

Model Project on Poultry Dressing and Processing Unit

Submitted to – Directorate of Food Processing
Government of West Bengal



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PROJECT PROFILE OF POULTRY DRESSING & PROCESSING UNIT

I. INTRODUCTION

Poultry is one of the fastest growing segments of the agriculture sector in India. Poultry meat is important source of high quality proteins, minerals and vitamins to balance the human diet. The broiler population in country is around 2300 million and poultry meat production in year 2010-11 is 2.19 million metric tons. In a poultry dressing and canning unit, birds are slaughtered, cooked and preserved in cans so that it can be kept for longer time hygienically and in good condition.

II. OBJECTIVES

1. To establish infrastructure for supply of canned poultry meat to the consumers.
2. To create awareness about the hygienic conditions and quality products among the consumers.

III. RAW MATERIAL AVAILABILITY

The principal raw material required is birds (chicken of about 1.5 kg to 2.0 Kg each). The average production of poultry in West Bengal is around 3 Lakh MT during the year 2011-12.

IV. MARKET OPPORTUNITIES

Processed chicken has huge demand in local as well as international market. The demand for processed poultry meat is predictably estimated at 20% of the total demand for poultry meat.

V. PROJECT DESCRIPTION

- **Product and its Uses**

In the poultry processing and canning unit, products obtained are canned poultry meat in brine, fried chicken which has huge consumption in metros, super markets and for export also. Left overs obtained during processing become very good source of additional income.

- **Capacity**

This profile envisages the establishment of a plant for the production of 451200 cans per year each of 300g capacity.

- **Manufacturing Process with Flow Chart**

- **Slaughtering and cleaning of Birds:** The process starts with slaughtering of birds and subsequently their feathers, lungs, kidneys, head and other inedible parts are removed.
- **Washing:** The carcass is thoroughly washed in water.
- **Cutting and Processing:** The carcasses are deboned. Cleaned portion is cut into required sizes and 3-5% brine solution is added. For chicken in curry vegetables will be added.
- **Steaming of Cans:** Tins are subjected to live steam in an exhaust box for around 15 minutes at a temperature of about 60-65° C
- **Canning:** Sealed air tight cans are further processed in retort at a pressure of 10 to 15 lbs. for about 40-45 minutes.
- **Cooling and Labeling:** Cans are immediately cooled to room temperature and labeled

VI. PROJECT COMPONENTS

- **Land and Building**

A plot of land of around 0.5 acre shall be required which would cost around Rs.2.5 lakhs. The cost of land development will be Rs. 1.5 Lakhs.

- **Civil Work**

Area of 300 sq. meters will be essential for plant building and 500 sq. meters for other structure the construction cost is considered as Rs. 6000 per sq. meter 800 sq. meter respectively. Therefore the total construction cost for built up area is around Rs. 22.00 Lakhs.

- **Plant and Machinery**

Sr. No.	Name Of Machinery	Quantity In Nos	Cost Per Unit	Price In Rs
1	CRATE LOADING TABLE 2' x 2' x 1.5" ht in SS framework top	1		6841.00
2	S.S. CABINET: 6 X 2 X 3 HT SS frame work & 304 tops.	1		38106.00
3	KILLING CONES: 3 NOS With Splash guard & Hopper and Plastic Drum SCALDING TANK: 18" DIA. With temp gauge & gas fittings and Stainless Steel Cover.	1		19814.00

