

## **1 TOMATO PUREE, SAUCE AND KETCHUP**

### **1.1 Introduction**

Tomato is a very popular vegetable throughout the country and it is grown in many states. Apart from use in vegetables, its down stream products like soup, concentrates, sauce, puree, ketchup are also equally popular and they have a longer shelflife unlike fresh tomatoes. Tomato is perishable and needs to be transported carefully to avoid damage during transit. With the advent of new technology, many down the line products are made and are consumed round the year as table enrichers.

### **1.2 Objective**

The primary objective of the model report is to facilitate the entrepreneurs in understanding the importance of setting up unit of tomato puree, sauce and ketchup. This model report will serve as guidance to the entrepreneurs on starting up such a new project and basic technical knowledge for setting up such a facility.

### **1.3 Raw Material Availability**

The most critical raw material will be fully grown and ripe tomatoes. They are grown in the state of MP on an area of 18254 ha and hence a production of 2.738 lakh MT with the yield of 15 Mt/ Ha. Thus, availability of good quality tomatoes will not be a bottleneck. Other materials like sugar, various types of spices, vinegar, salt will not be required in large quantities and will be available locally.

### **1.4 Market Opportunities**

Tomatoes are available during the season at cheaper rates and prices start shooting up during off-season. But main reason for these products becoming popular is their extensive use as enrichers along with bread and other such preparations, in making some fastfood items like pizza, burger, hot dogs etc. and as additives with many food preparations. Hence, these products are witnessing increase in demand year after year. They have already become popular in urban and semi-urban areas and are now making in-roads in rural markets as well. Thus, there is a good scope for these products especially in semi-urban and rural areas.

## **1.5 Project description**

### **1.5.1 Applications**

The products suggested are sauce, ketchup and puree. They are made from tomato juice and many other ingredients and preservatives are added to it to enhance its shelf life and taste. These products are consumed by people of all age groups and demand is going up. These products can be made in states like MP, Maharashtra, Gujarat, Karnataka, UP, HP, North Eastern states and so on, but this note considers Madhya Pradesh as the preferred location in view of the growing market.

### **1.5.2 Availability of know how and compliances**

CFTRI, Mysore, has successfully developed the technical know-how. BIS has laid down the quality standards vide IS 3881/2/3:1966. Compliances under FPO and PFA Act are mandatory.

### **1.5.3 Critical success factors**

There are many established national as well as regional brands but they have captured mainly the urban and elite markets and for a quality product, there is a vast market which can be penetrated by offering competitive prices. Apart from a growing household market, other lucrative segment is eateries, restaurants, sandwich makers, fastfood joints etc. Marketing would play a crucial role and placement, publicity, commission to retailers etc. are important aspects.

## **1.6 Manufacturing process**

Fully grown or matured and ripe tomatoes are thoroughly washed preferably in running water. Afterwards, they are boiled in the steam jacketed kettles to facilitate pulping. During pulping, juice is extracted and other solid materials are separated. This extracted juice is the basic material from which other products are made. Sauce is made by concentrating juice and during the process; salt, sugar, vinegar, spices, preservatives, onion etc. are added to the extent that the mixture contains not less than 12% tomato solids and 28% total solids. Sauce is passed through sieve to remove fibrous and other materials. In case of ketchup, the process is more or less same, but many spices like ginger, garlic, clove, pepper are added with salt, sugar, vinegar and preservatives. While making puree, juice is concentrated under vacuum with around 9% to 12% solids. Products are then packed in bottles. Depending upon quality of tomatoes, recovery of juice varies from 40% to 45%.

## 1.7 Project component and cost

Major components of the projects and their costs are described in the table hereunder:

| PARTICULARS                          | Unit | Qty | Cost/unit     | Total         |
|--------------------------------------|------|-----|---------------|---------------|
| <b>LAND &amp; BUILDING</b>           |      |     |               | <b>14.83</b>  |
| Land                                 | SqM  | 400 | 250.00        | 1.00          |
| <b>Land Development</b>              |      |     |               |               |
| Land Area                            |      | 400 | 500.00        | 2.00          |
| <b>Building</b>                      |      |     |               |               |
| <b>Production Block</b>              |      |     |               |               |
| Main Production Area                 | SqM  | 100 | 5,000.00      | 5.00          |
| Raw material & finished goods godown | SqM  | 75  | 5,000.00      | 3.75          |
| Packing room                         | SqM  | 50  | 2,000.00      | 1.00          |
| Misc                                 | SqM  | 50  | 2,000.00      | 1.00          |
| Contingencies                        |      | 10% |               | 1.08          |
| <b>PLANT &amp; MACHINERY</b>         |      |     |               | <b>150.00</b> |
| Plant and Machinery                  | LS   | 1   | 12,500,000.00 | 125.00        |
| Contingencies                        |      | 20% |               | 25.00         |
| <b>MISCELLANEOUS FIXED ASSETS</b>    |      |     |               | <b>30.00</b>  |
| Misc assets                          | LS   | 1   | 2,500,000     | 25.00         |
| Contingencies                        |      | 20% |               | 5.00          |
| <b>PRE-OPERATIVE EXPENSES</b>        |      |     |               | <b>8.05</b>   |
| Establishment                        |      | 1   | 395,000       | 3.95          |
| Professional Charges                 |      | 1   | 50,000        | 0.50          |
| Security Deposits                    |      | 1   | 360,000       | 3.60          |
| <b>TOTAL</b>                         |      |     |               | <b>202.88</b> |

