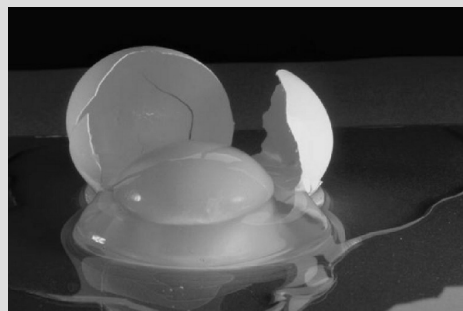


EGG POWDER



1.0 INTRODUCTION:

The egg is the most nutritious natural product. Eggs are rich in protein, vitamins and minerals. During last three decades, the poultry industry in the country has made remarkable progress and grown into an organized and highly productive industry. Dried egg powder can be stored and transported at room temperatures. It is quite stable and has long shelf life. The manufacture of egg powder is an important segment of egg consumption. There is enough scope of an egg powder manufacturing plant, with a suitable capacity.

2.0 PRODUCT

2.1 Applications

Egg powder is one of the most common products in poultry industry in the country. Attempts have been made to prepare egg pudding also but this product has not yet been accepted by the consumers, whereas demand for egg powder is increasing year after year. This project can be set up in UP, WB, Maharashtra and AP. The preferred location is Maharashtra in view of vast market.

2.2 Availibility of technical know how and compliances

CFTRI, Mysore, can offer the technical know-how. Compliance under the PFA Act is necessary.

3.0 MARKET POTENTIAL

3.1 Demand and Supply

Eggs are full of nutrients and minerals and are consumed in different forms since centuries. There was misconception that they are from non-vegetarian food category but now people at large have accepted them as a vegetarian item and their consumption is increasing year after year. Transportation of eggs is difficult as chances of breakage during transportation are

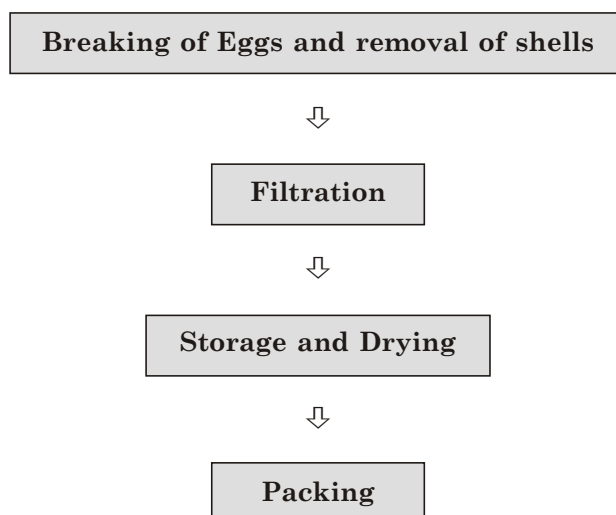
higher and it is costly also. Egg powder is comparatively easier to transport and there is no question of any breakage during the transit.

3.2 Marketing Strategy

The major market is defense establishments, various government and non-government nutritional programmes, bakeries and all such areas like hills or forests where transportation is difficult. Before venturing into this project, a proper market assessment and some firm tie-up is advisable.

4.0 MANUFACTURING PROCESS

Manufacture of dried egg powder starts with breaking of eggs and removing egg-shells. After removal of shells, the mixture is filtered and stored in storage tanks at about 4° C and then it is taken to tubular heater wherein it is dried at about 65° C for 8 to 10 minutes and it is filtered and passed to high pressure spray drier with the help of high pressure pump. The material which comes out of high pressure spray drier is not only in dried form but also in powder form which is then packed in poly-lined boxes. The average yield is around 80%. CFTRI, Mysore, has developed a process and the promoters may like to seek their help. A typical process flow chart would be as under:



5.0 CAPITAL INPUTS:

5.1 Land and Buildings

A plot of around 800 sq.mtrs. will be sufficient as the built-up area requirement is not more than 500 sq.mtrs. The built-up area would have main production unit in around 300 sq.mtrs. and balance area will be utilized for storage and packing. Cost of land is expected to Rs.2.40 lacs whereas that of civil work would be Rs.12.50 lacs.

