

## **JAMS, JELLIES AND MARMALADES**

### ***INTRODUCTION***

Among preserved fruits, jams, jellies, and marmalades form an important class of products. The popular varieties of jams are pineapple, Mango, Mixed fruit, Strawberry, Grape, Apricot and among jellies guava and papaya, and orange marmalades. The product is used as a spread on bread for sandwiching. It is very popular now-a-days to eat bread with jams/jellies or marmalades. Can also consumed along with chapathi, dosa or similar breakfast foods to make them more palatable. The packing ranges from 25g (single serve) to 4 Kg or even 7 Kg

***Jam*** : It is a product prepared by boiling the fruit pulp (sometimes whole fruit) with sufficient quantity of sugar to a moderately thick consistency, firm enough to hold the fruit tissues in position. It is commercially produced by using 45 parts of fruits pulp for every 55 parts of sugar. It should contain 68% soluble solids as determined by refractometer when cold and uncorrected for insoluble solids. ***Jelly***: It is a product prepared by boiling clear fruit extract (with or without) water with sugar and boiling the mixture to a stage at which it will set to a clear get. ***Marmalade***: Marmalade is a fruit jelly in which the slices of the fruit or the peel are suspended. The term generally is associated with the products made from citrus fruits like oranges and lemons, in which shredded peel is included as suspended material.

### ***RAW MATERIAL***

Pineapple, mango, guava, grape, orange, banana are the main raw materials. There is no shortage of these fruits in India and hence taking up this sort of fruit processing industries is to the local advantage. Firm, ripe, good quality fruits are to be used for the production. Chemically preserved pulps can also be used. Annual production of fruits of different variety in India is around 35 million MT.

Other raw materials needed are sugar, pectin, citric acid, colour and flavours, which are readily available. Packing materials like glass bottles, flexible containers etc. are readily available now-a-days.

### ***PLANT AND MACHINERY***

**Principal equipments**: Pulper, SS kettle, fruit mill, bottle washing machine, bottle drier and plastic jar sealing machine.

**Auxiliary equipments**: Boiler, fruit washing tank, weighing scales, sauce pan, plastic cups, SS topped tables, SS knives, storage tanks. All the items are indigenously available.

**PROJECT COST – FIXED COST – WORKING CAPITAL (in Rs. '000)**  
**(estimate for a model project)**

a)	Land & Land development (1500 m <sup>2</sup> )	150.00
b)	Building & civil construction (300 m <sup>2</sup> )	750.00
c)	Plant and machinery	650.00
d)	Miscellaneous fixed assets	225.00
e)	Pre-operative expenses	125.00
	Total Fixed Capital	1900.00
	Working capital margin	360.00
	Total Project cost	2260.00
	Total working capital required	1440.00
	Means of Finance	
	- Promoter's contribution	835.00
	- Term loan	1425.00

**PRODUCTION CAPACITY - (estimate)**

Product mix : Pineapple jam, Mango jam, Grape jam, Mixed fruit jam, Orange marmalade and Guava jelly

Working	: 200 days/annum
Installed capacity	: 750 Kg /shift/day
Optimum Capacity utilisation	: 70%

**TECHNOLOGY MANUFACTURING PROCESS - Availability**

CFTRI has standardised the process parameters for the manufacture of jams, jellies and marmalades.

Note: CFTRI does not guarantee the performance of the machine. Indenter may kindly confirm the performance, etc., from the fabricator of the machine, before a decision is taken to purchase the same.