FRUIT BAR

1. INTRODUCTION:

Fruit toffee and fruit bar are delicious and nutritious products. The manufacturing process is simple. And the commercial manufacturing is a highly profitable business. Fruits are highly perishable items. Additionally, fruits are only available on the seasonal basis. Therefore, different types of value-added processed fruit products are commercially very successful. It can be predicted that few entrepreneurs may enter in this venture along with other food base product.

2. PRODUCT & ITS APPLICATION:

Fruit bar is a traditional item. However, commercially produced fruit bars are better in terms of color, taste, and quality. Furthermore, fruit toffee is a highly nutritious food compared to other toffee and chocolates. Pulpy fruits like banana, mango, guava, apple, pineapple etc. are the best fruits for making fruit bars. For example, Mango is one of the best fruits in India. Mango bar can be prepared from green mango, ripe mango and mango juice. Mango currently accounted 39% of the total fruit export from the India. There is very good domestic and export demand of mango products. The growth rate of mango fruits bar is 20 %.

3. DESIRED QUALIFICATIONS FOR PROMOTER:

Anyone can start this project. Successful running of this project does not require any specific qualification.

4. INDUSTRY LOOKOUT AND TRENDS

There are opportunities for fresh fruit, thanks to the increased popularity of healthy, natural and organic products. Consumers look for good taste and a convenient purchase. They have also become more aware of social and environmental issues. More integrated social and certification programmers are introduced together with an increased exchange of information along the total supply chain. Meanwhile, product innovations will improve customer experiences and taste. These developments require you to specialize further and to integrate actors within the supply chain.

5. MARKET POTENTIAL AND MARKETING ISSUES, IF ANY:

The change in the income growth, increase in population, lifestyle and concern towards health and nutrition worldwide have resulted in a large demand for processed fruit and vegetable products all over the globe. India is among the topmost vegetable and fruit producer in the world and accounts for about 15% of the world's production of vegetables. A large number of units are in the cottage/home scale and small scale sector, having small capacities upto 250 tonnes/annum though big Indian and multinational companies have capacities in the range of 30 tonnes per hour or so. It has the distinction of producing almost all-tropical and exotic fruits and vegetables because of varied climatic conditions. India’s food processing sector covers fruit and vegetables. Value addition to food products has assumed vital importance in our country due to diversity in socio-economic conditions, industrial growth, urbanization and globalization. Value is added by changing their form, color and other such methods to increase the shelf life of perishables.

Fruit and vegetable processing industry has taken a new direction and is growing gradually with strong growth rate annually. Infrastructure development for processing may take this industry to the new heights in the years to come with the help of sufficient exports and investments. Fruit and vegetable processing is done widely in the food and beverage industry. Fruits and vegetables are processed into a variety of products such as juices and concentrates, pulp, canned and dehydrated products, jams and jellies, pickles and chutneys

etc. The extent of processing of fruits and vegetables varies from one country to another. Fruit toffee and fruit bar are considered as healthy snacks items. In addition, these products have better demand compared to sun dried items. In addition, these items have the larger shelf life than fresh fruits. The products have good export potential also. However, for export, you must pay attention to the quality and packaging of the product. Apart from the retail market, you can offer these products to your institutional clients. Additionally, fruit toffee containing fruit pulps or juices are very popular in the Indian market.

6. RAW MATERIAL REQUIREMENTS:

You will need to procure the raw materials like fruit pulps and juices, starch, sugar, color, preservatives, skimmed milk powder, hydrogenated fat, flavour, glucose etc. Either you can obtain the fruit pulps from other fruits and vegetable processing units or you can produce your own. Since your unit is small and the quantity required is small it is cheaper to procure it from other manufacturers. Finally, you have to procure flexible packaging materials like polyester-polyethylene laminate, polyester-aluminum foil-polyethylene laminates, corrugated board boxes etc.

7. MANUFACTURING PROCESS:

The manufacturing process is simple and standardized. First of all, you will need to thoroughly wash the fresh and ripe fruits. And then extract the pulp from the fruits. Then mix the pulp with the required quantity of sugar. This blend is then dehydrated in tray dryer and drying time is around 18-20. In fruit toffee, you will need to mix sugar, color, preservatives, glucose, skimmed milk powder, hydrogenated fat, flavor etc. In next step, dehydrate this blend in tray dryer and drying time is around 18-20 hours. On cooling, cut the slabs in pre-determined sizes and are pack in BOPP or other food grade printed film. These packs are packed in cardboard or duplex board boxes for onward distribution.The average yield is around 75%. CFTRI, Mysore has successfully commercialized the production process.

