

WAFER BISCUIT MANUFACTURING PLANT

1. INTRODUCTION:

Bakery has been a traditional activity globally. In India also this has been a conventional economic activity. Bread & biscuits contribute more than 70% of the total bakery products. Over a period of time, conventional bakeries have been replaced by mechanized one and several new varieties of biscuits are available in the market. India is amongst the top five biscuit manufacturers in the world. Biscuits are popular throughout the country and people from all age groups enjoy them.

2. PRODUCT & ITS APPLICATION:

Biscuits are made from wheat flour and some other ingredients are added depending upon the variety to be produced. They are of many sizes, varieties & flavors. Wafer biscuits would have two wafers like layers and cream will be stuffed between these two layers to form a sandwich like biscuit. This is a versatile product with good market prospects.

3. DESIRED QUALIFICATIONS FOR PROMOTER:

Do not require any specific qualification. Graduate in chemistry science, with detailed knowledge of business.

4. INDUSTRY LOOKOUT AND TRENDS

Expanding demand for healthy snacks and Increase in per capita food consumption in developing countries are the primary drivers leading the global biscuits market during the forecast period. The market is also expected to continue being augmented by rising demand for convenience food, innovation

in packaging, and expanding young population. One such growth in biscuits market is increasing per capita consumption of biscuits globally.

The global biscuits market is, however, currently restrained by the shortage of food ingredients and labour along with increase in tax rate. Increasing competition among key players is the main challenge for biscuit manufacturers which will lead to decrease in the profit margin. As competition intensifies in the sector with price wars among leading players, industry players are expected to improve the efficiency of their value chain, from inbound logistics to distribution and, to a large extent, marketing and export of products. Revenue generated from biscuits market is estimated to be valued at roughly US\$76,384.9 mn by the end of 2017 and is expected to increase at a CAGR of 4.7% over the forecast period. Global biscuits market is expected to be valued at approximately US\$109,959.9 mn by the end of 2025.

5. MARKET POTENTIAL AND MARKETING ISSUES, IF ANY:

The estimate made by the Ministry of Food Processing Industries, the total market of bakery product, bread and biscuit is estimated at 1.5mn ton and 1.1mn ton respectively.

The confectionery industry has a current capacity of 85, 000 tones, the market is growing at the rate of 10-15% per annum. The estimated annual production of bakery products in India is in excess of 3 million tones, of which bread accounts for nearly 50% and biscuits 37% in volume terms in the organized sector.

India is the world's second largest manufacturer of biscuits, after USA. The biscuit industry in India is presently growing at the rate of 13% per annum. Despite the potential and the fast growth rate of the industry, penetration is known to be a difficult affair. Several companies have failed to fit the bill when it comes to consumer tastes, and among these have been giants like Hindustan Lever.

If we see the overall biscuit industry of India in the life cycle stage we find that it is in the **Growth stage** because it is growing at the rate of 15 to 17% every year. It is well established industry in India. It has a very large number of players in the organized as well as many players in unorganized sector. It is also well established in local areas of all the parts of the country. It has also acquired a very large amount of potential sales of biscuit in the country. Biscuit is such product which is highly consumed by people of all age. The industry is facing good competition in the country. Four major players of the industry i.e. Parle, Britannia, Sunfeast and PriyaGold are fighting hard to acquire market share of the industry.

Interestingly, though wafers are produced in large quantity, most are unbranded or localized. Tiffany and Nutro popular wafer biscuit brands source wafers from UAE, package and market them in India. This shows that there is potential for bakery manufacturers to enter branded wafer biscuit market in India.

Current market players (Popular Brands)

Wafers Biscuit Chocolate Enrobed	Wafer Biscuit Cream Filled
Bravo - Bakers Pride	Dukes
Nestle - Munch	Tiffany
Cadbury - Perk	Nutro

Industry Framework

In wafer biscuit industry consumer generate demand of biscuits through four factors that is brand recall, quality of biscuits, nutrition contents and price of the biscuits. They deliver the flow of money to manufacturers to satisfy their above demand. Manufacturer produces the biscuit by keeping in mind the demand of consumers. Then the flow of the biscuits (goods) reach to the market through three factors i.e. distribution, factory location and market knowledge. In the final stage goods reach to the final consumer.

Issues:

Industries such as Biscuit are also languishing as they are not able to achieve their potentials for higher production, in the absence of the concrete food Processing Industry Policy. FBMI in close coordination with other organizations and apex Chambers, initiated to urge the Govt of India to formulate a comprehensive Policy Document, for smooth growth and harmonious development of the industry. The Food Processing Industry Policy, which has been evolved as a result of various workshops, deliberations and representations by a large cross section of food processing industries, is yet to be finalized.

Hike in cost of production:

Biscuit Industry especially the Small & Medium Sector, consisting of around 150 units is facing erosion in their profitability and competitive capability, due to:-

Steep hike in cost of production on account of increase in prices of major raw materials, i.e. Wheat Flour Veg. Oil, Sugar, Milk, Packaging Materials, Fuel, Wages etc.

