

**PROJECT PROFILE**  
**ON**  
**SKIMMED MILK**  
**POWDER**  
**MAKING UNIT**



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## INTRODUCTION

Dairy production in India runs on a low input-low output system, in which individual producers typically own less than five cattle or buffalo and use locally available feeds. This has resulted in yield levels that are below international averages but also the world's lowest production costs. As dairy product prices and income from milk collection continue to increase, farmers are slowly growing herd sizes and increasing their specialization. In addition, interests from private sector investors have also facilitated construction of larger dairies through partnering with dairy processors.

Despite the increase in production, a demand supply gap has become imminent in the dairy industry due to the changing consumption habits, dynamic demographic patterns, and the rapid urbanization of rural India. This means that there is an urgent need for the growth rate of the dairy sector to match the rapidly growing Indian economy.

Dairy is next to agriculture in its importance as a source of income to the rural households. The Dairy Development Board of India has launched a massive programme to encourage planned growth of dairying as an industry to augment financial resources of the weaker sections of society and small farmers in the backward and rural areas.

Standard	Code	Description
HS	04021010	SKIMMED MILK POWDER

## PRODUCTS AND ITS APPLICATION

Instant skimmed milk powder has many applications, including in your bakery products, chocolate and confectionery, ice cream and other desserts, or in soups and sauces. Due to its excellent solubility, you can also make milk from skimmed milk powder instant.

Skimmed milk powder is produced from fresh skimmed cow's milk. After the milk has been pasteurised and standardised, it is thickened and spray-dried to obtain a powder

## INDUSTRY OUTLOOK/TREND

The Skimmed milk market is majorly driven by the growing demand from food industry, especially bakery and confectionary segment. The use of skimmed milk powder in baking and confectionary products render the firmness thereby making them tender.

However, there is an increasing demand of skimmed milk powder for feeding infants. Owing to its nutritional value such as vitamins and minerals that are required for an infant's growth, mothers depend on skimmed milk

powder for their babies who are intolerant to breastfeeding. Skimmed milk powder market is in high demand among working women who face difficulty in feeding their babies due to their busy work life. Feeding skimmed milk powder to babies, helps prevent disease transfer from mother's body thereby reducing the chances of the baby being unhealthy. Skimmed milk powder market is set to witness an escalating demand among the global consumers owing to its wide application in the food industry and as it serves a way out for the problem of increasing number of working women to feed their babies.

During 2010-2018, the Indian Skimmed Milk Market grew at a CAGR of nearly 10%. Similarly, the market for skimmed milk is expected to grow at CAGR of 13% during 2021-26. India exported 94,000 tonnes of dairy products in 2018, valued at nearly US\$290 million. Butter and other dairy fats (including ghee) make up the majority of exports, accounting for 65% in volume terms<sup>1</sup>.

## **PROCESS**

Skimmed Milk is obtained once the fat content in the milk is removed. The process followed are:

### **Process of Manufacture Ghee:**

Upon arrival of milk at the plant, it is weighed, sampled (for laboratory testing to know the percentage content of milk fat), filtered, pasteurized, and passed directly to cream separator. The price of milk depends upon the fat content of the milk which varies from 4 to 8%. The cream thus, obtained is stored at the temperature of 50-degree F till enough is collected for the manufacture of Ghee. The cream is then ripened by inoculating with 5 to 10% of its weight by starter, it is mixed well and left to ripe for at least 12 to 18 hrs or until 0.2 to 0.4, acidity develops. It is then heated in steam jacketed kettle, the impurities (SCUM) come up at the top which is removed by perforated ladle and the ghee obtained is filtered through thin cloth and packed.

### **Process of Manufacture Skimmed Milk Powder:**

The fat free (skim) milk obtained from cream separator is collected in storage tanks. It is heated to a temperature of about 85 degree C to 90 degree C and is pumped on the surface of the steam heated revolving metallic drum. The steam pressure in the drier should be about 69 lb/sq. inch (12 degree C temperature). The milk is dried into a thin film on the surface of roller drum. It is removed by means of stationery steel scrapper, which is attached from the roller and collected through screw type burrer. It is then pulverized to desired mesh and packed.