8. MANPOWER REQUIREMENT :

The enterprise requires 10 employees as detailed below**:**

Sr. No.	Designation	SALARY	Salary ₹	Number of Employees				
	Working Staff		**Per Annum**	**Year-1**	**Year-2**	**Year-3**	**Year-4**	**Year-5**
1	Production Manager	18000	18000	1	1	1	1	1
2	Operators	12000	12000	1	1	1	1	1
3	Helpers	10000	20000	2	2	2	2	2
			50000	4	4	4	4	4
1	**Fixed Staff:**							
2	Admin Manager	15000	15000	1	1	1	1	1
3	Accounts/Stores Assistant	12500	12500	1	1	1	1	1
	Office Boy	9000	9000	1	1	1	1	1
	Sub-Total		36500	3	3	3	3	3
	Total		86500	7	7	7	7	7

9. IMPLEMENTATION SCHEDULE:

The project can be implemented in 4 months' time as detailed below:

Sr. No.	Activity	Time Required *(in months)*
1	Acquisition of premises	2.00
2	Construction (if applicable)	2.50
3	Procurement & installation of Plant & Machinery	2.50
4	Arrangement of Finance	1.00
5	Recruitment of required manpower	1.00
	Total time required *(some activities shall run concurrently)*	4.00

10. COST OF PROJECT:

The project shall cost ₹ 35.50lacs as detailed below:

Sr. No.	Particulars	₹ in Lacs
1	Land	0.00
2	Building	0.00
3	Plant & Machinery	26.00
4	Furniture, other MiscEquipments	1.50
5	Other Assets including Preliminary / Pre-operative expenses	2.60
6	Margin for Working Capital	5.40
	Total	**35.50**

11. MEANS OF FINANCE:

Bank term loans are assumed @ 75 % of fixed assets.

Sr. No.	Particulars	₹ in Lacs
1	Promoter's contribution	8.88
2	Bank Finance	26.63
	Total	**35.50**

12. WORKING CAPITAL CALCULATION:

The project requires working capital of ₹ 5.40 lacs as detailed below:

Sr. No.	Particulars	Gross Amt	Margin %	Margin Amt	Bank Finance
1	Inventories	2.70	0.25	0.68	2.03
2	Receivables	1.35	0.25	0.34	1.01
3	Overheads	1.35	100%	1.35	0.00
4	Creditors	-		0.00	0.00
	Total	5.40		2.36	3.04

13. LIST OF MACHINERY REQUIRED:

In initiating a small scale production unit, a 500 Sq Mt space is sufficient. However, according to the desired production quantity output, you must select the area of your unit. In addition, you will need to provide the major utilities like water, electricity and semi-skilled labors. The main machinery is Pulp and Juice preparation line consisting of Baby Pulper, Fruit mill, Preparation Table, SS Trays, set of Knives etc. Raw material mixing and boiling section consisting of Holding Tank, Homogenizer, Steam jacketed kettles, pump etc. Tray dryers, Weighing scale, Toffee drawing and cutting machine, Cooling conveyor, Wrapping /Packing machine, Boiler, Trays, Preparation Tables, Trolley, electrical, Laboratory equipment

Sr. No.	Particulars	UOM	Qtty	Rate (₹)	Value (₹ in Lacs)
	Plant & Machinery / equipments				
a)	***Main Machinery***				
1	Baby Pulper, Fruit mill,	Nos	1	2.50	2.50
2	SS Trays,mixing,boiling Tank	Nos	6	3.00	3.00
3	Homogeniser, Steam jacketed kettles	Nos	1	4.50	4.50
4	Tray dryers and other machineries	Nos	1	11.00	11.00
5	Utility Equipments		1	3.00	3.00
	Installation, Taxes and Transportation			2.00	2.00
	sub-total			**26.00**	**26.00**
	Furniture / Electrical installations				
a)	Office furniture	LS	1	150000	1.50
b)	Stores Cupboard	LS	1	250,000	2.50
c)	Computer & Printer	LS	1	100000	1.00
	sub total				**1.50**
	Other Assets				
a)	Preliminary and preoperative				2.60
	sub-total Other Assets				2.60
	Total				**30.10**

