

Sector	Agro and Food Processing
Sub - sector	Food Processing
Profile No.	AF-15
Project Title	Egg Powder – Value added poultry product

Project Description

The proposed project envisages setting up of an egg powder unit. Eggs are dried to preserve the surplus eggs to avoid spoilage. Drying of eggs is an economical method of preservation. The dried egg powder can be stored and transported without refrigeration at room temperature. The product is stable and has a long shelf life. In the drying process, the bulk and weight of raw eggs are reduced. This results in less transportation cost and sufficient supplies to remote places with convenience.

Product Application

Egg powder is used in fast food preparations, ice-creams, cakes, cookies, noodles, doughnut etc. In fact it can replace the use of fresh eggs in these food items, which would offer convenience and ease of handling as against shell eggs. Apart from whole egg powder, yolk powder and Albumen flakes can also be made. Albumen flakes are free from cholesterol and have also application in printing and other natural protein applications.

Market & Growth Drivers

- World egg production in the year 2005 was estimated at 60 million metric ton. India ranks fifth after USA, with a production of nearly 2.5 million metric tons of eggs in 2005.
- The production cost of eggs in India is lowest in the world. The cost for producing one egg amounts to INR 1.11 (US\$ 2.55).
- The estimated domestic demand of Egg Powder is around 1000 MT, which is largely consumed by Armed Forces and bakery industry. However, with increased availability of Egg Powder, the household demand is expected to grow.
- Egg powder has an excellent export potential in countries like Germany, Austria, The Netherlands and Republic of Korea.
- Ovobel Foods limited and SKM Egg products Exports (India) Limited are potential players in Indian market. Ovobel Foods Limited is a company in collaboration with Ovobel N.V, Belgium. SKM Egg Products based at Tamilnadu process around 1.2 million eggs every day.

Growth Drivers

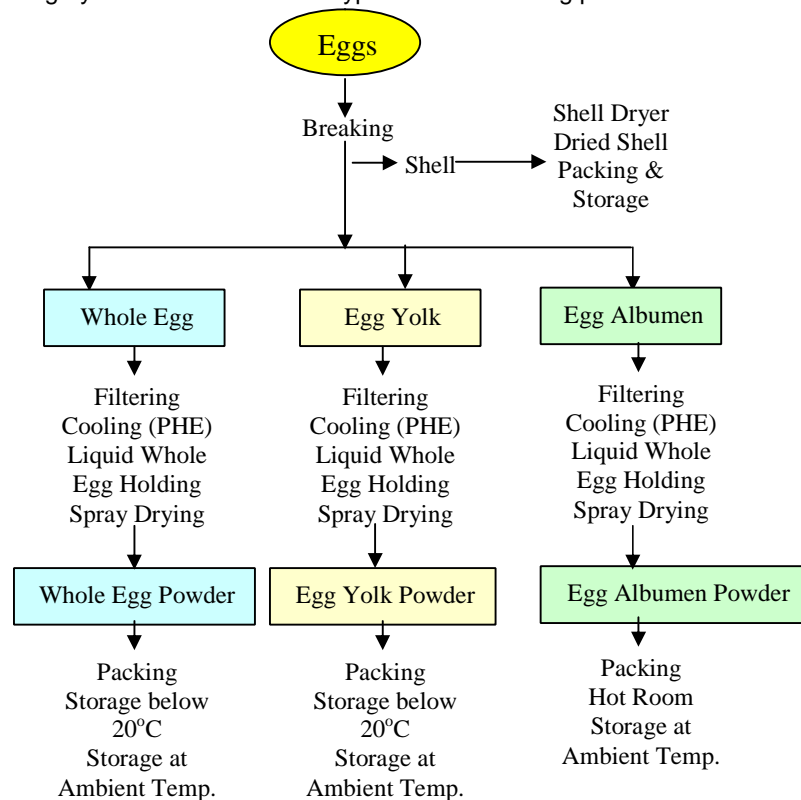
- Changing food habits have increased egg and egg products consumption in India, leading to an increase in the domestic market for both. This will be further increased in coming period as egg is the cheapest source of protein for the masses and its consumption has become common.
- Increasing number of nuclear families in India, particularly in urban and semi urban areas, and increasing number of working women in the country has increased demand of Egg powder.

Why Gujarat?

