

BISCUIT PLANT FOR SWEET, CREAM, PREMIER TYPES

1. INTRODUCTION

The word 'Biscuit' is derived from the Latin words 'Bis' (meaning 'twice') and 'Coctus' (meaning cooked or baked), history evidence is that biscuits are made since 17th century. Typically, biscuits are small baked products made principally from flour, sugar and fat. They typically have a moisture content of less than **4%** and when packaged in moisture proof packing material has a long shelf life, perhaps six months or more. The appeal to consumers is determined by the appearance and eating qualities. Biscuits are mainly of two types: hard dough and soft dough biscuits depending on water activity of dough. Biscuits are made in many shapes and sizes with or without embossed designs or logos. They are of different flavours as well they may be coated with chocolate, sandwiched with a fat-based filling.

Biscuit making is a conventional activity in India and in many other countries. The biscuits are produced by organized sector in large quantities, however, unorganized sector having prominent share in market. Despite the advent of modern, large capacity and automatic biscuit making plants, large section of people especially in semi-urban and rural areas still prefer fresh biscuits from local bakery as they are cheap and offer many varieties. These manufacturers are able to cater to some typical local palate as well. Thus, they are able to withstand competition from organized sector units.

2. PRODUCTS AND ITS APPLICATION:

- * Biscuits products are ready to eat and convenient to use at any place or anytime.
- * Biscuits having a good food value with substantial energy, protein, carbohydrates and minerals apart from pleasing taste and texture. Handy foods for breaking hunger.
- * Diabetic, protein-rich, gluten-free and multi-grain biscuits are available and capturing good markets among health conscious people.

Plant Capacity & Product-Mix:

It is proposed here to produce 5 tons of glucose per day. On the similar line, one can produce other varieties of biscuits like cookies, salty, sandwich biscuits etc.

3. DESIRED QUALIFICATION FOR PROMOTER:

The promoters must be competent to perform right from market vigilance, product technology, machinery specs and automation, well versed with food laws, quality parameters, capable for doing liaison with government and statutory bodies as well for financing for capital and working expenditure.

4. INDUSTRY OUTLOOK/TREND

The biscuit manufacturing industry is growing at the rate of 8% per annum. Now with GST in place more growth will be in organized sector. The trend is to go for more variety, taste, healthy products and innovative packaging. The completion is also very much in this industry and therefore creativity and innovation in products and packaging will decide the growth of this sub-sector

5. MARKET POTENTIAL AND MARKETING ISSUES, IF ANY:

The biscuits and cookies industry in India, valued at INR 15,000 crores is growing at CAGR of 8% over the last three years. It is estimated that the industry will be worth nearly INR 30,000 crores by FY 2019. The industry can be classified into two separate sectors - organized and unorganized. Biscuits and breads are the major components of the Indian bakery industry and together these two account for almost 80 percent of the aggregate production. Nowadays the biscuit industry contributes approximately 33 percent of the total production of the bakery industry. 70 percent of the biscuits in India are produced by the small scale sector.

Per capita consumption of biscuits in India has been estimated at 2 kg. This is fairly low compared to the per capita consumption of over 10kg in the US and the UK and over 4.5kg in the South-east Asian countries (Hong Kong, Singapore, Thailand, etc.). India is also one of the leading producers of biscuits in the world along with the US and China. Approximately 17 percent of the biscuits produced in India is exported to locations such as the following: USA, UK, Ghana, Angola, Haiti, UAE, etc.

With rising incomes, consumers are being lured towards cream biscuits and cookies instead of glucose biscuits. Premium biscuits are likely to increase its share by FY 2019 as manufacturers are now aggressively entering the premium biscuit and cookie segment on account of higher margins prevalent in this category.

The leading biscuit brands in India are: PARLE, BRITANIA, PRIYA GOLD, ANMOL, HORLICKS, CREMICA, SUNFEAST, BISKFARM, ROSE, SOBISCO, DUKES, NEZONE, etc. Apart from Indian brands, imported brands popular in India are: OREO, SUMO, HAPPYBITE, etc.