All the machines and equipments are available from local manufacturers. The entrepreneur needs to ensure proper selection of product mix and proper type of machines and tooling to

have modern and flexible designs. It may be worthwhile to look at reconditioned imported machines, dies and tooling. Some of the machinery and dies and tooling suppliers are listed here below:

1. Fry-Tech Food Equipments Private Limited
S. No. 4, Raviraj Industrial Estate,
BhikhubhaiMukhi Ka KuwaBharwadvash,
Ramol, Ahmedabad - 380024,
Gujarat, India

2. Hindustan VibrotechPvt. Ltd.
Office No. 2, Ground Floor,
Vrindavan Building, Vile Parle East,
Mumbai – 400057,
Maharashtra, India

3. Electrons cooling systems Pvt. Ltd.
S-27, SIDCO Industrial Estate
Kakkalur Industrial Estate
Tiruvallur – 602003,
Tamil Nadu, India

4. Springboard Enterprises India Ltd.
1st, 2nd & 3rd Floor,
Plot No. 7, 8 & 9,
Garg Shopping Mall,
Service Centre, Rohini Sector 2
New Delhi – 110085,
Delhi, India

5. Flour Tech Engineers Private Limited
Plot No. 182, Sector 24,
Faridabad - 121005,
Haryana, India

6. P Square Technologies
3, Swami Mahal,
Gurunanak Nagar,
Off. Shankarsheth Road Bhavani Peth,
Pune - 411002,
Maharashtra, India

7. Ricon Engineers
10 To 13, Bhagwati Estate,
Near Amraiwadi Torrent Power,
Behind Uttam Dairy,
Rakhial, Ahmedabad - 380023,
Gujarat, India

8. Kamdhenu Agro Machinery
Plot No. 6, Near Power House,
Wathoda Road Wathoda,
Nagpur - 440035,
Maharashtra, India

14. PROFITABILITY CALCULATIONS:

Sr. No.	Particulars	UOM	Year-1	Year-2	Year-3	Year-4	Year-5
1	Capacity Utilization	%	60%	70%	80%	90%	100%
2	Sales	₹. In Lacs	16.20	18.90	21.60	24.30	27.00
3	Raw Materials & Other direct inputs	₹. In Lacs	10.80	12.60	14.40	16.20	18.00
4	Gross Margin	₹. In Lacs	5.40	6.30	7.20	8.10	9.00
5	Overheads except interest	₹. In Lacs	3.90	4.15	4.64	4.78	4.88
6	Interest @ 10 %	₹. In Lacs	2.66	2.66	1.78	1.33	1.07
7	Depreciation @ 30 %	₹. In Lacs	7.80	5.46	3.98	3.12	2.34
8	**Net Profit before tax**	₹. In Lacs	**-8.97**	**-5.97**	**-3.19**	**-1.13**	**0.71**

The basis of profitability calculation:
This unit will have 200Kg/Day capacity. The growth of selling capacity will be increased 10% per year. (This is assumed by various analysis and study, it can be increased according to the selling strategy.)

Energy Costs are considered at Rs 7 per Kwh and fuel cost is considered at Rs. 65 per litre. The depreciation of plant is taken at 10-12 % and Interest costs are taken at 14 -15 % depending on type of industry.

15. BREAKEVEN ANALYSIS:

The project shall reach cash break-even at % of projected capacity as detailed below:

Sr. No.	Particulars	UOM	Value
1	Sales at full capacity	₹. In Lacs	27.00
2	Variable costs	₹. In Lacs	18.00
3	Fixed costs incl. interest	₹. In Lacs	5.95
4	BEP = FC/(SR-VC) x 100 =	% of capacity	66.06%

16. STATUTORY / GOVERNMENT APPROVALS

The Ministry of Food Processing Industries has been operating several plan schemes for the development of processed food sector in the country during the 10th Plan. One of the schemes relates to the Technology Up-gradation/ Establishment/ Modernization of food processing industries.

