

PROJECT PROFILE

SOYABEAN NUGGET

1. INTRODUCTION

Soyabeans are rich in proteins and are becoming popular day-by-day. States like MP, UP, Maharashtra, Gujarat etc. are producing substantial quantities with MP being the largest producer. Bulk of the soyabeans are processed by solvent extraction plants for oil, leaving large quantities of defatted soya flakes. These flakes or de-oiled soya cake can be converted into nuggets or chunks by extrusion.

2. OBJECTIVES

The objective of the profiles is to encourage and assist prospective entrepreneurs in MSME sector in and guiding making them aware of the opportunities of this sector. It is also being developed by the Directorate of the Food Processing Industries, Government of West Bengal to help entrepreneurs with knowledge about raw materials availability, knowledge of market, source of technology and plant and machinery suppliers. M/s ITV Agro & Food Technologies Pvt. Ltd., New Delhi has helped in developing the project profile.

3. RAW MATERIAL AVAILABILITY

The most critical material will be good quality de-oiled soya flour and the annual requirement shall be 600 tonnes for which adequate prior arrangements are advisable. Rice and baking powder shall be required in small quantity. HDPE bags and barrels shall be the packing materials.

4. MARKET OPPORTUNITIES

Soya products have become very popular not only amongst the health conscious people but also with others as they are easy to digest and rich in proteins. Products like edible oil, paneer, flour, milk nuggets or chunks etc made from soybean are gaining popularity. Texturised soya products like nuggets or chunks are used in large quantities along with other vegetables while making curries. Thus restaurants, caterers, clubs and canteens and ready to eat vegetable manufacturers are the bulk consumers. There are good export possibilities as well but that market can be explored once the quality of the product is well-established.

5. PROJECT DESCRIPTION

a) Product & Its uses

Texturised soya products have become popular. They are used along with other vegetables for making curries etc. They are low cost but protein rich substitutes of cheese, paneer, meat and fish.

b) Capacity

The proposed capacity of the plant is to process 600 MT / annum of soya flour.

c) Manufacturing process

It is imperative to have good quality solvent extracted flour for processing with the Nitrogen solubility index in the range of 45% to 50%. Other parameters are 7.5 % to 8.5% moisture, 53 to 54% proteins, less than 10 % fat, 2 to 3% fiber and yellow to light brown colour . Extracted flour with these characteristics is suitable for extrusion. Extrusion technology is based on high temperature, short time processing. Rice and baking powder in a small quantity are mixed with the de-oiled soya flour or cake. The chunks are dried after extrusion. The chunks can also be converted into flakes or granules.

6. PROJECT COMPONENTS & COST

a) *Land & Building*

A plot of around 300 sq. mtrs. with constructed area of 150 sq.mtrs. can accommodate production area, godown and a small factory office. Land may cost Rs. 1.50 lacs whereas cost of construction is estimated to be Rs. 9.00 lacs.

b) *Plant & Machinery*

Rated annual production capacity of 600 tons and 300 working days would need the following equipments:

Item	Qty	Price (Rs. in lacs)
Mixing -cum grinding machine with 5 HP motor and other accessories	1	3.20
Soya Nugget Extrusion Plant with 30 HP motor and complete set of screws, barrel and suitable dies	1	30.50
Vibrating sieve with 3 HP motor	1	1.30
200 kg. capacity platform type weighing scale	1	0.60
Bag sewing machine	1	0.30
	Total	35.90

c) *Miscellaneous Assets*

Other assets like furniture & fixtures, storage facilities, plastic tubs, office equipments etc. would cost Rs. 2.70 lacs.

d) *Utilities*

Total power requirement shall be 60 HP whereas daily water requirement shall be 20,000 ltrs. The cost of utilities will be Rs. 4.60 lacs.

e) *Prel. & Pre Operative Expenses*

Expenses like registration and establishment charges, travelling, interest during implementation, trial runs etc. are estimated to be Rs. 3.20 lacs

f) *Working Capital Assessment*

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Raw and packing Material	½ month	30%	2.76	1.93	0.83
Stock of Finished Goods	½ month	25%	3.92	2.94	0.98
Receivable	½ month	25%	4.50	3.38	1.12
Total			11.18	8.25	2.93

g) *Project cost & Means of finance*

Item	Amount (Rs. in lacs)
Land and Buildings	10.50
Plant and Machinery	35.90
Miscellaneous Assets	2.70
P & P Expenses	3.20
Contingencies @ 10% on building and plant & machinery	4.50
Working capital margin	2.93
Total	59.73
Means of Finance	
Promoters' contribution	23.89
Term loan from Bank/ FI	35.84
Total	59.73
Debt Equity Ratio	1.5:1
Promoters contribution	40%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects ,subject to certain terms and conditions.