5	CENTRIPLUCK 500 GB – SS 304 Without door, gear box model 0.5 hp, 1 Phase Approx. Load Capacity -7.5 kg	1		47114.00
6	EVISCERATION TABLE 4' X 2' X 3' with Plastic Crates(2 Nos) + Drums (1 Nos)	1		20241.00
7	DOUBLE SINK UNIT: SS sink with SS framework.	1		
8	KLEEN KUT K1 0.5 ½ HP, Single Phase motor with 8" dia SS hardened cutting blade			45230.00
9	SPARES: TOOL KIT.15 Rubber fingers 10/11 & 12/13 & 17/19 Spanner set Allan Key			5145.00
10	Boiler, with pressure of 7 kg per square cm, approx. evaporation 182 kg/hr, oil fired.	1 NO.	458000.00	458000.00
11	Autoclave 30" X 36"size, with crate capacity of about 360 can., with dial thermometer, safety valve and pressure gauge.	2 NOS.	115000.00	230000.00
12	Double seamer – motor driven, complete with stand, motor, starter, switch gear, and change parts, chuck for 301 X 208 (Type MIBA)	2 NOS.	92500.00	185000.00
13	Balancing tank SS made, with steam piping arrangement.(90 cm X 45 cm X 45 cm)	1 NO.	110000.00	110000.00
14	Brine heating tank SS with steam heating type, of 100 kg capacity	1 NO.	130000.00	130000.00
15	Exhaust box, straight line type, 275 cm X 60cm X 450 cm	1 NO.	270000.00	270000.00
16	Treadle embossing system with one set of double row die, or 5 letter figures range	1 NO.	65000.00	65000.00
17	Platform balance	2 NOS.	8000.00	16000.00
18	Pan balance	3 NOS.	3000.00	9000.00
19	Rack for cooling meat under fan 180cm X 120 Cm X 45 Cm	2 NOS.	45000.00	90000.00
20	Rack for arranging cans, 180 cm X 150 Cm x 45 cm	6 NOS.	50000.00	300000.00
21	Process table with AL top	6 NOS.	32000.00	192000.00
22	Washing tanks 120cm X 90 cm x 45 cm	2 NOS.	85000.00	170000.00
23	Laboratory Equipment (Set)	1 NO.	65000.00	65000.00
24	PP capping machine	1 NO.	85000.00	85000.00

25	Pickling vat	1 NO.	35000.00	35000.00
				2592491.00
	Excise duty	12.36%		320431.89
	Total invoice value			2912922.89
	Transportation cost (lumpsum)			3.36
	VAT against C form	2.0%		58258.46
	Entry tax	1%		29129.23
	Sub total			3000313.93
Grand Total in INR Lakh				30.00

- **Miscellaneous Fixed Assets**

A provision of Rs. 3.78 Lakhs is needed to take care of expenditure like office furniture and other infrastructure, telephone installation, electrical infrastructure is considered under miscellaneous fixed assets.

- **Preliminary & Preoperative Expenses**

Rs. 2.00 Lakhs will be required to pay the preliminary and preoperative expenses like interest during construction period, registration, travelling expenses etc.

- **Contingency**

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

- **Margin money for working capital**

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

VII. PROJECT COST

S. No	Particulars	Qty.	Unit	Rate in Rupees	Amount (INR. Lakh)
1	Land	0.5	Acre	5	2.5
2	Land Development Sq. Mt	2000	Sq. MT.	LS	1.50
3	Civil Work	300	Sq. MT.	6000	18.00
4	Other Civil Work	500	Sq. MT.	800	4.00
5	Plant and Machinery				30.00
6	Miscellaneous Fixed Assets				3.78
7	Contingency				1.07
8	Preliminary and Preoperative				2.00
9	Margin money for working				7.00
	TOTAL				69.85

VIII. MEAN OF FINANCE

Share	25%	17.46
Bank loan	75%	52.37
Total amount in Rs. Lakh		69.85

IX. WORKING CAPITAL ASSESMENT

Working capital required to run the plant is worked as under.