6. RAW MATERIAL REQUIREMENTS:

Requirements of Raw Material

Sr. No.	Raw Material	Tons/Annum
1	Maida	927.314
2	Sugar	278.194
3	Liquid Glucose	92.731
4	Palmolein	176.190
5	Skimmed Milk Powder	8.140
6	Flavour	1.649
7	Salt	9.994
8	Ammo. Bi-Carbonate	11.849
9	Soda	4.121
10	Sodium Meta Bi-Sulphite	0.155
11	Lecithin	0.567
12	Water	139.097
		1,650.000

7. MANUFACTURING PROCESS:

Biscuit manufacturing consists of four major processes: mixing, forming, baking and packing. Mixing is a crucial process where sifted flour is mixed with other ingredients and additives in right proportion to form dough of right consistency as per type of biscuit to be produced. The mixing may be carry out in single or double or triple stages as per type of biscuit, ingredients and additives mixing characteristics and required consistency of dough for molding. The mixed dough of required consistency is then fed on to the processing line where it is sheeted or laminated, then cut into required dimensions under rotary molding machine followed by baking in four stage oven where every baking zone has different temperature to bake individual piece of biscuit to get right color, taste and aroma. Thus baked biscuits are needed to cool properly in a well-designed cooling zone or belt. The cooled biscuits are then packed and dispatched. For making cream sandwiched biscuits, first cream is prepared with proper whooping, cream spreader is needed and then a special machine for packing of cream sandwiched biscuit is required to pack them.

8. MANPOWER REQUIREMENT:

Requirements of Manpower

Manpower Total Requirements	Persons
Technical Staff	5
Adm. Staff	10
Marketing Staff	10
Labour	125
Total	150

9. IMPLEMENTATION SCHEDULE:

Project Stages	MONTHS									
	1	2	3	4	5	6	7	8	9	10
Purchase of Land	Yellow	Yellow	Yellow							
Completion of Building	Green	Green	Green	Green	Green	Green				
Ordering of Machinery	Light Green	Light Green	Light Green							
Delivery of Machinery			Light Red	Light Red	Light Red	Light Red				
Term/Wkg Loan Sanction		Light Blue	Light Blue	Light Blue	Light Blue					
Installation of Machinery					Light Orange	Light Orange	Light Orange			
Commissioning of Plant							Red	Red		
RM/Inputs Procurement								Light Purple		
Manpower Appointments								Light Blue		
Commercial Production								Light Green		

10. COST OF PROJECT:

Sr. No.	Costing Heads	Qty.	Rate/Unit	Rs. Lacs
1	Land in Sq. M. + Expenses	2,000	1,000.00	20.00
2	Building	1,000	9,000.00	90.00
3	Plant & Machinery			221.00
4	Other Capital Investment			10.00
5	Contingency			10.00
	Total Cost of Project			351.00

11. MEANS OF FINANCE:

Sr. No.	Means Heads	Rs. Lakhs
1	Promoters Capital	87.75
2	Term Loan	204.60
3	MFPI Subsidy	50.00
4	Unsecured Deposits	8.65
	Total Means of Finance	351.00

12. WORKING CAPITAL CALCULATION:

Calculation of Working Capital

Particulars	Stock Period Days	Value of Stock Period	Promote r Margin	Promote r Share	Bank Borrowings
Raw Material	15	24.28	0.60	14.57	9.71
Packing Material	30	57.35	0.75	43.01	14.34
Work in Process	3	15.93	0.40	6.37	9.56
FP Stock	15	28.68	0.40	11.47	17.21
Bills Receivable	15	28.68	0.40	11.47	17.21
Working Expense	30	2.50	1.00	2.50	0.00
Total:				89.40	68.02
				Rounding	70.00

13. LIST OF MACHINERY REQUIRED:

Sr. No.	Equipment	Qty.
1	Dough Mixing Machine	1
2	Hydraulic Dough Crusher	1
3	Rotary Moulding Machine	1
4	Swivel Panner Web	1
5	Turbo Radiant Baking Oven	1
6	Stripper Unit	1
7	Cooling Conveyor	1
8	Magnetic Stacker Unit	1
9	Packing Table	1
10	Cream Biscuit Sandwich m/c	1
11	Planetary Cream Mixer	1
12	Dough Truck Unloader	1
13	Horizontal Dough Laminator	1 lot
14	Rotary Cutting Unit	1 lot
15	Inclined Feed Conveyor	1
16	Gauge Roll	3
17	Intermediate Web	2
18	Dough Relax Web + Conveyor	1lot
19	Rotary Cutting Machine	1 lot
20	Rotary Cutting Web + conveyor	1 lot
21	Scrap Conveyor	1
22	Milk Spray Unit	1
Sr. No.	Equipment	Qty.
23	Salt Sprinkler	1

