

PROTEIN RICH BISCUITS

PRODUCT CODE	: 205801010
QUALITY AND STANDARDS	: PFA Act, 1954 (Mandatory) and BIS Specification (Optional) Protein Enriched Biscuits IS 7487:1986 (first revision)
PRODUCTION CAPACITY	: Quantity : 108 MT (per annum) Value : Rs. 84,24,000
MONTH AND YEAR OF PREPARATION	: March, 2003
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INTRODUCTION

Baking industry occupies an important position among Indian food processing industries with an annual turnover of about Rs. 3000 crores. The spurt in the production of bakery products could be attributed to their advantages over other processed foods. Bakery products are ready to eat, convenient to use and possess satisfactory nutritional quality. India is the second largest producer of biscuits after USA. The biscuit industry in India comprises of organized and unorganized sectors. Bread and Biscuits form the major baked foods accounting for over 80% of total bakery products produced in the country. The quantities of bread and biscuits produced are more or less same, however, value of the biscuits is more than bread. The industry has traditionally been and largely continues to be in the unorganized

sector contributing to over 70% of the total production. Bakery products once considered as sick man's diet, have now become an essential food items of vast majority of population. Though bakery industry in India has been in existence since long, real fillip came only in the later part of the 20th century. The contributing factors were urbanization, resulting in increased demand for ready to eat profiles at reasonable costs etc. The main constituent of bakery products, the refined wheat flour is deficient in lysine and soybean is deficient in sulphur containing amino acids. Thus a combination of these two as ingredients in biscuits/bakery products is a desirable step for not only increasing the protein content, but also for supply of balanced amino acid pattern. The Indian bakery industry can, therefore, explore this aspect for better food value and product quality. The use of soya flours and soya products in bakery products would not

only improve nutritional quality of bakery products, but also increase profit margins of an entrepreneur due to improved product quality.

MARKET POTENTIAL

The per capita consumption of bakery products is about 2.5 Kg. per year as compared to 150 Kg. in other developed countries, indicating greater potential for the industry as compared to the present situation. The bakery units are unevenly spread among States. It is mainly concentrated in the States of Maharashtra, West Bengal, Andhra Pradesh, Karnataka and Uttar Pradesh. Industrially advanced States like Maharashtra and West Bengal have very large number of bakery units. The per capita consumption is very high in industrialized States like Maharashtra and West Bengal. The Biscuits are becoming quite popular in rural areas as well. Nearly 55% of biscuits are consumed by rural sector. The higher consumption of biscuits in rural area could be attributed to its position as a snack, longer shelf life and better taste which is liked by different cross sections of population. There is no marketing problem as every shop is a market for biscuits.

Bakery products still remain the cheapest of the processed ready to eat products in the country. The production of Bakery products has increased from 5.19 lakh tonnes in 1975 to 18.95 lakh tonnes in 1990 recording four-fold increase in 15 years' time. Among the bakery products, biscuits occupy an important place as they contribute over 33% of total products processed. Over 79% of the biscuits are produced by small scale sector consisting of both factory

and non-factory units. The growth rate for bakery products is estimated at an average 9.8% per annum. The demand for bakery products will continue to increase in future. The estimated growth rate of 9.8% is on the lower side considering the present potentiality of bakery products, particularly in rural areas, where about 75% of the population lives. Hence use of soya is beneficial to consumers for nutritional improvement and to entrepreneur for earning more profit. The protein content of biscuits varies from 7-8 percent and supplementation with 30 percent soyaflour adds to the protein content by 50 percent. Encouraging trends in consumption of bakery products by population of lower and middle income groups indicate vast scope for consideration of nutritional enrichment of bakery products. Protein Rich Biscuits can serve as means of providing additional nutrition at affordable cost.

BASIS AND PRESUMPTIONS

1. The Project Profile has been prepared on the basis of single shift of 8 hours. a day and 25 working days in a month at 75% efficiency.
2. It is presumed that during the first year, the capacity utilization will be 70% followed by 85% in the next year and 100% in the subsequent years.
3. The rates indicated for salaries and wages for skilled workers and others are on the basis of the minimum rates in the State of U.P.
4. Interest rate for the fixed and working capital has been taken @ 15% on an average whether

financed by the Bankers or Financial Institutions.