5.2 Plant and Machinery

It is proposed to install dry egg powder making unit with capacity of 240 tons per annum with 16 hours of working per day for 300 working days.

The plant and machinery required for the above production capacity may cost about Rs.65.00 lacs.

(Rs. in lacs)

Particulars	Quantity/ No.	Price
Egg Breaker	4	2.00
Centrifuge	2	6.00
Filter	2	2.00
Storage Tank	4	3.00
Feed Pump	2	6.00
Tubular Heater	1	8.00
Balance Tank	4	3.00
Feed Pump	2	7.00
High Pressure Pump	2	8.00
High Pressure Spray Dryer	1	7.50
Cyclone with exhaust and fan	1	3.50
Packing Unit	1	5.00
Electrification and Installation	--	4.00
	Total	65.00

5.3 Miscellaneous Assets

Other miscellaneous assets required are fans, weighing balance, tables, chairs, furniture etc which would cost Rs.10.00 lacs.

5.4 Utilities:

The total power required shall be 75 HP whereas per day water requirement would be 2500 litres.

5.5 Raw and Packing Materials

The major raw material required is fresh eggs and the daily requirement is 20,000. Prior confirmed arrangements for this quantity are necessary. Packing material like poly-lined paper bags, corrugated boxes, labels etc. shall be needed.

6.0 MANPOWER REQUIREMENTS

Particulars	No	Monthly Salary (Rs.)	Total Monthly Salary (Rs.)
Machine Operators	2	3,500	7,000
Skilled Workers	6	2,500	15,000
Semi-skilled Workers	4	1,750	7,000
Unskilled Workers	10	1,250	12,500
Salesmen	1	2,500	2,500
Clerk	1	2,500	2,500
		Total	46,500

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

(Rs. in lacs)

Particulars	Area (Sq.Mtrs)	Cost
Land	800	2.40
Building	500	12.50
	Total	14.90

8.2 Plant and Machinery

The total cost of machinery is estimated to be Rs.65 lacs, as explained earlier.

8.3 Miscellaneous Assets

The provision for miscellaneous assets of Rs. 10.00 lacs shall be adequate as explained earlier.

8.4 Preliminary and Pre-Operative Expenses

The registration charges, establishment expenses, trial run expenses, interest during implementation etc would be around Rs.10 lacs.

8.5 Working Capital Requirement

At 65% utilisation in the first year, the total working capital needs shall be as under:

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Raw and Packing Materials (except Lime)	½ Month	30%	1.80	1.25	0.55
Stock of Finished Goods	½ Month	25%	2.40	1.80	0.60
Receivables	½ Month	25%	3.90	2.90	1.00
Working Expenses	1 Month	100%	1.25	--	1.25
		Total	9.35	5.95	3.40

8.6 Cost of the Project and Means of Financing

(Rs. in lacs)

Items	Amount
Land and Buildings	14.90
Plant and Machinery	65.00
Miscellaneous Assets	10.00
Preliminary and Pre-operative Expenses	10.00
Contingencies @ 10% on land and building and machinery	8.00
Working Capital Margin	3.40
Total	111.30
Means of Finance	
Promoter's Contribution	35.30
Bank Loan/ Financial Institutions	76.00
Total	111.30
Debt Equity Ratio	2.15 : 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

The installed production capacity of the proposed unit would be 240 MTA in 300 working days of 16 hours. The capacity utilization of 65% and 80% is envisaged during the first two years.

9.2 Sales Revenue at 100% Capacity

(Rs. in lacs)

Product	Qty. Tonnes	Selling Price Per Ton/Rs.	Value
Egg Powder	240	65,000	156.00

9.3 Raw and Packing Materials Required at 100%

(Rs. in lacs)

Product	Quantity (Nos)	Rate per No.	Value
Fresh Eggs	60 Lacs	1.00	60.00
Cost of Packing Materials @ 3000/Ton	--	--	7.20
		Total	67.20

9.4 Utilities

The annual cost of utilities at 100% activity level would be Rs.6.00 lacs.

9.5 Interest

Interest on term loan of Rs. 76 lacs has been calculated @ 14% per annum assuming repayment in 6 years including a moratorium period of 1 year, whereas interest on working capital would be 14% per annum.