The Threat of Substitute**Products:**

The existence of products outside of the realm of the common product competitors which increases the propensity of customers to switch to alternatives

- Relative price performance of substitutes: low
- Buyer switching costs: low
- Perceived level of product differentiation: high level of differentiation

The substitute products includes Khari, Tost, Nankhattai, Bhakhari, Khakhara, Bread, Packaged snacks and other bakery products affects the demand of biscuit. The uses of these all home made products are responsible for either

in increase or decrease in the demand of the biscuits in the country.

The Threat of the Entry of New Competitors:

Profitable markets that yield high returns will draw firms. This results in many new entrants, which will effectively decrease profitability. Unless the entry of new firms can be blocked by incumbents, the profit rate will fall towards a competitive level ([perfect competition](#)).

- The existence of [barriers to entry \(patents, rights, etc.\)](#): low
- [Brand equity](#): high in organized sector
- Switching costs or [sunk costs](#) : low
- Capital requirements: high in organized sector
- Access to distribution: strong distribution channel is required
- [Customer loyalty to](#) established brands: high in organized sector
- Government policies: moderate

The biscuit industry can be divided in to two parts, organized sector and the unorganized sector. For new firms it is easy to enter in the unorganized sector, but if a firm wants to enter in the organized sector then it must have adequate production capacity, heavy promotional and advertisement and strong distribution channel. The player with all the above resources is a big threat to the existing industry players.

The Bargaining Power of Customers

The ability of customers to put the firm under pressure and it also affects the customer's sensitivity to price changes.

- Degree of dependency upon existing channels of distribution: high
- Buyer volume: high
- Buyer information availability: high (through advertisement)
- Availability of existing substitute products: high
- Buyer price sensitivity: moderate

In the industry there are most of customers who are price sensitive and in the market there are many biscuits which are available in the low to moderate price range which affects the demand of the premium brand of biscuits. And the other factor is the like of the customers for the other bakery products.

The Bargaining Power of Suppliers:

Suppliers of raw materials, components, labor, and services (such as expertise) to the firm can be a source of power over the firm. Suppliers may refuse to work with the firm, or e.g. charge excessively high prices for unique resources.

- Degree of differentiation of inputs: moderate
- Presence of substitute inputs: high
- Employee solidarity (e.g. labor unions): high in organized sector

The main suppliers of the wafer biscuit industry includes the suppliers of sugar, wheat, milk have their own impact on the industry. Apart from this the suppliers of other ingredients like chocolate, glucose, butte, cashew, coconut, strawberry etc also affects the prices of biscuit products.

6. RAW MATERIAL REQUIREMENTS:

The main ingredient in Biscuit making is wheat flour, and other ingredients such as sugar, salt, milk, cream, and synthetic flavors are added for desired taste. Though there are many kinds of biscuits, two kinds of wafer biscuits are more popular: Cream filled sandwich in which cream is filled between two layers of wafer sheets and Chocolate Coated wafers.

For Batter	For Cream
Flour	Cream fat

Water	Soya lecithin
Soya lecithin	Blend (Milk Blend, Caramel, Chocolate, Banana, Orange, Hazelnut, Coconut)
Sodium	Sugar
Salt	
Vegetable oil	Skimmed milk powder

7. MANUFACTURING PROCESS:

It is conventional and simple. Various ingredients like wheat flour, starch, sugar, salt, soda, vanaspati, preservatives, flavors, colors etc. can be procured from local sources. Initially, wheat flour, starch, salt, soda etc. are mixed with water in a mixer and paste is formed. This paste is poured into pre-heated moulds and wafer- like sheets is baked. Simultaneously cream is prepared in the planetary mixer by mixing sugar, vanaspati, essence, colors and flavors and this cream is spread on baked sheets to make sandwiches. Finally, they are cut into required sizes and packed.

In summary manufacturing process is as below:

- 1) Mixing of Ingredients
- 2) Formation of Paste
- 3) Baking
- 4) Preparation and spreading of cream
- 5) Packing.

8. MANPOWER REQUIREMENT:

Sr. No.	Designation Of Employees	Salary Per Person	Monthly Salary	Number of employees required				
				Year-1	Year-2	Year-3	Year-4	Year-5
1	Operator	10,000	20,000	2	2	2	2	2
2	Un Skilled Workers	5,000	50,000	10	10	10	12	12
3	Miller-Cum Chemist	15,000	15,000	1	1	1	1	1
4	Mechanic Cum Electrician	8,000	32,000	4	4	4	4	4

5	Accountant	12,000	12,000	1	1	1	1	1
6	Store Keeper	8,000	8,000	1	1	1	1	1
7	Sales Supervisor	12,000	12,000	1	1	1	1	1
	Security Personnel	6,500	6,500	1	1	1	1	1
8	Office Staff	6,000	18,000	3	3	3	3	3
9	Manager	20,000	20,000	1	1	1	1	1
10	Skilled Labour	10,000	10,000	7	7	7	7	7
	Total		193,500	32	32	32	34	34