The cost of the various components will depend on the location of the project. Item wise assumptions are as under:

### 1.8 Plant and Machinery

The main machineries are Steam Jacket Kettled, Washing Tanks, Pulper, Vaccum Filling Machine, Bottle washing machine, Crown Corking machine etc. The total cost of plant and machinery is Rs.150 lakhs.

### 1.9 Building

The main production block will cost around Rs. 11.83 lakhs. The entire building will be divided into four zones.

### 1.10 Miscellaneous Assets

A provision of Rs. 30 lakhs would take care of all the requirements.

### 1.11 Preliminary & Pre-operative Expenses

A provision of Rs. 8.05 lakhs would take care of pre-production expenses like establishment, professional charges, security deposits etc.

### 1.12 Working Capital Requirement

| ITEMS                                    | Year 1       | Year 3        | Year 5        | Year 6        |
|--|--------------|---------------|---------------|---------------|
| STOCK OF RAW MATERIAL & PACKING MATERIAL | 10.24        | 17.06         | 17.06         | 17.06         |
| SUNDRY DEBTORS                           | 69.30        | 115.50        | 115.50        | 115.50        |
| <b>TOTAL</b>                             | <b>79.54</b> | <b>132.56</b> | <b>132.56</b> | <b>132.56</b> |
| <b>MARGIN</b>                            | 19.88        | 33.14         | 33.14         | 33.14         |
| <b>MPBF</b>                              | 59.65        | 99.42         | 99.42         | 99.42         |
| <b>INTEREST ON WC</b>                    | 6.56         | 10.94         | 10.94         | 10.94         |

### 1.13 Means of Finance

The means of finance will be Rs. 50 lakhs.

|                                   |     |        |        |               |
|-----------------------------------|-----|--------|--------|---------------|
| <b>EQUITY CAPITAL</b>             |     |        | 27.55% | <b>61.38</b>  |
| <b>MOFPI SUBSIDY</b>              | 25% | 50.00  | 22.45% | <b>50.00</b>  |
| <b>TERM LOAN</b>                  |     |        |        |               |
| FINANANCIAL INSTITUTIONS          |     | 10.00% | 50.00% | <b>111.38</b> |
| -Payable half yearly Installments | 10  | 11.10  |        |               |
| <b>TOTAL</b>                      |     |        | 100%   | <b>222.76</b> |

### 1.14 Cash flow statement

| PARTICULARS                    | Year 1       | Year 3       | Year 5       | Year 7       |
|--------------------------------|--------------|--------------|--------------|--------------|
| <b>SOURCES OF FUNDS</b>        |              |              |              |              |
| EQUITY CAPITAL                 | -            | -            | -            | -            |
| SUBSIDY                        |              |              |              |              |
| NET PROFIT                     | 10.83        | 47.11        | 43.67        | 41.04        |
| (INTEREST ADDED BACK)          |              |              |              |              |
| DEPRECIATION                   | 18.07        | 18.07        | 18.07        | 18.07        |
| PRELIMINARY EXP.W/O            | 1.15         | 1.15         | 1.15         | 1.15         |
| INCREASE IN TERM LOAN          | -            | -            | -            | -            |
| INCREASE IN BANK BORROWINGS-WC | 59.65        | 14.91        | -            | -            |
| <b>TOTAL</b>                   | <b>89.71</b> | <b>81.25</b> | <b>62.89</b> | <b>60.26</b> |

### 1.15 Projected balance sheet

| PARTICULARS        | Year 1        | Year 3        | Year 5        | Year 7        |
|--------------------|---------------|---------------|---------------|---------------|
| <b>LIABILITIES</b> |               |               |               |               |
| EQUITY CAPITAL     | 61.38         | 61.38         | 61.38         | 61.38         |
| RESERVES & SURPLUS | 43.13         | 86.08         | 144.92        | 205.87        |
| TERM LOAN          | 100.28        | 55.88         | 11.48         | -             |
| BANK BORROWINGS-WC | <b>59.65</b>  | <b>99.42</b>  | <b>99.42</b>  | 99.42         |
| <b>TOTAL</b>       | <b>264.44</b> | <b>302.76</b> | <b>317.20</b> | <b>366.67</b> |

