

PRESERVATION OF EGGS



PRODUCTION CAPACITY : Treatment of 210 lakh eggs/annum

1.0 PRODUCT AND ITS APPLICATIONS

Eggs deteriorate rapidly during storage under ambient conditions. The reason for this rapid spoilage is that the porous shell of egg allows escape of carbon dioxide and moisture resulting in loss of weight. Coating of shell eggs with a white paraffin base mineral oil containing antifungal and bacteriostatic agents have been found to aid in maintaining the quality. A technique is available to preserve the shell eggs by washing and coating using egg washing powder and egg coating oil for which formulations have been developed at CFTRI, Mysore. The egg washing powder has a combined detergent and sanitising action. It lowers bacterial load, increases shelf-life, sale value and consumer acceptability. The egg coating oil formulation preserves the shell eggs for about 4 weeks at 25°C to 30°C and 10 days at 38°C. Eggs keep well for 24 weeks at 7°C and for 12 weeks at 13°C.

2.0 MARKET POTENTIAL

This low cost technique can be easily adopted in poultry farms and wholesale egg trade since capital costs involved are minimal. The major egg producing States are Andhra Pradesh, West Bengal, Tamilnadu and Maharashtra. The washed and coated eggs are hygienic having a longer shelf life as compared to the untreated eggs.

3.0 BASIS AND PRESUMPTION

- a) The unit proposes to work at least 300 days per annum on single shift basis.
- b) The unit can achieve its full capacity utilization during the 2nd year of operation.
- c) The wages for skilled workers are taken as per prevailing rates in this type of industry.
- d) Interest rate for total capital investment is calculated @ 12% per annum.
- e) The entrepreneur is expected to raise 20-25% of the capital as margin money.
- f) The unit proposes to construct its own building.
- g) Costs of machinery and equipment are based on average prices enquired from machinery manufacturers.
- h) The unit can be a service centre for treatment of eggs. It can also work as an appendage to a large poultry farms.

4.0 IMPLEMENTATION SCHEDULE

Project implementation will take a period of 8 months. Break-up of the activities and relative time for each activity is shown below:

- Scheme preparation and approval : 01 month

- SSI provisional registration : 1-2 months
- Sanction of financial supports etc. : 2-5 months
- Installation of machinery and power connection : 6-8 months
- Trial run and production : 01 month

5.0 TECHNICAL ASPECTS

5.1 Availability of Raw Material

The raw material required for preparation of egg washing powder are chemicals having sanitising and detergent properties. These chemicals are readily available from chemical manufacturers/suppliers.

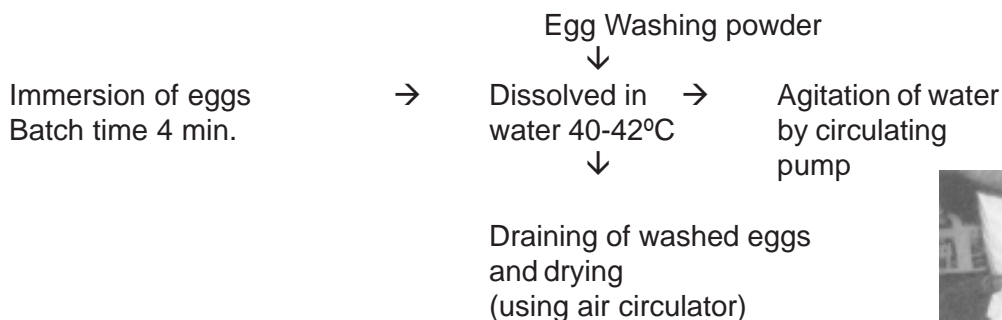
The raw materials required for preparation of egg coating oil are mineral oil and antifungal and bacteriostatic agents which are readily available from chemical suppliers.



5.2 Process of Manufacture

Preparation of egg washing powder :

The washing chemicals are ground to uniform mesh size and homogeneously mixed in the required proportions. The eggs are washed with the washing powder as under :



Preparation of egg coating oil:

The antifungal and bacteriostatic agents are dissolved in a suitable solvent and stirred well continuously while warming. This mixture is added to mineral oil, heated, stirred, cooled and stored.

Washed eggs are graded and kept in egg trays and stacked. The eggs are sprayed with egg coating oil using a sprayer having atomiser nozzle.

6.0 POLLUTION CONTROL

There is no major pollution problem associated with this industry except for disposal of rotten eggs, shells, broken eggs and other waste which should be managed appropriately. The entrepreneurs are advised to take "No Objection Certificate" from the State Pollution Control Board.

7.0 ENERGY CONSERVATION

No coal or LDO is used in this process.