Working Capital Assessment (Amount in Rs. Lakh)				
Particulars	Days	Year 1	Year 2	Year 3
Raw material	2	0.66	0.93	1.19
WIP	1	0.44	0.62	0.80
Finished Goods	30	13.28	18.59	23.90
Debtors	30	13.62	19.39	24.94
Total		28.00	39.53	50.82
Creditors		0	0	0
Total		0	0	0
WCG		28.00	39.53	50.82
Margin	25%	7.00	9.88	12.71
MPBF		21.00	29.65	38.12
Interest	14%	2.94	4.15	5.34

X. MANPOWER REQUIREMENT

a. Administrative and Supervisory

Designation	Quantity in Nos	Salary Per Month in Rupees
Watchman cum peon	1	Rs. 5,000.00
Production-cum-quality control manager	1	Rs. 20,000.00
Food Technologist	1	Rs. 15,000.00
Supervisor (Production)	1	Rs. 10,000.00
Supervisor (Sales & Purchase)	1	Rs. 10,000.00
Accountant cum clerk cum cashier	1	Rs. 10,000.00
Mechanic	1	Rs. 8,000.00
Boiler attendant	1	Rs. 8,000.00
Store in charge	1	Rs. 10,000.00
Total Salary		Rs. 96,000.00

XI. PROJECT PROFITABILITY

• Installed Capacity and Capacity Utilization

The installed capacity of the plant is production of 450000 cans per year of each fried chicken curry and chicken in brine solution. During first year only 50% capacity will be utilized. In second year the capacity utilization is 70% and from third year onwards 90% of total capacity will be utilized.

• Yield and Production

The final products in the unit are fried chicken curry and chicken in brine solution. Hence at 90% capacity utilization production target will be;

Products	No of Cans/year
Fried Chicken in Curry Veg	225000
Chicken in Brine Solution	225000

• Sales Revenue

S. No.	Products	Price (Rs per unit)
1	Fried Chicken in Curry Veg(Rs/Can)	72.5
2	Chicken in Brine Solution(Rs/Bottle)	62.5
3	Bi products /Kg	15.0

• Profit Calculations

	Year 1	Year 2	Year 3	Year 4	Year 5
Installed Capacity In Number of cans					
Fried Chicken in Curry	225000	225000	225000	225000	225000
Chicken in Brine solution	225000	225000	225000	225000	225000
Total Installed Capacity in number of cans	450000	450000	450000	450000	450000
Capacity Utilisation	50%	70%	90%	90%	90%
Fried Chicken in Curry	112500	157500	202500	202500	202500
Chicken in Brine solution	112500	157500	202500	202500	202500
Total Installed capacity	225000	315000	405000	405000	405000
Sale Value in Rs. Lakh	50%	70%	90%	90%	90%
Fried Chicken in Curry	81.56	114.19	146.81	146.81	146.81
Chicken in Brine solution	70.31	98.44	126.56	126.56	126.56
Income from bi-products	3.45	4.83	6.21	6.21	6.21
Total Income in Rs. Lakh	155.33	217.46	279.59	279.59	279.59
Total expenditures in Rs. Lakh	137.73	195.79	251.58	251.70	251.82
PBDIT	17.59	21.67	28.01	27.89	27.77
Depreciation	6.54	5.69	4.96	4.32	3.77
Interest on Term Loan	6.29	6.29	5.24	4.19	3.14
Interest On working Capital	2.94	4.15	5.34	5.34	5.34
Intangible assets written off	0.00	0.40	0.40	0.40	0.40
Profit after depreciation and interest	4.77	9.29	17.41	18.98	20.46

Tax	1.72	3.34	6.27	6.83	7.37
Profit after depreciation interest and tax	3.05	5.94	11.15	12.15	13.09
Surplus available for repayment	15.88	17.92	21.34	20.66	20.00
Cash Accruals	9.59	11.64	16.11	16.47	16.86

XII. FINANCIAL PARAMETERS

• Cash Flow Statement

The statement of cash flow is concerned with the flow of cash in and out of the business.