7) PROJECTED PROFITABILITY

a) *Production Capacity*

The plant will produce 600 MT/ annum of soyabean nugget

b) *Sales Revenue at 100%*

Assuming selling price of Rs. 35,000/- per ton, the annual sales at 100% shall be Rs. 210.00 lacs for 600 ton of finished products.

c) *Raw Material Required at 100%*

Product	Qty (Tons)	Rate (Rs. / Ton)	Value(Rs. in lacs)
De-oiled Soya Flour	600	15,000	90.00
Rice	5	15,000	7.50
Baking Powder	1	2,00,000	2.00
Packing Material	600	3,000	18.00
Total			110.75

d) *Projected Profitability*

(Rs. in lacs)

S. No.	Particulars	1 st year	2 nd year
A.	Installed capacity	600 Tonnes	
	Capacity Utilisation	60%	75%
	Sales Income	126.00	157.50
B.	Cost of Production		

	Raw & Packing Materials	66.45	83.00
	Utilities	2.76	3.45
	Salaries	8.52	9.37
	Stores and Spares	1.80	2.25
	Repairs and Maintenance	2.10	2.62
	Selling Expenses @ 15%	10.80	13.50
	Administrative Expenses	1.80	2.25
	Total	94.23	116.44
C.	Profit before Interest & Depreciation	31.77	41.06
	Interest on Term Loan	3.58	2.88
	Interest on Working Capital	0.99	1.23
	Depreciation.	4.50	4.05
	Profit before Tax	22.70	32.90
	Income-tax @ 20%	4.54	6.58
	Profit after tax	18.16	26.32
	Cash Accruals	22.60	30.37
	Repayment of Term Loan	Nil	7.00

e) Break Even Point Analysis

S. No.	Particulars	Amount (Rs. in lacs)	
(A)	Sales		157.50
(B)	Variable Costs		
	Raw & Packing Material	83.00	
	Utilities(70%)	2.41	
	Salaries (60%)	6.56	
	Stores and Spares	2.62	
	Selling Exps (70%)	9.45	
	Admn Expenses (50%)	1.12	

	Interest on WC	1.23	106.35
(C)	Contribution (A) - (B)		51.15
(D)	Fixed Costs		14.15
(E)	Break Even Point		28%

f) Debt Service Coverage Ratio (DSCR) (Rs. in lacs)

Particulars	1 st year	2 nd year	3 rd year
Cash Accruals	22.60	30.37	32.40
Interest on TL	3.58	2.88	2.20
Total (A)	26.18	33.25	34.60
Interest on TL	3.58	2.88	2.20
Repayment of TL	Nil	7.00	7.00
Total (B)	3.58	9.88	9.20
DSCR (A) / (B)	7.31	3.36	3.76
Average DSCR	4.81		

g) Internal Rate of Return (IRR)

Cost of the project is Rs. 59.73 lacs

(Rs. in lacs)

Year	Cash Accruals	24%	32%
1	22.60	18.08	17.13
2	30.37	19.74	17.43
3	32.40	16.84	14.09
4	32.40	13.60	10.65
Total		68.31	59.30

The IRR is around 32%

h) Manpower requirement

Particulars	Nos.	Monthly	Total Monthly Salary (Rs.)
Skilled workers	1	8,000	8,000
Semi Skilled Workers	2	7,500	15,000
Helpers	8	5,000	40,000
Salesman	1	8,000	8,000
		Total	71,000/-

8. ASSUMPTIONS

- The plant will work for 300 days in a year. :
- The operating capacity is 60% , 75%, 90 % during 1st year , 2nd year and 3rd year.
- The interest on term loan is taken at 10% per annum and on working capital it is 12% per annum.
- Price of raw material and selling price of finished products is taken at Rs. 15,000 / ton and Rs. 35,000 respectively.

9. SOURCES OF TECHNOLOGY

CFTRI, Mysore, has successfully developed the technical know-how for the product. BIS has laid down the quality standard. The compliance under FSSAI act is a must.

10. PLANT & MACHINERY SUPPLIERS

1. Gurunanak Engg. Works (P) Ltd.
C-33, Sector - 88, Phase - II, Gautam Budh Nagar (UP)
Ph. : 9810378448 / 120-243674
2. Kailash Engg. Works
H1-81, Napasar RIICO Industrial Area,
Bikaner (Rajasthan) Ph. 151-2762534
3. Pagariya Food Products P. Ltd.
15/1, 3rd cross, Kasturbanagar,
Mysore Road, Bangalore - 560026 Ph. 09953361350
[www. indiamart.com](http://www.indiamart.com)