8.0 PRODUCTION CAPACITY

Quantity	:	210 lakh eggs
Value	:	Rs. 27.30 lakh
Installed capacity	:	To wash and coat 1 lakh eggs/day
Working days	:	300/annum (3 shifts/day)
Optimum Capacity utilisation	:	70%
Manpower	:	23
Utilities		
Motive Power	:	15 kWH
Water	:	5 kL/day

9.0 FINANCIAL ASPECTS

9.1 Fixed Capital

9.1.1 Land & Building

		Amount (Rs. lakh)
Land 400 sq.m.	:	0.60
Built up Area 100 sq. m.	:	3.00
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Total cost of Land and Building	:	3.60

9.1.2 Machinery and Equipment

Description		Amount (Rs. lakh)
For egg washing : Pulveriser, SS vessels/ drum with immersion heater, metal frames for hanging baskets, baskets for holding eggs, circulating pump, wire baskets.]	2.00
For egg coating : MS oil storage drums, MS mixing drum, electric heater, agitator, chemical balance, sprayer with atomiser nozzle, egg trays.]	
Erection & electrification @10% cost of machinery & equipment	:	0.20
Office furniture & fixtures	:	0.30
Total	:	<hr/> 2.50

9.1.3 Pre-operative Expenses

Consultancy fee, project report, deposits with electricity department etc. : 0.50

9.1.4 Total Fixed Capital

(9.1.1+9.1.2+9.1.3) : 6.60

9.2 Recurring expenses per annum

9.2.1 Personnel

Designation	No.	Salary Per month	Amount (Rs.lakh)
Plant Manager	1	10000	1.20
Supervisor	1	7000	0.84
Office Assistant	1	6000	0.72
Unskilled workers	20	1500	3.60
			<hr/>
			6.36
Perquisites @15%			0.94
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Total :	23		7.30

9.2.2 Raw Material including packaging materials

Particulars	Amount (Rs. lakh)
Raw materials	12.60

9.2.3 Utilities

	Amount (Rs. lakh)
Power 15 kWh	1.78
Water 1500 kL	0.02
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Total:	1.80

9.2.4 Other Contingent Expenses

	Amount (Rs. lakh)
Repairs and maintenance@10%	0.61
Consumables & spares	
Transport & Travel	
Publicity	0.53
Postage & stationery	
Telephone	
Insurance	0.06
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Total:	1.20

9.2.5 Total Recurring Expenditure	Amount (Rs. lakh)
(9.2.1+9.2.2+9.2.3+9.2.4)	22.90
9.3 Working Capital	
2 days Recurring expenditure	0.15
9.4 Total Capital Investment	Amount (Rs. lakh)
Fixed capital (Refer 9.1.4)	6.60
Working capital (Refer 9.3)	0.15
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Total:	6.75

10.0 FINANCIAL ANALYSIS

10.1 Cost of Production (per annum)	Amount (Rs. lakh)
Recurring expenses (Refer 9.2.5)	22.90
Depreciation on building @5%	00.15
Depreciation on machinery @10%	00.22
Depreciation on furniture @20%	00.06
Interest on Capital Investment @12%	01.05
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Total:	24.38

10.2 Sale Proceeds (Turnover) per year

Item	Qty.	Rate	Amount (Rs.lakh)
Sales realisation for egg treatment @ 13 paise per egg (excluding the cost of egg)	210 lakh	0.13/egg	27.30

10.3 Net Profit per year

= Sales – Cost of production
= 27.30 – 24.38
= Rs. 2.92 lakh

10.4 Net Profit Ratio

= $\frac{\text{Net profit} \times 100}{\text{Sales}}$
= $\frac{2.92 \times 100}{27.30}$
= 10.7%

10.5 Rate of Return on Investment

$$= \frac{\text{Net profit} \times 100}{\text{Capital Investment}}$$

$$= \frac{2.92 \times 100}{6.75}$$

$$= 43.3\%$$

10.6 Annual Fixed Cost

Amount (Rs. Lakh)

All depreciation	0.43
Interest	1.05
40% of salary, wages, utility, contingency	4.12
Insurance	0.06
Total:	<hr/> 5.66

10.7 Break even Point

$$= \frac{\text{Annual Fixed Cost} \times 100}{\text{Annual Fixed Cost} + \text{Profit}}$$

$$= \frac{5.66 \times 100}{5.66 + 2.92}$$

$$= 566 / 8.58$$

$$= 65\%$$

11.0 ADDRESSES OF MACHINERY AND EQUIPMENT SUPPLIERS

Batliboi & Co. Pvt. Ltd.
98- A, Armenian Street
Chennai – 600 001

B.Sen Barry and Co.
65/11, Rohtak Road, Karol Bagh
New Delhi - 110005

D.P.Pulveriser Works
12, Nagindas Master Road
Opp. Maharashtra State Co.op. Bank Ltd.
Mumbai – 400 023

Gardners Corporation
158, Golf Links
New Delhi – 110 003