

SOYA SAUCE



1.0 INTRODUCTION

Soya bean is a leguminous crop and is rich in proteins. Many value-added products are made from it like milk, paneer, cheese and sauce. Soya products are increasingly becoming popular especially amongst health-conscious people. Soya sauce is used as a taste enhancer as it has a typical bitter-sour and sweet taste as well as flavour. The preferred locations are Gujarat, MP, Maharashtra etc. But this note considers Maharashtra as the prospective location since market for the soya sauce is consistently increasing in the state. Amravati district of Maharashtra cultivates substantial quantities of soya beans with around 30,000 hectare area under this crop. Therefore, location of the proposed plant has to be selected carefully.

2.0 PRODUCTS

Soya sauce is used as taste and flavour enhancer with certain non-vegetarian, Chinese and western food varieties. It is prepared from de-fatted soya bean flour by hydrolysis process. It is also a rich source of proteins.

2.1 Compliance under the PFA Act is mandatory.

3.0 MARKET POTENTIAL

3.1 Demand and Supply

Market for soya-based products including soya sauce is in urban and semi-urban areas and while selecting the location of the plant, this aspect has to be kept in mind. Domestic use of soya sauce is limited to very few Indian households but restaurants, clubs, caterers, star hotels are major consumers. Since regular use of soya sauce is still limited to the top-end of the society, the product has to be sold through departmental stores, shopping malls and super markets.

3.2 Marketing Strategy

Marketing shall be very crucial and hence before finalising the project, a detailed market survey of the region has to be undertaken. Thrust has to be given on bulk packing rather than consumer packs so that institutional market can be captured. It is not advisable to finalise the capacity and location of the project without a market survey.

4.0 MANUFACTURING PROCESS

The manufacturing process is simple. De-fatted soya flour is processed by using hydrolysis process. Flour and water along with other ingredients like salt, baking soda, vinegar, preservatives etc. are mixed homogenously to form a semi-liquid or paste-type mixture and it is passed through filter sieves to remove impurities. This mixture is then taken to SS neutralisation tanks and kept for about 2 hours before packing.

5.0 CAPITAL INPUTS

5.1 Land and Building

A plot of land measuring about 150 sq.mtrs. with constructed area of 90 sq.mtrs. is adequate. Land may cost Rs.45,000/- whereas cost of civil work is estimated to be Rs.1.80 lacs. Shop-floor area may occupy about 60 sq.mtrs and balance area can be utilised for storage and packing purposes.

5.2 Machinery

Rated capacity of the plant has to be decided after obtaining market survey. But keeping in mind the economic viability, it is suggested to have a rated capacity of 150 kgs. per day on two shifts. Considering 300 working days every year, the annual rated capacity would be 45,000 kgs. or 45 tonnes. This would require following equipments:

Item	Qty.	Total Cost (Rs.)
SS tanks with filter sieves of 100 ltrs. capacity	2	40,000
SS Collection and neutralisation tanks of 50 ltrs. capacity	4	50,000
Bottle Washing and Filling Machine	1	50,000
Weighing Scales	2	15,000
	Total	1,55,000

5.3 Miscellaneous Assets

Some other assets like SS utensils, plastic tubs, furniture and fixtures, electricals, storage facilities, working tables, etc. shall be required for which a provision of Rs. 60,000/- is suggested.

5.4 Utilities

Power requirement shall be 30 HP whereas daily water requirement will be about 1000 ltrs.

5.5 Raw Material

The most important raw material will be de-fatted soya flour. The annual requirement even at 100% capacity will not be more than 23,000 kgs. Generally, the proportion of flour and water is 1:1. Considering the soya bean crop of Maharashtra, this is certainly not a large quantity. Other ingredients like salt, baking soda, vinegar, preservatives etc. could be procured easily as the requirement will not be much. Packing materials like 200 gms and 1 & 2 kgs. capacity glass bottles, labels, card board or corrugated boxes, box strapping etc. shall be required. Since proportion of consumer and bulk packing will be decided after market survey, it is assumed that average packing cost would be Rs.12,000/- per ton.