- Availability of raw material (Gujarat's average egg production is approximately 400 million eggs per year) in the state, but owing to the difference in the production and consumption, the option of processing is worth exploring.
- There is a regional and seasonal imbalance of demand and production of eggs. Therefore it is quite logical to process eggs in surplus areas and at the time of glut. Major egg producing areas are near to major consuming centers in South Gujarat and Maharashtra.
- Well developed transport infrastructure like roads, rail, port and air connectivity with main egg producing areas in the state, which offers good opportunities for development of domestic as well as export market.
- Nearness to Gulf and Far East Asian countries, which have good export potential of the product.

Technology / 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 tabular 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%. A typical manufacturing process flow is shown below:



Plant and machinery

The list of main plant and machinery required for the proposed unit is summarized in the following table:

List of Plant and Machinery

Sr. No.	Particulars	Quantity	Suppliers
1	Egg breaker	2	SSP Pvt. Ltd, Haryana
2	Centrifuge	3	Geetha Food Engineering, Mumbai
3	Filter	2	Parksan Filters Pvt. Ltd., Mumbai
4	Tubular heater	2	SSP Pvt. Ltd, Haryana
5	Balance tank	1	SSP Pvt. Ltd, Haryana
6	High pressure spray drier	2	Shirsat Electronics, Thane
7	Cyclone (fan and exhaust)	1	SSP Pvt. Ltd, Haryana

Suggested Plant Capacity & Project Cost

Estimated project cost for manufacturing of Egg Powder having 1250 Tons per annum plant capacity is INR 90 Million (US \$ 2 Million).

Estimated Project Cost & Means of Finance

Sr. No.	Cost of project	INR in million
1	Land and Land development	5.60
2	Building & Civil works.	10.00
3	Plant & Machinery	55.00
4	Misc. Fixed Assets	3.90
5	Preliminary & Pre-operative	4.05
6	Provision for contingencies	5.80
	Total Fixed Assets	84.35
7	Margin Money for working capital	5.65
	Total	90.00
	Means of Finance	
8	Promoters contribution	25.70
9	Term loan	64.30
	Total	90.00

As indicated above, the proposed project will require an approx 8000 sq. mt of land with an proposed built up area of 2000 sq. mt. Considering 150 working days in a year the unit is proposed to have an installed capacity of 1250 TPA. The total fixed cost of the project is estimated at INR 84.35 million and INR 5.65 million is the working capital margin which adds upto total capital cost of INR 90 million. The unit being proposed to cater to international demand is suggested to have a Debt equity ratio of 2.5:1. Thus, the estimated term loan amounts to INR 64.3 million and Equity at INR 25.7 million.

Raw material

Eggs – 312.50 Lac Eggs /annum

Major infrastructure required

Land – 8000 sq.mt.

Man power required - 25

Water – 234 KL/day

Power – 235 KW

Steam – 8 MT/hour

Suggested Locations

The preferred location will be Central and South Gujarat as major poultry farming activities are conducted in this area and also consuming industries market is available in these areas. Proposed location can be in the district of Surat, Vadodara, Valsad, Bharuch, Ahmedabad and Anand.

Project Time Line

The proposed project will have project timeline of 4 to 6months for availing necessary clearances from concerned authorities and will have approx. 10 to 12 months period for implementation.

Financial Indicators

Based on the profitability projections worked out for the proposed project, key financial indicators are as summarized below:

Key Financial Indicators

Sr. No	Financial Ratios	1 st Year	2 nd Year	3 rd Year
A	Break-Even Point in % capacity	43.76	38.91	34.23
B	Debt-service Coverage Ratio	1.79	2.10	2.47
C	Average DSCR	2.12		
D	Return on Investment (ROI)	25.23	28.44	31.69
E	IRR 10 years project period	46%		

As perceived from the Project cost and Means of finance table, the suggested Debt Equity Ratio for the proposed project is 2.5:1. The IRR (Internal Rate of Return) for the proposed project is approx. 46% projected for a period of 10 years.

Clearances Required

The proposed unit will have to register itself with Secretariat of Industrial Approvals (SIA), Ministry of Industries and Government of India, by filing Industrial Entrepreneur's Memorandum (IEM), as it will have plant and machinery investment of more than INR 10 million.

The unit will require registration of its products with Foods and Drugs Administration (FDA) in exporting countries, apart from registration with Indian and state food administrations.

The most critical aspect of this product will be its shelf life for export consumers and hence there will be need for meeting FDA regulations in consuming countries and Codex standards followed by them. The unit will register itself with MOFPI for availing subsidy benefits. The unit will also register itself with RBI, DGFT and with APEDA as registered manufacturer exporter to avail export incentives.

Agencies to be contacted

Industrial Extension Bureau

Mott MacDonald India

Gujarat Agro Industries Corporation Ltd