The Indian food processing industry is regulated by several laws which govern the aspects of sanitation, licensing and other necessary permits that are required to start up and run a food business. The legislation that dealt with food safety in India was the Prevention of Food Adulteration Act, 1954 (hereinafter referred to as "**PFA**"). The PFA had been in place for over five decades and there was a need for change due to varied reasons which include the changing requirements of our food industry. The act brought into force in place of the PFA is the Food Safety and Standards Act, 2006 (hereinafter referred to as "**FSSA**") that overrides all other food related laws.

FSSA initiates harmonization of India's food regulations as per international standards. It establishes a new national regulatory body, the Food Safety and Standards Authority of India (hereinafter referred to as "**FSSAI**"), to develop science based standards for food and to regulate and monitor the manufacture, processing, storage, distribution, sale and import of food so as to ensure the availability of safe and wholesome food for human consumption. Entrepreneur may contact State Pollution Control Board where ever it is applicable.

All food imports will therefore be subject to the provisions of the FSSA and rules and regulations which as notified by the Government on 5th of August 2011 will be applicable.

Key Regulations of FSSA

A. Packaging and Labelling
B. Signage and Customer Notices
C. Licensing Registration and Health and Sanitary Permits

17. BACKWARD AND FORWARD INTEGRATIONS

The objective of the scheme is to provide effective and seamless backward and forward integration for processed food industry by plugging the gaps in supply chain in terms of availability of raw material and linkages with the market. Under the scheme, financial assistance is provided for setting up of primary processing centres/ collection centres at farm gate and modern retail outlets at the front end along with connectivity through insulated/ refrigerated transport.

The Scheme is applicable to perishable horticulture and non-horticulture produce such as, fruits, vegetables, dairy products,meat,poultry,fish,Ready to Cook Food Products,Honey,Coconut,Spices,Mushroom,Retails Shops for Perishable Food Products etc.The Scheme would enable linking of farmers to processors and the market for ensuring remunerative prices for agri produce.

The scheme is implemented by agencies/ organizations such as Govt./ PSUs/ Joint Ventures/ NGOs/ Cooperatives/ SHGs / FPOs / Private Sector / individuals etc.

Backward Linkage:

- Integrated Pack-house(s) (with mechanized sorting & grading line/ packing line/ waxing line/ staging cold rooms/cold storage, etc.)
- Pre Cooling Unit(s)/ Chillers
- Reefer boats
- Machinery & equipment for minimal processing and/or value addition such as cutting, dicing, slicing, pickling, drying, pulping, canning, waxing, etc.
- Machinery & equipment for packing/ packaging.

Forward Linkage:

- Retail chain of outlets including facilities such as frozen storage/ deep freezers/ refrigerated display cabinets/cold room/ chillers/ packing/ packaging, etc.
- Distribution centre associated with the retail chain of outlets with facilities like cold room/ cold storage/ ripening chamber.

18. TRAINING CENTERS AND COURSES

There are few specialised Institutes provide degree certification in Food Technology, few most famous and authenticate Institutions are as follows:

1. Indian Institute of Food Science & Technology,
   Plot No.1, Near Maa-BaapkiDargah,Opp to Nath Seeds,
   Paithan Road Aurangabad
   Aurangabad - 431005
   Maharashtra, India

2. MIT College of Food Technology, Pune
   Gate.No.140, Raj Baugh Educational Complex,
   Pune Solapur Highway,
   LoniKalbhor, Pune – 412201
   Maharashtra, India

3. CSIR - Central Food Technological Research Institute (CFTRI)
   Cheluvamba Mansion, Opp. Railway Museum,
   Devaraja Mohalla, CFTRI Campus, Kajjihundi, Mysuru
   Karnataka – 570020

Udyamimitra portal (link : www.udyamimitra.in) can also be accessed for handholding services viz. application filling / project report preparation, EDP, financial Training, Skill Development, mentoring etc.

Entrepreneurship program helps to run business successfully is also available from Institutes like Entrepreneurship Development Institute of India (EDII) and its affiliates all over India.

Disclaimer:

Only few machine manufacturers are mentioned in the profile, although many machine manufacturers are available in the market. The addresses given for machinery manufacturers

have been taken from reliable sources, to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further the same have been given by way of information only and do not carry any recommendation.