9.6 Depreciation

It has been calculated on WDV basis @ 10% on building and 15% on machinery and other assets.

10.0 PROJECTED PROFITABILITY

(Rs. in lacs)

No	Particulars	1st Year	2nd Year
A	Installed Capacity	---240 MTA ---	
	Capacity Utilisation	65%	80%
	Sales Realisation	101.40	124.80
B.	Cost of Production		
	Raw and Packing Materials	43.68	53.76
	Utilities	3.90	4.80
	Salaries	5.58	6.25
	Stores and Spares	1.80	2.40
	Repairs and Maintenance	2.40	3.00
	Selling Expenses @ 10%	10.14	12.48
	Administrative Expenses	2.50	3.00
	Total	70.00	85.69
C.	Profit before Interest & Depreciation	31.40	39.11
	Interest on Term Loan	9.80	8.33
	Interest on Working Capital	0.84	1.05
	Depreciation	12.50	10.69
	Net Profit	8.26	19.04
	Income-tax @ 20%	1.66	3.81
	Profit after Tax	6.60	15.23
	Cash Accrual	19.10	25.92
	Repayment of Term Loan	--	14.00

11.0 BREAK-EVEN POINT ANALYSIS

(Rs. in lacs)

No.	Particulars	Amount
A	Sales	101.40
B	Variable Cost	
	Raw and Packing Materials	43.68
	Utilities (70%)	2.73
	Salaries (70%)	3.91
	Stores and Spares	1.80
	Selling Expenses (70%)	7.10
	Administrative Expenses (50%)	1.25
	Interest on working capital	0.84
	Total	61.31
C	Contribution	40.09
D.	Fixed Cost	23.17
E.	Break Even Point (D ÷ C)	58%

12.0 [A] LEVERAGES

Financial leverage

$$= \text{EBIT/EBT}$$

$$= 18.90 / 8.26$$

$$= 2.29$$

Operating Leverage

$$= \text{Contribution} / \text{EBT}$$

$$= 40.09 / 8.26$$

$$= 4.85$$

Degree of Total Leverage

$$= \text{FL/OL}$$

$$= 2.29 / 4.85$$

$$= 0.47$$

[B] Debt Service Coverage Ratio (DSCR)

(Rs. in lacs)

Particulars	1st Yr	2nd Yr	3rd Yr	4th Yr	5th Yr	6th Yr
Cash Accruals	19.10	25.92	28.11	31.01	34.00	37.11
Interest on TL	9.80	8.33	6.37	4.11	2.45	1.38
Total [A]	28.90	34.25	34.48	35.12	36.45	38.49
Interest on TL	9.80	8.33	6.37	4.11	2.45	1.38
Repayment of TL	--	15.20	15.20	15.20	15.20	15.20
Total [B]	9.80	23.53	21.57	19.31	17.65	16.58
DSCR [A] ÷ [B]	2.95	1.45	1.59	1.82	2.06	2.32
Average DSCR	----- 2.03 -----					

[C] Internal Rate of Return (IRR)

Cost of the project is Rs. 111.30 lacs.

(Rs. in lacs)

Year	Cash Accruals	16%	18%	20%	24%
1	19.10	16.46	16.18	15.91	15.39
2	25.92	19.26	18.61	17.99	16.85
3	28.11	18.02	17.12	16.28	14.73
4	31.01	17.12	16.00	14.95	13.12
5	34.00	16.18	14.86	13.67	11.59
6	37.11	15.22	13.73	12.43	10.21
7	39.23	13.89	12.32	10.95	8.71
8	42.01	12.81	11.17	9.79	7.52
	256.49	128.96	119.99	111.97	98.12

The IRR is around 20.

Some of the machinery suppliers are

1. Techno Equipments, 31, Parekh street, Girgaum, Mumbai-400004
2. GR Engg. Works Pvt Ltd, Worli, Mumbai 400 018 and Apurva Engg. Works, Borivali, Mumbai 400 098
3. FMC Technology, Hong Kong Ltd., 2 Bhubhaneshwar Housing Soc., Pashan Rd., Pune 411008. Tel No. 25893700.
4. Flavourire Foods and Services Pvt. Ltd. 208 Manas Bhavan, 11 RNT Marg, Indore 452008. Tel No. 2527644-5046500