24	SS Oil Spraying Unit	1 lot
25	Packaging Machinery	4
26	Utility & Misc. Equipments	1 Lot

- Miranda Automation Private Limited
Plot No. R-632,
M. I. D. C., T. T. C. Industrial Area,
Rabale, Thane-Belapur Road
Navi Mumbai - 400701,
Maharashtra.
- MONGA STRAYFIELD PVT. LTD.
plot No. C-4, (RS) 22, MIDC,
BEHIND POST OFFICE, BHOSARI INDL. ESTATE,
Bhosari,
Maharashtra - 411026

14. PROFITABILITY CALCULATIONS:

Sr. No.	Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
A	Gross Sales	1266.6 5	1447.6	1628.5 5	1628.5 5	1628.5 5
	Less:					
1	Raw Materials	339.96 9	388.53 6	437.10 3	437.10 3	437.10 3
2	Packing Material	401.45 7	458.80 8	516.15 9	516.15 9	516.15 9
3	Fuel	70.56	80.64	90.72	90.72	90.72
4	Power	70.56	80.64	90.72	90.72	90.72
5	Manpower	141.46 86	159.60 56	177.74 26	177.74 26	177.74 26
6	Depreciation	49.56	56.64	63.72	63.72	63.72
7	Sundry Expenses	17.5	20	22.5	22.5	22.5
8	Interest on Term Loan	17.185	19.64	22.095	22.095	22.095
9	Interest on WC Loan	7.35	8.4	9.45	9.45	9.45
10	Repairs & Maintenance	14	16	18	18	18
B	Production Cost	1129.6 1	1288.9 1	1448.2 1	1448.2 1	1448.2 1
C	Gross Profit (A-B):	137.04 04	158.69 04	180.34 04	180.34 04	180.34 04
	Taxes @ 30%	41.112 12	47.607 12	54.102 12	54.102 12	54.102 12
	Net Profit	95.928 28	111.08 33	126.23 83	126.23 83	126.23 83

The proposed unit will have the production capacity of 5 MT per day of various types of biscuits such as sweet cream and premier. The unit cost of power is taken at Rs. 8. The

depreciation on building is taken at the rate of 5% whereas for plant and machinery it is at 10%.

The average sales price of Biscuits is taken at the rate of Rs. 105 per kg for proposed project.

15. **BREAKEVEN ANALYSIS:**

Financial Ratios

Sr. No.	Particulars		Rs. In Lacs
1	Net Profit Per Year	sales - COP	2.70
2	Net Profit Ratio:	NP x 100/sales	7.18
3	Rate of Return On Invest.	NP x 100/Invest.	37.01
4	Annual Fixed Cost:		
	Depreciation		70.80
	Interest		35.05
	40% of Wages		72.55
	Insurance		10.00
5	Break Even Point		
	Annual Fixed Cost x100/ Annual Fixed Cost + Profit		59.19

16. **STATUTORY/ GOVERNMENT APPROVALS**

There is statutory requirement of FSSAI license for setting up of food processing industry. Moreover, MSME & GST registration, IEC Code for Export of end products and local authority clearance may be required for Shops and Establishment, for Fire and Safety requirement and registration for ESI, PF and Labour laws may be required if applicable. Entrepreneur may contact State Pollution Control Board where ever it is applicable.

17. **BACKWARD AND FORWARD INTEGRATION**

Forward linkages can be established by introducing ready to eat snack foods and also bread making to cater the same distribution channel. Also after well establishment of the trade name, promoter may think of giving franchise to other entrepreneurs in the country.

18. TRAINING CENTERS/COURSES

For food processing industry training and short term courses are available at Indian Institute of Food Processing Technology, Thanjavur, Tamil Nadu and Central Food Technological Institute, Mysore. 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