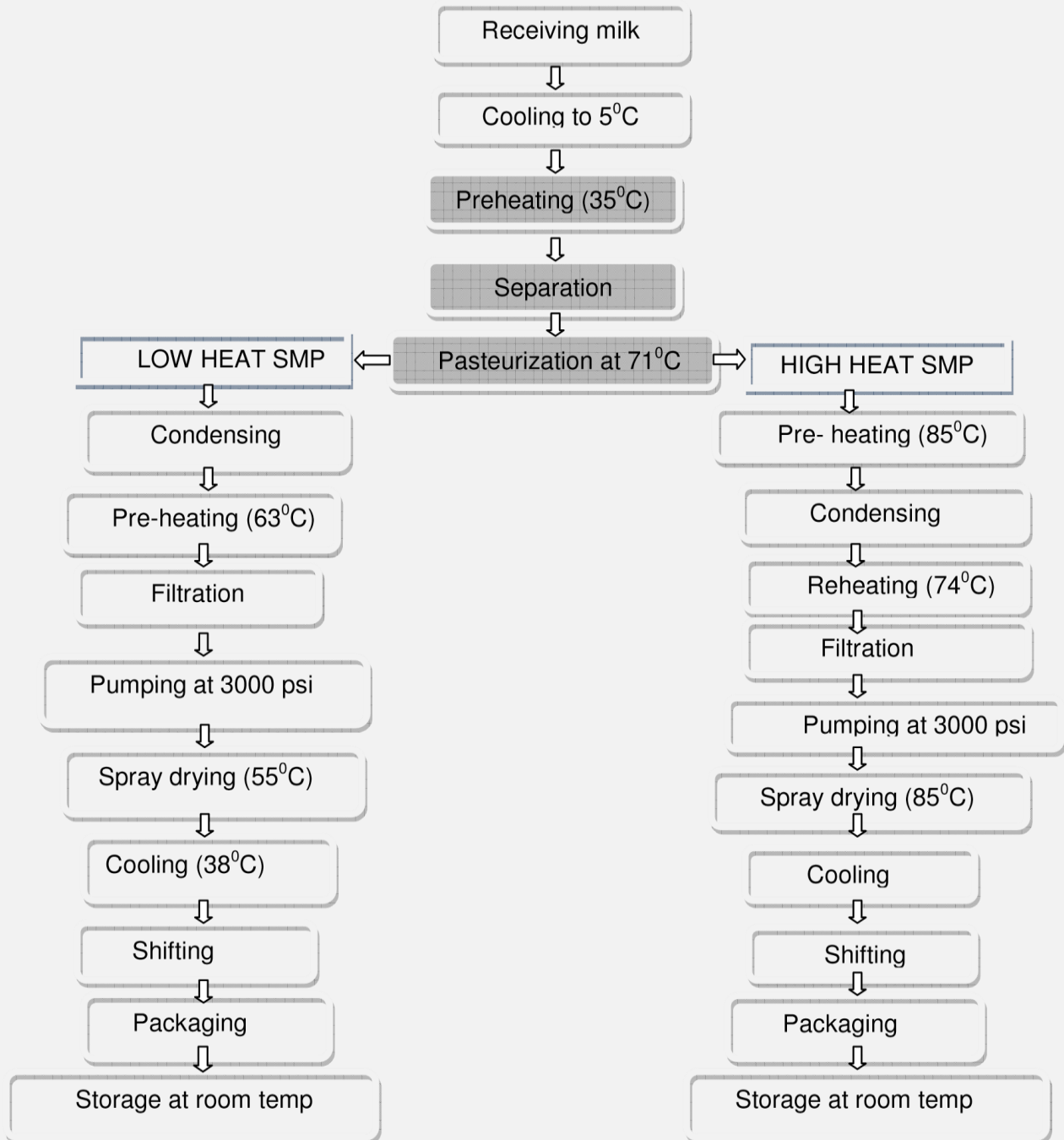
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<sup>1</sup> Dairy Whitener, Milk Powder Manufacturing Business, Entrepreneur India

## RAW MATERIAL REQUIREMENTS (per month)

Sl. No.	Particulars	Quantity (Kg)	Value (Rs.)
1	Milk	105,000	31,50,000
2	Lab Chemicals	Lumpsum	2000
Total			31,52,000