5. The margin money required is the minimum (30% of the total capital investment).
6. The rental value for office, workshop and other covered area has been taken @ Rs. 20/- per sq.mtr.
7. The rates for machinery, equipment and raw materials are those prevailing at the time of preparation of the Project Profile and are likely to vary from place to place and supplier to supplier. When a tailor made project profile is prepared, necessary changes are to be made.
8. The pay back period may be 5 years after the initial gestation period.
9. The gestation period in implementation of the project may be 6 to 9 months which includes making all arrangements, completion of all formalities, market surveys and tie-ups etc.

IMPLEMENTATION SCHEDULE

The implementation of the project includes various jobs/exercises such as procurement of technical know how, transfer of technology, market surveys and tie-ups, preparation of project report, selection of site, registration, financing of project, procurement of machinery and raw materials etc., recruitment of staff, erection/commissioning of machines, trial production and commercial production etc. In order to efficiently and successfully implement the project in the shortest period simultaneous exercises are carried out.

Project implementation will take a period of 8 months from the date of approval of the scheme, Break up of activities with relative time for each activity is shown below.

<i>Activity</i>	<i>Period (Month)</i>
1. Scheme preparation and approval	0-1
2. SSI provisional Registration	1-2
3. Sanction of loan	2-5
4. Clearance from State Pollution Control Board	3-4
5. Placement of order for machinery and delivery	4-5
6. Installation of machines	6-7
7. Power Connection	6-7
8. Trial Run	7-8
9. Commencement of Production	9 onwards

TECHNICAL ASPECTS

Process of Manufacture

The protein rich biscuits can be manufactured after obtaining Raw Materials like maida, starch, soda, salt, colour, soya flour, preservatives, vanaspati, sugar, flavours etc. which are easily available in local markets. The calculated amount of maida, soya flour, starch, Vanaspati, water etc. are mixed and properly kneaded to the desired consistency. The dough is then rolled, cutted, baked, cooled and packed in pouches.

Quality Control and Standards

The PFA Act, 1954 is mandatory and BIS Specifications are optional for Biscuits.

The relevant Bureau of Indian Standards Specification for Protein Enriched Biscuits is IS:7487:1986 (first revision). The specification for Biscuits (third revision) (with the first Amendment) is 1011:1992. The details of specification can be obtained from the Bureau of Indian Standards, Manak Bhawan, 9, Bahadur Shah Zafar Marg, New Delhi-110002.

Production Capacity (per year)

1. Production of Creamed Wafer Biscuits : 108 MT
2. Value of Creamed Wafer Biscuits : Rs. 84,24,000

Motive Power 50 K.W.

Pollution Control

1. This industry may involve pollution to some extent for which State Pollution Control Board has to be approached.
2. Minimum height of shed will be maintained with exhaust fans installed for removing decongestion, proper ventilation, removal of cokes, fumes etc.

Energy Conservation

The following steps may be taken for the conservation of energy:

1. Machinery and equipments' parts, which are revolving and reciprocating should be properly lubricated from time to time with suitable lubricant oil.
2. Lay out of the unit should be designed in such a way that no back tracking of material is there.

3. All electric switches may be turned off, when not required.
4. The entire transmission belt will be tightened before starting the work wherever applicable.
5. As far as possible, Solar Energy and day light will be used keeping all the other lights off.
6. As far as possible inductive load of motor will be reduced and high power factor will be used with the aid of capacitors of appropriate sizes.
7. It is desirable for an oven to have a higher production capacity, a short come-up-time, a higher reliability and energy efficiency (with least thermal radiation) and less maintenance requirement.

