

Model Project on Fish and Prawn Pickle

Submitted to - Directorate of Food Processing,
Government of West Bengal



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PROJECT PROFILE OF FISH AND PRAWNS PICKLE

1.0 INTRODUCTION

India is the second largest aquaculture producer of the world with production of about 82 lakh tonnes. There is considerable scope for marine exports through value addition.

Fish/prawns are highly perishable in nature. It is necessary to preserve them into self-stable value added product. Considering the market potential and ease of manufacturing, pickling process is the best opted method. Fish/ prawn pickle prepared under hygienic condition with salt, spices and preservative has a shelf life to 8-10 month. The fish or prawns pickles are excellent table enricher for non-vegetarians.

2.0 OBJECTIVES

The major objectives of the project profile are listed below:

- Increase shelf life of prawn and fish by pickling process.
- Make the marine products available in different part of the country.

3.0 RAW MATERIAL AVAILABILITY

West Bengal has long coast line of 158 km from where annual production of inland and marine fish is about 5.68 lakhs tonnes. More than 40 species of commercial inland and marine fish are found in West Bengal. The sea fish likes Pomfret, Mackerel, Prawn; Tuna etc. are ideally suitable for making fish pickles.

4.0 MARKET OPPORTUNITIES

Fisheries and fish processing industry play a dynamic role in Indian economy. Fish products contribute a major share to our foreign earnings. Like vegetable pickles, fish/prawns pickles also gained popularity in recent past. Households, hotels, restaurants, canteens etc. are few potential customers of fish pickles. In addition, it is necessary to have an authentic traditional taste to product for the market acceptability and success.

Marine products have vast demand in world market. The country exports around 4 lakhs tonnes of processed seafood annually. The US market is an important destination for value-added seafood exports. Shrimp and fish pickle ranked top among the most imported value added sea foods from India.