### Flow Chart of Skimmed Milk Powder



## MANPOWER REQUIREMENT (per month)

Type	Number	Cost (Rs.)
<b>A. Administrative &amp; Supervisory</b>		
Manager	1	20,000
Accountant	1	15,000
Salesman	2	16,000
Peon/watchman	1	5,000
Sweeper	1	5,000
<b>B. Technical Skilled &amp; Unskilled</b>		
Skilled Worker	1	12,000
Semi-Skilled Worker	1	8,000
Helper	2	10,000
Total	17	2,06,000

## IMPLEMENTATION SCHEDULE

Particulars	Units	Details
Land on rent (Total 700 Sq. meter)	700 sq. meter	2,40,000
Building/Unit Shed (400 Sq. meter covered)	Lumpsum	1,20,000
<b>Plant &amp; Machinery</b>		
<b>MILK RECEPTION SECTION</b>		
Roller Conveyor	INR	30,000
Can Tipping Bar	INR	10,000
Weighing Scale	INR	1,00,000
Dump Tank: 1000 L	INR	1,00,000
Disc Type Strainer	INR	50,000
Can Drip Saver	INR	20,000
Can Scrubber	INR	90,000
Can Steaming Block	INR	20,000
Storage Tank: 1000 L	INR	1,80,000
<b>MILK PROCESSING SECTION</b>		
Pasteurization Plant: 1000 LPH	INR	8,00,000
Homogeniser: 1000 LPH	INR	6,00,000
Chiller	INR	3,00,000
CIP System: Semi-Automatic	INR	9,00,000
Pump	INR	1,60,000
Spray Dryer	INR	25,00,000
Powder Packaging Machine	INR	6,00,000
<b>PRODUCT SECTION</b>		
Cream Separator	INR	6,00,000
Cream Pasteuriser	INR	3,00,000
Steam Jacketted Kettle: 500 L	INR	5,00,000
Storage Tank: 500 L	INR	90,000
Ghee Packaging Machine	INR	3,00,000
<b>UTILITIES SECTION</b>		
Boiler: 500 Kg/Hr	INR	8,00,000
DG Set: Cap 60 KVA	INR	5,00,000
Miscellaneous Equipment's (pipe & fittings, perforated ladle etc.)	INR	4,00,000
Total	INR	1,03,10,000
<b>Total cost of Plant &amp; Machinery</b>	<b>INR</b>	<b>99,50,000</b>

Electrification & Installation Charges @ 10%	INR	9,95,000
<b>Total Cost</b>	<b>INR</b>	<b>1,13,05,000</b>

## OTHER EXPENSES (PER MONTH):

Sl. No	Particulars	Cost (Rs.)
1	Electricity	50,000
2	Advertising & traveling	2,00,000
3	Conveyance	20,000
4	Misc. Fixed assets (Furniture, etc.)	1,10,000
5	Contingencies, Communication & Stationery	70,000
	<b>Total</b>	<b>4,50,000</b>

## WORKING CAPITAL (per month)

Sl. No	Particulars	Cost (Rs.)
1	Raw Material	31,52,000
2	Salaries & Wages	2,06,000
3	Other expenses	4,50,000
	<b>Total</b>	<b>48,38,000</b>

## TOTAL CAPITAL INVESTMENT

Sl. No	Particulars	Cost (Rs.)
1	Working Capital	48,38,000
2	Machinery	1,09,45,000 (excluding rent and building cost)
	<b>Total</b>	<b>1,57,83,000</b>

## COST OF PRODUCTION

Sl. No	Particulars	Cost (Rs.)
1	Total recurring cost per annum	5,80,56,000
2	Depreciation on machinery & equipment (10%)	9,95,000
3	Interest (10%)	58,05,600
	<b>Total</b>	<b>6,48,56,600</b>

## IMPLEMENTATION SCHEDULE

Project Stages	Months					
	1	2	3	4	5	6
Rent Agreement						
Ordering of Machinery						
Delivery of Machinery						
Term/Working Loan Sanction						
Installation of Machinery						
Commissioning of Plant						
RM/Inputs Procurement						
Manpower Appointments						
Commercial Production						

## COST OF THE PROJECT

Sr. No	Costing Heads	Cost (in INR)
1	Land+ Building Expenses	3,60,000
3	Plant & Machinery	1,09,45,000
4	Contingency	1,00,000
	<b>Total Cost of Project</b>	<b>1,14,05,000</b>