9. IMPLEMENTATION SCHEDULE:

The project can be implemented in 8 months' time as detailed below:

Sr. No.	Activity	Time Required (in months)
1	Acquisition of premises	1.00
2	Construction (if applicable)	1.00
3	Procurement & installation of Plant & Machinery	3.00
4	Arrangement of Finance	2.00
5	Recruitment of required manpower	1.00
	Total time required (some activities shall run concurrently)	8.00

10. COST OF PROJECT:

Sr. No.	Particulars	INR in Lacs
1	Land	7.50
2	Building	3.20
3	Plant & Machinery	6.04
4	Furniture, Electrical Installations	1.00
5	Other Assets including Preliminary / Pre-operative expenses	0.60
6	Margin for Working Capital	2.53
	Total	20.88

11. MEANS OF FINANCE:

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

Sr. No.	Particulars	INR in Lacs
1	Promoter's contribution	5.22
2	Bank Finance	15.66
	Total	20.88

12. WORKING CAPITAL CALCULATION:

The project requires working capital of INR 2.53 lacs as detailed below:

Sr. No.	Particulars	Gross Amt	Margin %	Margin Amt	Bank Finance
1	Inventories	1.27	0.25	0.32	0.95
2	Receivables	0.63	0.25	0.16	0.47
3	Overheads	0.63	100%	0.63	0.00
4	Creditors	-		0.00	0.00
	Total	2.53		1.11	1.42

13. LIST OF MACHINERY REQUIRED:

A detail of important machinery is given below: Power Requirement: 85 HP

Sr. No.	Particulars	UOM	Qty	Rate (INR)	Value(Lacs)
1	50 Kgs/hr. capacity wafer biscuit making machine	NOS.	1	275,000.00	2.75
2	Butter Mixing Machine (7-30 Kgs/Hr. Butter 2 KW)		1	35,000.00	0.35
3	Sugar Grinding Machine (30-50 Kgs/Hr. 2 KW)	Nos	1	35,000.00	0.35
4	Planetary Mixer (3 speed system, steel body, capacity 25 Kg./Hrs, 2 KW)	Nos	1	45,000.00	0.45
5	Sealing Machine (1 KW)		1	15,000.00	0.15
6	Working Table with S.S. / aluminum top		2	5,000.00	0.05
7	Weighing scale Platform type		4	5,000.00	0.05
8	Aluminum vessel, mats, cups, mugs, ladle, spoons, glove etc.			15,000.00	0.15

9	Electrification and installation charges (@10% cost of plant and machinery)		1	45,000.00	0.45
10	Dust cyclone with air seal dia 1120		2	17,000.00	0.17
11	Dust cyclone with air seal dia 960		3	15,000.00	0.15
12	Cost of office furniture and equipment		1	30,000.00	0.30
	sub-total Plant & Machinery				6.04
	Furniture / Electrical installations				
a)	Office furniture	LS	1	50000	0.50
b)	Stores Almirah	LS	1	0	0.00
c)	Computer & Printer	L. S.	1	50000	0.50
	sub total				1.00
	Other Assets				
a)	preliminary and preoperative				0.60
	sub-total Other Assets				0.60
	Total				7.64

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,
Bhikhubhai Mukhi Ka Kuwa Bharwadvash,
Ramol, Ahmedabad - 380024,
Gujarat, India
2. Hindustan Vibrotech Pvt. Ltd.
Office No. 2, Ground Floor,
Vrindavan Building, Vile Parle East,
Mumbai - 400057,
Maharashtra, India
3. Electrons cooling systems Pvt. Ltd.

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|---|---------|----------|------------|----------|
| | 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	INR In Lacs	43.20	50.40	57.60	64.80	72.00
3	Raw Materials & Other direct inputs	INR In Lacs	15.26	17.80	20.34	22.88	25.43
4	Gross Margin	INR In Lacs	27.94	32.60	37.26	41.92	46.57
5	Overheads except interest	INR In Lacs	24.90	26.45	29.56	30.50	31.12
6	Interest @ 10 %	INR In Lacs	1.57	1.57	1.04	0.78	0.63
7	Depreciation @ 30 %	INR In Lacs	4.23	3.02	2.11	1.51	1.36
8	Net Profit before tax	INR In Lacs	-2.75	1.56	4.54	9.13	13.47

The basis of profitability calculation:

This unit will have 240 Ton/Annum 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 68.16% of projected capacity as detailed below:

Sr. No.	Particulars	UOM	Value
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1	Sales at full capacity	₹. In Lacs	72.00
2	Variable costs	₹. In Lacs	25.43
3	Fixed costs incl. interest	₹. In Lacs	31.75
4	$BEP = FC/(SR-VC) \times 100 =$	% of capacity	68.16%

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 centers/ collection centers 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, Retail 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-Baap ki Dargah,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,
Loni Kalbhor, 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.

Source:- Udyami Mitra/Sidbi