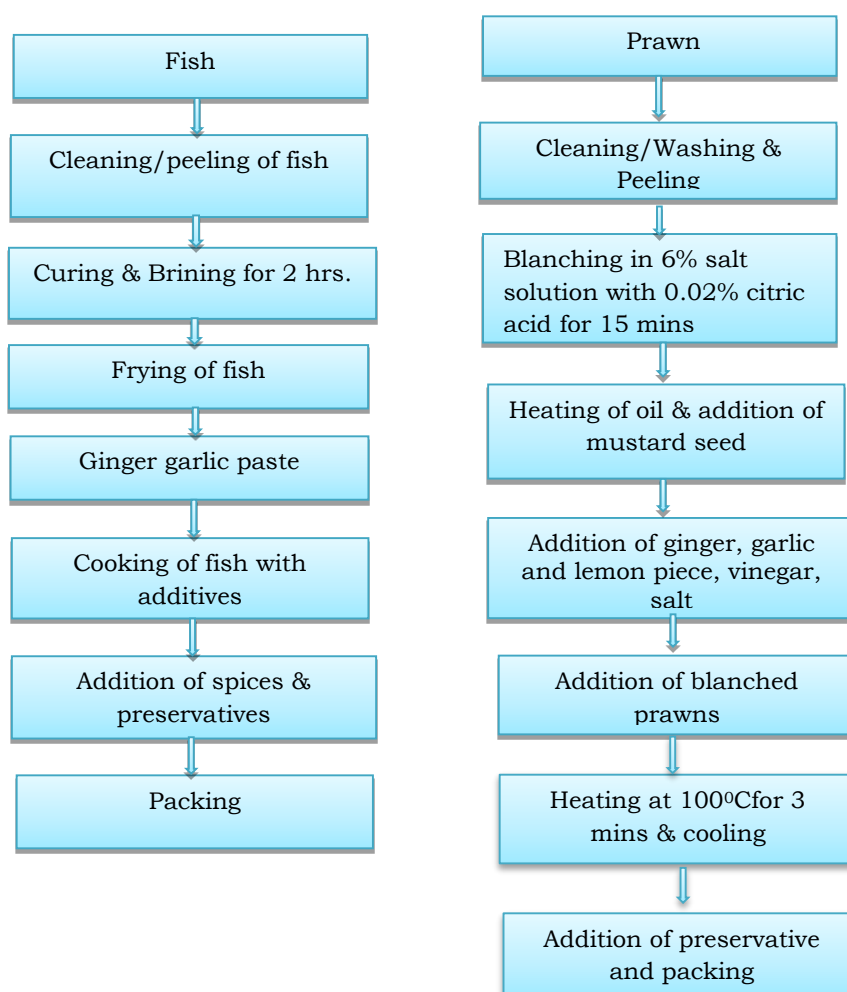
5.0 PROJECT DESCRIPTION

5.1 Demand and Supply

Fresh fish are available largely near to the coastal areas, so the processed food like pickles have high demand at other part of the country. There is a good scope for fish/prawns pickles in the domestic market. Except a few brands, the entire pickle market is controlled by the local manufactures.

5.2 Manufacturing process with flow chart

Separate method for manufacturing of fish and prawn pickle are given in flowchart below:



- **Cleaning** - Removal of dirt and unwanted material.
- **Curing** - Cleaned pieces of fish are mixed with salt, chilli powder, turmeric and kept for 2 hours.
- **Frying** - Pieces are fried in edible oil till they are brown in colour.
- **Cooking with additives** - Fish is cooked after addition of ginger garlic paste, salt, vinegar, turmeric and chilli powder till vinegar is absorbed in the fish.
- **Addition of spices** - After cooling, ground spices and preservatives are added and pickle is packed in air tight bottles.

6.0 PROJECT COMPONENTS

6.1 Building

The unit can be set up in an owned or rented building. For this project, we have rented building. About 500 sq. meter of shad is required to set up unit of fish/prawn pickle.

6.2 Plant and Machinery

Plant and Machinery list				
S. No	Name of Machinery	Quantity in No.	Cost Per Unit	Price In Rs
1	Bottle Washing Machine	1	55000	55000
2	Pillar Proof cap sealing, Table model with automatic sealing and threading option	1	50000	50000
3	Counter scale balance of 25 Kg Capacity	3	10000	30000
4	Frying Pan, Wash basin, Storage vessels, ladles, Mugs etc.-Set	1	45000	45000
5	Working Table with aluminum top	3	10000	30000
6	Stainless steel, knives trays and miscellaneous items.-Set	1	15000	15000
7	Pulverize grinder	1	4500	4500
8	Weighing machine (Platform type)	1	5000	5000
	Subtotal			234500
	Transportation, Erection, VAT, Excise duty etc.			0.37
	Total Cost of Plant and Machinery (Rs. in Lakhs)			2.71

6.3 Miscellaneous Fixed Assets

Cost of office furniture and other infrastructure, telephone installation, electrical infrastructure is considered under miscellaneous fixed assets. A provision of Rs. 75000/- is needed to take care of above expenditure.

6.4 Preliminary Preoperative Expenses

An amount of Rs.50000/- will be required to pay preliminary and preoperative expenses like interest during construction period, registration, travelling expenses etc.

6.5 Contingency

Contingency charges are considered as 2 % of cost of project excluding pre-operative expenses and land cost.

6.6 Margin money for working capital

Margin money for working capital is considered for one cycle in the project cost while calculating project components.

7.0 PROJECT COST

S. No.	Particulars	Amount (Rs. In Lakhs)
1	Plant & Machinery	2.71
2	Miscellaneous Fixed Assets	0.75
3	Margin Money for working Capital	1.08
4	Preliminary & Preoperative Expenses	0.50
5	Contingency	0.07
Total Project Cost in Lakh		5.11

8.0 MEAN OF FINANCE

The project is proposed to be financed with a debt equity ratio 3:1 of and the means of finance are as follows:

S. No.	Source of Finance	Amount (Rs. In Lakhs)
1	Equity	1.28
2	Term Loan from Bank	3.84

9.0 WORKING CAPITAL ASSESMENT

Working capital assessment is given as under. Rupees in Lakh

Working Capital Assessment				
Particulars	No: of days	Yr. 1	Yr. 2	Yr. 3
Raw material	2	0.10	0.20	0.23
Work In Progress (WIP)	10	0.56	1.12	1.26
Finished Goods	30	1.68	3.37	3.79
Debtors	30	1.98	3.96	4.44
Total		4.32	8.65	9.72
Creditors		0	0	0
Total		0	0	0
Working Capital Gap (WCG)		4.32	8.65	9.72
Margin	25%	1.08	2.16	2.43
Maximum Permissible Bank Finance (MPBF)		3.24	6.49	7.29
Interest	14%	0.45	0.91	1.02

10.0 MANPOWER REQUIREMENT

Staff Category	No of Staff	Salary in Rs. /Month	Total in INR Lakh
Manager cum technologist	1	15000.00	1.80
Clark cum Store keeper	1	5500.00	0.66
Semi-Skilled workers	5	4500.00	2.70
Choukidar cum Peon	1	5000.00	0.60
Total			5.76

11.0 PROJECT PROFITABILITY

11.1 Installed Capacity and Capacity Utilization

The installed capacity of the plant is 60 MT per year. The capacity utilisation of 40%, 80% and 90% has been considered during first, second and third year onwards respectively.

11.2 Yield and Production

Upon 90% capacity utilization around 25.10 MT of pickle would be produced in one year, as per below mentioned details.

Products	Capacity In MT
Prawn fish	12.55
Fish Pickle	12.55
Total Production at 90% CU	25.10

11.3 Sales Revenue

S. No.	Products	Price in Rupees /MT
1	Prawn Pickle	230000
2	Fish Pickle	152000

11.4 Profit Calculation

Particulars		Details				
Installed Capacity		60 MT				
Years		1	2	3	4	5
Capacity utilization (%)		40	80	90	90	90
Capacity Utilization (in MT)		11.56	22.32	25.11	25.11	25.11
Income		Amount (Rs. In lakhs)				
1	Prawn Pickle	12.83	25.67	28.88	28.88	28.88
2	Fish Pickle	8.48	16.96	19.08	19.08	19.08
Total income		21.32	42.63	47.96	47.96	47.96
Total expenditure		19.93	39.83	44.71	44.78	44.86
PBDIT		1.39	2.80	3.25	3.18	3.10
Depreciation		0.49	0.49	0.42	0.36	0.31
Interest on working capital		0.46	0.46	0.38	0.31	0.23
Interest on term loan		0.45	0.91	1.02	1.02	1.02
Intangible assets written off		0.00	0.24	0.24	0.24	0.24
Profit after depreciation and interest		-0.02	0.70	1.18	1.25	1.30
Tax @ 36%		0.00	0.25	0.43	0.45	0.47
PADIT		-0.02	0.45	0.76	0.80	0.83
Surplus available for repayment		0.93	1.40	1.56	1.47	1.37
Cash Accruals		0.47	0.94	1.18	1.16	1.14

12.0 FINANCIAL PARAMETERS

The statement of cash flow shows flow of cash in and out of the business. It is useful in determining short-term liability of a company, particularly its ability to pay bills. Cash inflow means the source of cash i.e. equity, loan from bank and the cash accruals from the business. Cash outflow is a sum of cash required for the applications like increase in fixed assets, for repayment of term loan, preoperative expenses and cash required for the payment of dividend.

Particulars	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year
Cash Inflow	5.59	0.94	1.18	1.16	1.14
Cash outflow	5.11	0.64	0.64	0.66	0.66
Opening Balance	0	0.47	0.77	1.31	1.81
Surplus	0.47	0.3	0.54	0.49	0.48
Closing Balance	0.47	0.77	1.31	1.81	2.28

12.1 Break Even Analysis

Particulars (Rs. In Lakhs)	Year 1	Year 2	Year 3	Year 4	Year 5
Sales Revenue	21.32	42.63	47.96	47.96	47.96
Total Variable Cost	18.04	34.94	39.22	39.28	39.35
Contribution	3.27	7.69	8.74	8.68	8.61
Total Fixed Cost	2.35	5.35	5.87	5.79	5.71
Break Even Point (%)	71.68	69.53	67.13	66.74	66.36

The unit is expected to break even at approximately 71.8% capacity utilisation during first year.