## SALES PROCEEDS (PER ANNUM)

Sl. No	Particulars	Quantity (Kg)	Value (Rs.)
1	Skimmed Milk Powder	1,19,700	4,18,95,000
2	Ghee	63,000	3,46,50,000
	<b>Total</b>		<b>7,65,45,000</b>

## PROFITABILITY (BEFORE INCOME TAX)

Sl. No	Particulars	Profit
1	Annual Gross Profit (INR) = Annual Sales – Annual Recurring Cost	1,16,88,400
2	% of profit on sales	15.27%
3	<b>Break-even point analysis</b>	
<b>A.</b>	<b>Net sales (in Rs. lakh)</b>	<b>765.45</b>
<b>B.</b>	<b>Variable cost</b>	
B1	Raw Materials	378
B2	Other expenses	4.5
B3	Interest on Working Capital Loan	58.05
	<b>Total variable cost</b>	<b>440.55</b>
<b>C.</b>	<b>Contribution (A-B)</b>	<b>324.9</b>
<b>D.</b>	<b>Fixed &amp; Semi-fixed Costs</b>	
D1	Salary	24.7
D2	Repair & maintenance	1
D3	Interest on Term Loan	58.05
D4	Depreciation	9.95
	<b>Total fixed cost</b>	<b>93.7</b>
<b>E.</b>	<b>BREAK EVEN POINT</b>	<b>76.38%</b>

Break-even point

$$\frac{\text{Annual Fixed Cost} \times 100}{\text{Annual Sales} - \text{Annual Variable Cost}} = \%$$



## PROFITABILITY CALCULATIONS

Sr. No.	Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
	<b>Gross Sales (Lakh)</b>	765.45	842.0	926.2	926.2	926.2
<b>A</b>	Less: (Lakh)					
1.	Recurring Cost	580	638	701.8	701.8	701.8
2.	Depreciation	9.95	10.95	12.04	12.04	12.04
3.	Interest	58.05	63.86	70.24	70.24	70.24
<b>B</b>	<b>Production cost</b>	648.56	713.42	784.76	784.76	784.76
<b>C</b>	Gross Profit	116.89	128.58	141.44	141.44	141.44
	Taxes @ 30%	35.07	38.57	42.43	42.43	42.43
	Net Profit	81.82	90.01	99.01	99.01	99.01

### References

- Department of Food Processing Industries and Horticulture, Government of West Bengal- Skimmed Milk Powder
- Video Link-<https://youtu.be/UtsrHVWMZ88>  
[https://youtu.be/uIHT3l\\_ckq0](https://youtu.be/uIHT3l_ckq0)

## MANUFACTURES/ SUPPLIERS OF MACHINERY

- M/s Bajaj Processpack Maschinen Pvt. Ltd., 7/27, Jai Lakshmi Industrial Estate, Sahibabad Industrial Area, Sahibabad, Dist. Ghaziabad (U.P.) - 201301.
- M/s Jaya Industries, No. 543, Jessore Road, Kolkata - 700 028, West Bengal, India.
- M/s Food & Biotech Engineers (I) Pvt. Ltd., Chaprola Road, Prithla, Tehsil- Palwal, Distt. - Palwal, Pin: 121102 Haryana (India).
- M/s Filtron Engineers Ltd., 6, Sitabaug Colony, Sinhagad Road, Pune – 411030 (Maharashtra).
- M/s Eskimo Refrigeration Industries, S. No. 85/1, Shree Shankar Nagar, B-Building, Ground Floor, Poud Road, Kothrud, Pune - 411038, Maharashtra, India.
- M/s Om Metals & Engineers, S. No. 5, Ekata Hsg. Society, Bapujibuwa Nagar, Thergaon, Pune - 411 033, Maharashtra, India.

## STATUTORY/ GOVERNMENT APPROVALS

There is statutory requirement of FSSAI license for setting up of food processing industry. Moreover, MSME & GST registration, IEC Code for Export of end products and local authority clearance may be required for Shops and Establishment, for Fire and Safety requirement and registration for ESI, PF and Labour laws may be required if applicable. Entrepreneur may contact State Pollution Control Board wherever it is applicable.

## **DISCLAIMER:**

This is an indicative illustration of project profile; the above calculation can vary with the locations. Only few machine manufacturers are mentioned in the profile, although many machine manufacturers are available in the market. The addresses given for machinery manufacturers have been taken from reliable sources to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further, the same have been given by way of information only and do not carry any recommendation.

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