6.0 MANPOWER REQUIREMENTS

Particulars	Nos.	Monthly Salary (Rs.)	Total Monthly Salary (Rs.)
Skilled-workers	2	2,250	4,500
Semi-skilled Workers	2	1,500	3,000
Helpers	4	1,000	4,000
Salesman	1	2,500	2,500
		Total	14,000

7.0 TENTATIVE IMPLEMENTATION SCHEDULE

Activity	Period (in months)
Application and sanction of loan	2
Site selection and commencement of civil work	1
Completion of civil work and placement of orders for machinery	4
Erection, installation and trial runs	1

8.0 DETAILS OF THE PROPOSED PROJECT

8.1 Land and Building

Particulars	Area (Sq.Mtrs)	Cost (Rs.)
Land	150	45,000
Building	90	1,80,000

8.2 Machinery

As spelt out earlier, a provision of Rs.1.55 lacs is adequate for the required machines.

8.3 Miscellaneous Assets

A provision of Rs. 60,000/- is made under this head as explained earlier.

8.4 Preliminary & Pre-operative Expenses

There are many pre-production expenses like registration, establishment & administrative charges, interest during implementation, trial run expenses etc. In this case, a detailed market assessment is also required. Hence, a total provision of Rs. 70,000/- is made.

8.5 Working Capital Requirement

It is assumed that the plant will be operated at 60% of its rated production capacity in the first year. To achieve this target, following working capital will be required:

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Raw and Packing Material	½ Month	30%	0.35	0.25	0.10
Stock of Finished Goods	½ Month	25%	0.45	0.35	0.10
Receivables	1 Month	25%	1.70	1.25	0.45
Working Expenses	1 Month	100%	0.30	--	0.30
	Total	2.80	1.85	0.95	

8.6 Cost of the Project and Means of Financing

(Rs. in lacs)

Item	Amount
Land and Building	2.25
Plant and Machinery	1.55
Miscellaneous Assets	0.60
P&P Expenses	0.70
Contingencies @ 10% on Land & Building, Machinery and Misc. Assets	0.45
Working Capital Margin	0.95
Total	6.50
Means of Finance	
Promoters' Contribution	2.00
Term Loan from Bank/FI	4.50
Total	6.50
Debt Equity Ratio	2.25 : 1
Promoters' Contribution	31%

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.

9.0 PROFITABILITY CALCULATIONS

9.1 Production Capacity and Build-up

As against the installed capacity of 45,000 kgs. per year, the actual capacity utilisation is assumed to be 60% and 75% respectively during first two years.

9.2 Sales Revenue at 100%

Selling price would be different for consumer packs and bulk packs. In case of consumer packs, it could be Rs. 100-110 per kg. whereas in case of large packing, it could be in the range of Rs. 60-75 per kg. In the absence of exact sales-mix (which would be decided after market survey), average realisation per kg. is taken as Rs. 75/-. In other words, annual sales revenue at 100% would be Rs. 33.75 lacs.

9.3 Raw Materials Required at 100%

(Rs. in lacs)

Product	Qty. (Tonnes)	Rate/Ton (Rs.)	Value
Defatted Soya Flour	23	25,000	5.75
Salt, Baking Soda, Vinegar, Preservatives, etc.	--	--	3.50
Packing Material @ Rs. 12,000/Ton	45	12,000	5.40
		Total	14.65

9.4 Utilities

Requirement of utilities is already discussed. Annual cost at 100% is expected to be Rs. 1.20 lacs.

9.5 Selling Expenses

Marketing is not going to be easy and the product shall have to be pushed by offering attractive commission and incentives to retailers. Proper advertisement campaign has to be launched in local media, TV channels, by putting up hoardings etc. Hence, a provision of 20% of sales value is made every year by way of selling expenses.