12.2 Debt Service Coverage Ratio (DSCR)

DSCR	Year 1	Year 2	Year 3	Year 4	Year 5
Coverage Available	0.93	1.4	1.56	1.47	1.37
Debt	0.46	1.1	1.02	0.95	0.87
DSCR Ratio	2.03	1.27	1.53	1.55	1.58
Average DSCR Ratio					1.54

The debt service coverage ratio based on the assumed techno economic parameters is found satisfactory. The average DSCR is 1.54.

12.3 Internal Rate of Return (IRR)

The financial indicators like Net Present Worth (NPW), Benefit Cost Ratio (BCR), and Internal Rate of Return (IRR) etc. were analysed by discounting cash flow @15% discounting rate. The internal rate of return is found to be 78.48% and BCR is about 1.04.

12.4 Projected Balance Sheet

	Year						
	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6	Yr. 7
Liabilities							
Equity	1.28	1.28	1.28	1.28	1.28	1.28	1.28
Term Loan	3.84	3.20	2.56	1.92	1.28	0.64	0.00
Reserve & Surpluses	-0.02	0.43	0.95	1.48	2.05	2.99	3.91
Total	5.10	4.91	4.79	4.68	4.61	4.91	5.19
Assets							
Gross Fixed Assets	4.61	4.61	4.61	4.61	4.61	4.61	4.61
Less Depreciation	0.49	0.98	1.40	1.76	2.07	2.34	2.57
Net Fixed Assets	4.12	3.63	3.21	2.85	2.54	2.28	2.05
Intangible Assets	0.50	0.50	0.26	0.02	-0.22	-0.22	-0.22
Cash & Bank Balance	0.47	0.77	1.31	1.81	2.28	2.85	3.36
Total	5.10	4.91	4.79	4.68	4.61	4.91	5.19
TNW	6.38	6.19	6.06	5.96	5.88	6.19	6.46
TOL	3.84	3.20	2.56	1.92	1.28	0.64	0.00
TOL/TNW	0.60	0.52	0.42	0.32	0.22	0.10	0.00

13.0 ASSUMPTIONS

- The unit will work for 300 days per annum on single shift basis.
- Capacity utilization: First year –40%, Second year - 80%, Third year onwards - 90%.
- The wages for unskilled workers are taken as per prevailing rates in this type of industry.
- Interest rate for term loan is 12% per annum and that is for working capital is 14% per annum.
- Margin money considered at 25% of the financial outlay.
- Insurance charges for the fixed assets considered as 0.5% of the depreciated cost of the assets.
- Repayment period of seven years with one year grace period for repayment of principal.

- h. Costs of machinery and equipment are based on average prices of machinery manufacturers.
- i. Power cost is considered as Rs. 6.00 per unit and that for the fuel is Rs. 55 per litre.
- j. The cost of water is considered as 30 paisa per L.
- k. Depreciation rate of 10%, 13.91% and 15% has been considered for civil structures, plant & machineries and miscellaneous fixed assets respectively.
- l. Repair and maintenance is considered as a percentage of total project cost excluding preliminary preoperative expenses, land and land development cost. The percentages are 0.10, 0.25 and 0.5 for first three years respectively and 0.75 for fourth year onwards.
- m. The administrative expenses will be considered as Lump sum Rs. 25 thousand per annum.
- n. Insurance of the fixed assets is a function of their depreciated cost. It is considered as a 0.5% of depreciated cost (WDV method) of assets.
- o. Land cost is considered as Rs.5 Lakh per acre.

14.0 ADDRESSES OF PLANT AND MACHINERIES SUPPLIER

- **Anjoplus Machines**
Shree Sankalp Siddhi,
Unit. No. 5, Range Office Junction,
Ground Floor, Sativali Road,
Vasai (East), Maharashtra.
Pin: 401 208
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