5.51</b>	<b>6.70</b>	<b>6.66</b>
Interest on TL	0.76	0.57	0.21
Repayment of TL	--	3.15	3.15
<b>Total [B]</b>	<b>0.76</b>	<b>3.72</b>	<b>3.36</b>
<b>DSCR [A] ÷ [B]</b>	<b>7.25</b>	<b>1.80</b>	<b>1.98</b>
<b>Average DSCR</b>	----- <b>3.68</b> -----		



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

Cost of the project is Rs. 7.49 lacs.

(Rs. in lacs)

<b>Year</b>	<b>Cash Accruals</b>	<b>24%</b>	<b>28%</b>	<b>32%</b>
1	4.75	2.01	1.77	1.56
2	6.13	4.94	4.79	4.65
3	6.45	4.19	3.93	3.70
	<b>17.33</b>	<b>11.14</b>	<b>10.49</b>	<b>9.91</b>

The IRR is around 34%.

**Some of the machinery and Packing material suppliers are**

1. T.Ali Mohammed & Co, MJ Phule Market, Mumbai 400 003
2. Laxicon Engineering, Sitabardi, Nagpur 400 012
3. Auric Techno Services Pvt. Ltd., C 101, Shreenath Hermitage, Baner Rd., Pune- 411008  
Tel No. 25898072 Fax No. 25899113
4. Divecha Glass Industries, 249, Balrajeshwar Rd., LBS Marg, Mulund(W), Mumbai-400080