9.6 Interest

Interest on term loan is calculated @ 12% per annum assuming complete repayment in 4 years inclusive of a moratorium period of 1 year. Interest on working capital from bank is calculated @ 14% per annum.

9.7 Depreciation

It is calculated @ 10% on building and 20% on machinery and miscellaneous assets on WDV basis.

10.0 PROJECTED PROFITABILITY

(Rs. in lacs)

No.	Particulars	1st Year	2nd Year
A	Installed Capacity	-- 45 Tonnes --	
	Capacity Utilisation	60%	75%
	Sales Realisation	20.25	25.30
B	Cost of Production		
	Raw and Packing Materials	8.80	11.00
	Utilities	0.72	0.90
	Salaries	1.68	1.90
	Stores and Spares	0.42	0.54
	Repairs and Maintenance	0.60	0.72
	Selling Expenses @ 20%	4.05	5.06
	Administrative Expenses	0.72	0.84
	Total	16.99	20.96
C	Profit before Interest & Depreciation	3.26	4.34
	Interest on Term Loan	0.51	0.34
	Interest on Working Capital	0.26	0.30
	Depreciation	0.58	0.48
	Net Profit	1.91	3.22
	Income-tax @ 20%	0.38	0.65
	Profit after Tax	1.53	2.57
	Cash Accruals	2.11	3.05
	Repayment of Term Loan	--	1.40

11.0 BREAK-EVEN ANALYSIS

(Rs. in lacs)

No	Particulars	Amount	
[A]	Sales		20.25
[B]	Variable Costs		
	Raw & Packing Material	8.80	
	Utilities (60%)	0.42	
	Salaries (60%)	1.02	
	Stores and Spares	0.42	
	Selling Expenses (60%)	2.43	
	Admn Expenses (50%)	0.36	
	Interest on WC	0.26	13.71
[C]	Contribution [A] - [B]		6.54
[D]	Fixed Cost		4.13
[E]	Break-Even Point [D] ÷ [C]		63%

12.0 [A] LEVERAGES

Financial Leverage

= EBIT/EBT

= 2.68 ÷ 1.91

= 1.40

Operating Leverage

= Contribution/EBT

= 6.54 ÷ 1.91

= 3.42

Degree of Total Leverage

= FL/OL

= 1.40 ÷ 3.42

= 0.41

[B] Debt Service Coverage Ratio (DSCR)

(Rs. in lacs)

Particulars	1st Yr	2nd Yr	3rd Yr	4th Yr
Cash Accruals	2.11	3.05	3.15	3.29
Interest on TL	0.51	0.34	0.23	0.10
Total [A]	2.62	3.39	3.38	3.39
Interest on TL	0.51	0.34	0.23	0.10
Repayment of TL	--	1.50	1.50	1.50
Total [B]	0.51	1.84	1.73	1.60
DSCR [A] ÷ [B]	5.14	1.84	1.95	2.11
Average DSCR	----- 2.76 -----			

[C] Internal Rate of Return (IRR)

Cost of the project is Rs. 6.50 lacs.

(Rs. in lacs)

Year	Cash Accruals	24%	28%	32%
1	2.11	1.70	1.65	1.60
2	3.05	1.98	1.86	1.75
3	3.15	1.65	1.50	1.37
4	3.29	1.39	1.23	1.08
	11.60	6.72	6.24	5.80

The IRR is around 26%.

Some of the machinery and packing material suppliers are

1. Somani International Corpn., 1510, Maker Chambers V, Nariman Point, Mumbai-400021
2. G R Engg. Works Pvt Ltd, Worli Sea Face, Mumbai 400 018
3. Sujata Enterprises, Laxmi Rd., Pune 411 030
4. Deepak Plastics Pvt. Ltd., 24, MIDC Estate, Chinchwad, Pune