### 1.16 Profitability statement

| Particulars              | Year 1 | Year 3 | Year 5 | Year 7 |
|--------------------------|--------|--------|--------|--------|
| <b>INCOME</b>            | 277.20 | 462.00 | 462.00 | 462.00 |
| <b>EXPENDITURE</b>       | 247.15 | 395.66 | 399.11 | 401.74 |
| <b>VARIABLE</b>          | 186.76 | 306.52 | 306.52 | 306.52 |
| <b>FIXED</b>             | 60.39  | 89.14  | 92.59  | 95.21  |
| <b>GROSS PROFIT</b>      | 30.05  | 66.34  | 62.89  | 60.26  |
| <b>PROFIT BEFORE TAX</b> | (6.87) | 28.92  | 29.92  | 30.10  |
| <b>RETAINED PROFIT</b>   | (6.87) | 28.92  | 29.92  | 30.10  |

### 1.17 Key Indicators

|   |               |
|---|---------------|
| NET PRESENT VALUE at current Inflation (Rs. in lakhs) | <b>262.62</b> |
| INTERNAL RATE OF RETURN %                             | <b>26.61</b>  |
| AVERAGE DSCR  | <b>1.81</b>   |
| BREAK EVEN POINT %                                    | <b>80.64</b>  |
| PAY BACK PERIOD ( YEARS)                              | <b>4.61</b>   |

### 1.18 Manpower Requirement

| PARTICULARS              | NO. |
|--------------------------|-----|
| <b>SUPERVISORY STAFF</b> |     |
| PRODUCTION SUPERVISORS   | 3   |
| <b>WORKERS</b>           |     |
| SKILLED WORKERS          | 4   |
| SEMI-SKILLED LABOUR      | 7   |
| HELPERS                  | 10  |
| SALESMEN                 | 2   |

### 1.19 Assumptions



|  |                           |        |        |
|--|---------------------------|--------|--------|
| Contingencies on Building                |                           |        | 10%    |
| Contingencies on Equipment               |                           |        | 20%    |
| Term Loan                                |                           |        | 50%    |
| Rate of Interest on Term Loan            |                           |        | 10%    |
| Subsidy Considered                       | Subject to ceiling        |        | 25%    |
| Expected time of Installation            |                           | Months | 10     |
| Moratorium                               |                           | Months | 6      |
| <b>CAPACITY</b>                          |                           |        |        |
| Rated Capacity Per Annum                 | 80% of Installed capacity | TPA    | 700    |
| Number of Operational Days               | DAYS                      |        | 240    |
| Working Hours Per day                    | Hrs                       |        | 20     |
| <b>CAPACITY UTILIZATION</b>              |                           |        |        |
| Year I                                   |                           |        | 60%    |
| Year II                                  |                           |        | 85%    |
| Year III                                 |                           |        | 100%   |
| <b>SALES PRICE</b>                       |                           |        |        |
| W S Price                                |                           |        | 66000  |
| <b>OTHER EXPENSE</b>                     |                           |        |        |
| Commission                               |                           |        | 10.0%  |
| Marketing Expenses                       |                           |        | 2.5%   |
| <b>POWER</b>                             |                           |        |        |
| Connected Load                           | HP                        |        | 90     |
| <b>DEPRICIATION AS PER COMPANY'S ACT</b> |                           |        |        |
| BUILDING                                 |                           |        | 3.34%  |
| PLANT & MACHINERY                        |                           |        | 10.34% |
| MISC. FIXED ASSETS                       |                           |        | 7.07%  |
| LAND & SITE DEVELOPMENT                  |                           |        | 1.63%  |
| <b>MAINTENANCE</b>                       |                           |        |        |
| BUILDING                                 |                           |        | 1.00%  |
| PLANT & MACHINERY                        |                           |        | 3.00%  |
| MISC. FIXED ASSETS                       |                           |        | 2.00%  |
| LAND & SITE DEVELOPMENT                  |                           |        | 1.00%  |

### 1.20 Sources of technology

- M/s. Industrial Equipments
- M/s. Archana Machinery Stores located at Guwahati, Assam
- East END Engg. Company, 173/1, Goplarai Thakur Rd., Kolkata-700035  
Tel No. 25773416/6324
- Punjab Engg. Works, 32, Ramakrishna Samadhi Rd., Kolkata-700054

**The actual cost of project may deviate on change of any of the assumptions.**