FINANCIAL ASPECTS

(A) Fixed Capital

i) Land and Building (rented)	Amount (In Rs.)
On Rent @ Rs 20 per Sq. meter Covered Area 500 Sq. meter	10,000

ii) Machinery and Equipments

Sl. No.	Description	Qty.	Amount (In Rs.)
1.	Automatic continuous Roller cutting machine with Oven size 48" fitted with two heavy duty reduction gearbox, automatic wastage returning system with Electrical Motors with starters complete machinery	1	9,50,000
2.	Flour Shifter automatic screw type vibrator system with automatic lifting system with motor and starters	1	60,000
3.	Suger Grinding Machine (30-50 Kg./Hrs., 2KW)	1	35,000

Sl. No.	Description	Qty.	Amount (In Rs.)
4.	Roll Sheeter size 24" fitted with reduction gear box variable speed, with motor and starters	1	2,30,000
5.	Double action horizontal mixing machine cap. 300 Kg. per batch, automatic tilting with electrical motor and starters	1	1,60,000
6.	Cooling conveyor size 24" working length 100' total length 35' with motor and starters	1	2,50,000
7.	Oil spraying machine for salted biscuit belt size 24" with electrical Motor and starters	1	65,000
8.	Turn table working between oven and conveyor fitted with motor and starters	1	1,20,000
9.	Extra Brass roller for rotary cutting machine and Roller cutting machine	1	10,000
10.	Syrup Machine with one motor and starters SS	1	85,000
11.	Biscuit Grinder with motor 5 HP and starters	1	25,000
12.	Working table with S.S./ Aluminium top	2	5,000
13.	Weighing Balance platform type	1	5,000
14.	Aluminium vessels, Mats, cups, mugs, ladle, spoons, gloves, etc.	-	10,000
	<i>Electrification and Installation Charges @ 10% of Cost of Plant and Machinery</i>	-	2,00,000
	<i>Cost of Office Equipment and other production equipment etc.</i>	-	40,000
	Total		22,50,000
iii)	Pre-operative Expenses		20,000
	Total Fixed Capital		22,70,000

(B) Working Capital (per month)

(i) Staff and Labour

Sl. No.	Designation	No.	Salary (In Rs.)	Total (In Rs.)
<i>(a) Administrative and Supervisory</i>				
i)	Production Manager	1	5000	5,000
ii)	Supervisor/Store-keeper	1	4000	4,000
iii)	Accountant	1	3000	3,000
iv)	Salesman	3	3000	9,000
v)	Peon/Watchman	1	2000	2,000
vi)	Sweeper	1	1500	1,500
<i>(b) Technical: Skilled and Unskilled</i>				
i)	Skilled Workers	3	3000	9,000
ii)	Semi-skilled Workers	2	2500	5,000
iii)	Helper	4	2000	8,000
	Total			46,500
	<i>Perquisites @ 15%</i>			<i>6,975</i>
	Total			53,475

(ii) Raw Material

Sl. No.	Description	Qty.	Rate (In Rs.)	Amount (In Rs.)
i)	Wheat Flour (Maida)	6000 Kg.	8 per Kg.	48,000
ii)	Maida starch, vegetable fat, salt, soya flour, soda, colours, preservatives etc.	3000 Kg.		2,43,000
iii)	Packaging material	L.S.		1,25,000
	Total			4,16,000

(iii) Utilities

	Amount (In Rs.)
Electricity	10,000
Water	2,000
Total	12,000

(iv) Other Contingent Expenses

	Amount (In Rs.)
1 Rent	10,000
2 Postage and Stationery	500
3 Advertisement	2,000
4 Telephone	500

Other Contingent Expenses	Amount (In Rs.)
5 Repair and Maintenance	500
6 Transportation	1,000
7 Consumable	1,000
8 Sales Expenses	3,000
9 Insurance	500
10 Misc. Expenses	1,000
Total	20,000

(v) Total Recurring Expenditure	Amount (In Rs.)
1) Salary and Wages	53,475
2) Raw Material	4,16,000
3) Utilities	12,000
4) Other Contingent Expenses	20,000
Total	5,01,475

(vi) Working Capital for 3 months Rs.15,04,425

C. Total Capital Investment

	Amount (In Rs.)
Fixed Capital	22,70,000
Working Capital (for 3 months)	15,04,425
Total	37,74,425

MACHINERY UTILIZATION

It is expected that during first year machine utilization will be 70% and during second year 85% and 100% in subsequent years.