Cash inflow= Equity + Loan from bank + cash accruals from the business

Cash Out flow= Increase in fixed assets + Repayment of term loan + Preoperative expenses + cash required for the payment of dividend

Total Inflow	79.44	11.64	16.11	16.47	16.86
Total Out Flow	69.85	8.75	8.75	9.099	9.099
Opening Balance	0	9.591	12.48	19.84	27.21
Surplus	9.591	2.888	7.356	7.372	7.765
Closing Balance	9.591	12.48	19.84	27.21	34.97

• Break Even Analysis

Sales Revenue	155.33	217.46	279.59	279.59	279.59
Total Variable Cost	131.77	184.48	237.19	237.19	237.19
Total Fixed Cost	11.25	16.14	17.68	16.60	15.53
Contribution per Unit	23.55	32.97	42.39	42.39	42.39
Break Even Point (%)	47.75	48.94	41.69	39.17	36.64

The unit is expected to break even at approximately 37.18% capacity utilization during first year and during the second year the breakeven point will be 40.00%

• Debt Service Coverage Ratio (DSCR)

DSCR	Year 1	Year 2	Year 3	Year 4	Year 5
Coverage Available	15.88	17.92	21.34	20.66	20.00
Debt Value	6.29	15.04	13.99	12.94	11.89
DSCR Ratio	2.53	1.19	1.53	1.60	1.68
Average DSCR Ratio	1.61				

The debt service coverage ratio based on the assumed techno economic parameters is found satisfactory. The average DSCR is 1.61.

- **Internal Rate of Return (IRR)**

The internal rate of return is found to be more than 50% and BCR is about 1.04.

- **Projected Balance Sheet**

Liabilities		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Equity	17.46	17.46	17.46	17.46	17.46	17.46	17.46	17.46
Term Loan	52.39	52.39	42.39	32.39	22.39	12.39	2.39	0.00
Reserve & Surpluses		7.37	19.35	37.96	57.31	77.71	99.20	122.39
Total		77.22	79.20	87.81	97.16	107.56	119.05	139.85
Assets								
Gross Fixed Assets		67.85	67.85	67.85	67.85	67.85	67.85	67.85
Less Depreciation		6.54	12.24	17.20	21.52	25.29	28.58	31.45
Net Fixed Assets		61.31	55.61	50.65	46.33	42.56	39.27	36.40
Intangible Assets		2.00	2.00	1.60	1.20	0.80	0.40	0.40
Cash & Bank Balance		13.91	21.58	35.55	49.63	64.20	79.38	103.05
Total		77.22	79.20	87.81	97.16	107.56	119.05	139.85
TNW	17.46	94.68	96.66	105.27	114.63	125.03	136.51	157.31
TOL	52.39	52.39	42.39	32.39	22.39	12.39	2.39	0.00
TOL/TNW	3.00	0.55	0.44	0.31	0.20	0.10	0.02	0.00

XIII. ASSUMPTIONS

- The unit will work for 300 days per annum on single shift basis.
- In first year 50% of installed capacity would be utilized in second year 70% Capacity will be utilized and third year onwards the capacity utilization will be 90% of installed capacity.
- The wages for skilled and unskilled workers are taken as per prevailing rates in this type of industry.
- Interest rate for term loan is 12% per annum and that for working capital is 14% per annum.
- Depreciation rate of 10%, 13.91% and 15% has been considered for civil structures, plant & machineries and miscellaneous fixed assets respectively.
- 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.

- h. Repayment period of seven years with one year grace period for repayment of principal is considered.
- i. Costs of machinery and equipment are based on the average prices provided by machinery manufacturers.
- j. Power cost is considered as Rs. 6.0 per unit and that for the fuel is Rs. 55 per liter.
- k. 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.
- l. The administrative expenses will be considered as Lump sum Rs. 50 thousand per annum.
- m. The 0.5% of total income would be considered to take care of promotion and marketing expenses.
- n. Land cost is considered as Rs.5 Lakh per acre.
- o. The cost of water is considered as 30 paisa per L.

XIV. SUPPLIER OF PLANT AND MACHINERY

RND Practical Engineering

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