FINANCIAL ANALYSIS

I Cost of Production (per annum)	Amount (In Rs.)
(a) Total Recurring Cost	60,17,700
(b) Depreciation on Machinery and Equipment @ 10%	2,20,000
(c) Depreciation on Office Equipments and Furniture @ 20%	8,000

Cost of Production (per annum)	Amount (In Rs.)
(d) Interest on Total Capital Investment @ 15%	5,66,164
Total	68,11,864
Say	6,81,2000

2. Turn-over (per annum)

Sl. No.	Description	Qty. (Kg.)	Rate (per Kg.)	Total (In Rs.)
(i)	Biscuits Salty and Sweet	9000	120	10,80,000
	<i>Less sales expenses@ 35%</i>			<i>3,78,000</i>
	Net Turn-over (per month)			7,02,000
	Turnover (per year)			84,24,000

3. Net Profit (per annum) (before Income Tax)
(Sales–Cost of Production) 16,12,000

4. Net Profit Ratio

$$= \frac{\text{Net profit} \times 100}{\text{Turn Over}}$$

$$= \frac{1612000 \times 100}{84,24,000}$$

$$= 19\%$$

5. Rate of Return

$$= \frac{\text{Net Profit} \times 100}{\text{Total investment}}$$

$$= \frac{1612000 \times 100}{3774425}$$

$$= 43\%$$

6. Break-even Point

Fixed Cost (per annum)	Amount (In Rs.)
(a) Total Depreciation (on m/c. and equipment, dies, tools, furniture)	2,20,000
(b) Rent	1,20,000
(c) Interest on borrowing (Total Investment)	5,66,164
(d) Insurance	6,000

Fixed Cost (per annum)	Amount (In Rs.)
(e) 40% of salary	2,56,680
(f) 40% of utilities	57,600
(g) 40% of other contingent expenses (excluding rent and insurance)	45,600
Total	12,72,044

B.E.P.

$$= \frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Profit}}$$

$$= \frac{1272044 \times 100}{1272044 + 1612000}$$

$$= 44\%$$

Addresses of Machinery and Equipment Suppliers

- 1 M/s Sembhi Engineers
4-5, New Colony,
Opp. KMV College,
Jalandhar-144 004
- 2 M/s Reliance Engineering Works
K.No. 4065, Sec.-46-D,
Chandigarh-160 047
- 3 M/s Authentic Designer
C-112, Sector-10,
Noida-201 301 (U.P)
- 4 M/s Ghaziabad Printing and
Packing Industry Pvt. Ltd.
Opp. Ganesh Tent House,
Near DPS, Meerut Road,
Ghaziabad (U.P.)

- 5 M/s Aroras Box and Cartons
Pvt Ltd.
39th K. M., Delhi-Jaipur Road,
(N.H.No. 8),
Gurgaon-122 001 (Haryana)
- 6 M/s Jain Packaging Products
33, Sarai Pipal Thala,
Behind Mangat Ram Dal Mill,
Subzi Mandi,
Azadpur,
Delhi-110033
- 7 M/s United Packaging
19/21, Shakti Nagar,
Delhi-110 007
- 8 M/s Rajat Electronics
1309, A-5, First Floor,
Pan Mandi,
Sadar Bazar,
Delhi-110006
- 9 M/s R.D. Singal and Co.
A-81/2, Wazirpur Industrial Area,
Delhi-110 052
- 10 M/s Ambica Packers and Printers
2687, Kinari Bazar,
Dariba Kalan,
Delhi-110 006
- 11 M/s Control Print (India) Ltd.
A-27, Swasthya Vihar,
Vikas Marg,
Delhi-110 092

Raw Material Suppliers

Local dealers.