

SKIMMED MILK POWDER



INTRODUCTION:

Milk as a source of infant food, occupies a pivotal position being a unique fluid having the necessary nutrients in 'all in one' package. Large numbers of people depend upon milk as the most important source of nourishment next only to staple food grains. Today, the production of dried milks and milk products has become an increasingly important segment of the dairy industry. There are definite indications of greater future production of dried milk and milk products due to their better keeping quality, requiring less storage space and lower shipping costs all of which are economically attractive. More non-fat dry milk production takes place than whole milk powder production due to the high keeping quality.

OBJECTIVE:

The object or purpose of drying milk (and milk products) is:

- To remove the moisture so as to reduce bulk thereby effecting a saving in storage space and packaging cost.
- To reduce the cost of transportation (due to reduced bulk).
- To provide a product which can be utilised for many food manufacturing operations.
- To improve the storage life of the product (due to low moisture) content.
- To conserve, as far as possible, the natural properties of the original raw material.
- To provide the proper return to the milk producers by better utilisation of the milk.

RAW MATERIAL AVAILABILITY:

The main raw material is milk and easily available across India.

SUITABLE LOCATION:

Skimmed Milk Powder can be manufactured at any location which is near to the market.

MARKET OPPORTUNITIES:

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 house-holds. 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.

MANUFACTURING PROCESS:

Process of Manufacture Ghee:

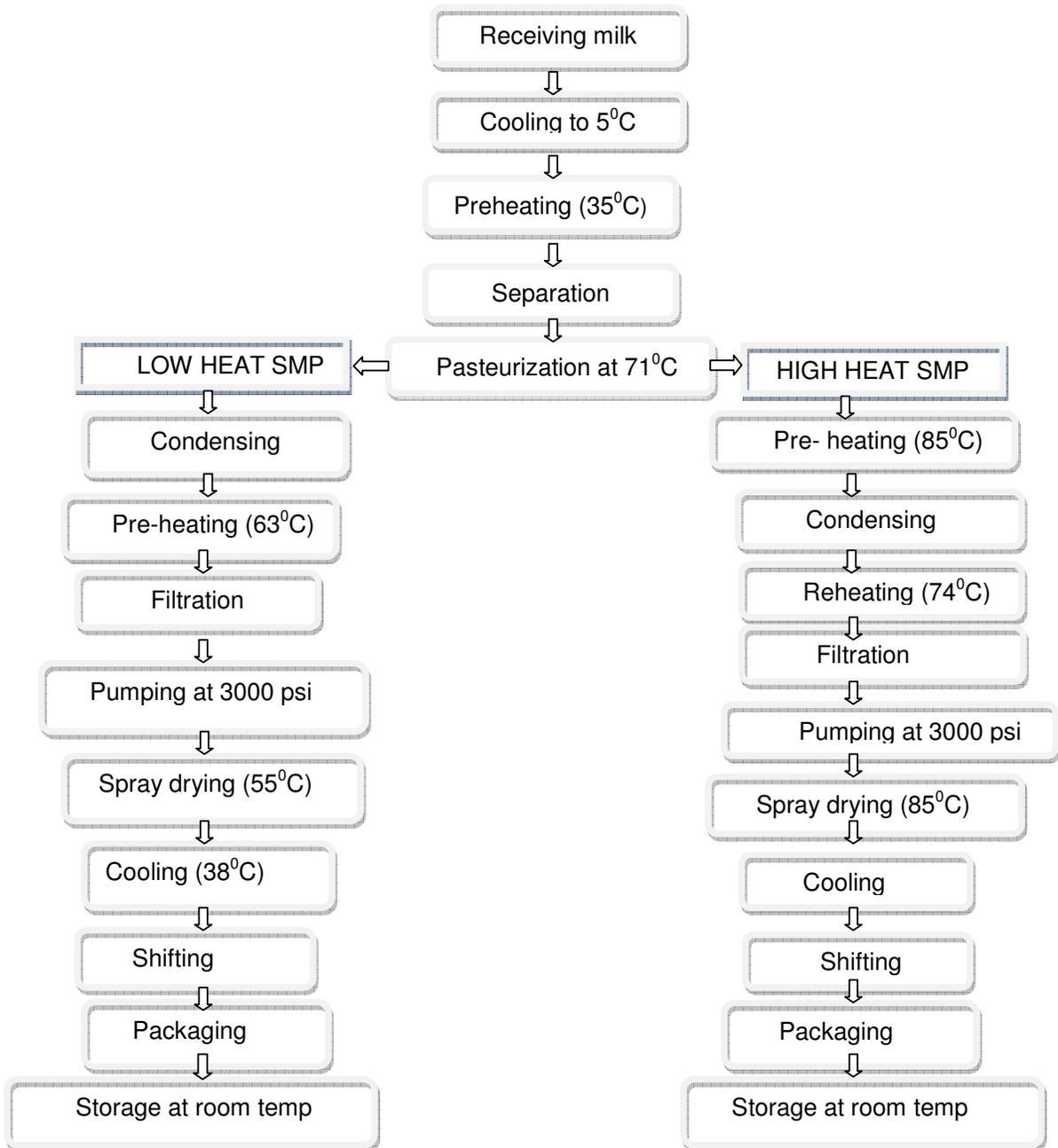
Upon arrival of milk at the plant, it is weighed, sampled (for laboratory testing to know the percentage content of milk fat), filtered, pasteurized and passed directly to cream separator. The

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 the sufficient quantity 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) comes 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 temp.). The milk is dried into a thin film on the surface of roller drum. It is removed by means of stationary steel scrapper, which is attached from the roller and collected through screw type burrer. It is then pulverized to desired mesh and packed.

Flow Chart of Skimmed Milk Powder



CAPACITY OF THE PROJECT:

- The total capacity of the unit is to be produced 171 MT Skimmed Milk Powder per year and 90 MT Ghee per year as a by-product.

PRODUCTION TARGETS (PER ANNUM):

- The scheme is worked out per shift (8 Hour) basis and 300 working days per annum.
- Assume there'll be 70% production in first year.
- Quantity: 119.70 MT skimmed milk powder per year or 9.975 MT per month.
- Quantity: 63 MT Ghee per year or 5.25 MT per month as a by-product.

PROJECT COMPONENT AND COST:**FINANCIAL ASPECTS:-****APPLICATION OF FUNDS****SOURCE OF FUND**

Particular	Amount	Particular	Amount
Land : 700 sq. meter total area		Own Capital	4,803,990.27
Building : 400 sq. meter covered area on rent		Loan from Banks	8,261,250.00
Plant & Machinery	10,945,000.00	Loan for Working Capital	3,119,520.81
Office Equipment & Furniture	70,000.00		
Working Capital	5,144,761.08		
Pre-Operative Expenses	25,000.00		
Total	16,184,761.08	Total	16,184,761.08

FIXED ASSETS

(1) Land And Building:		Value (Rs.)		
Land 700 sq. meter and & 400 sq. meter covered area on rent		360,000 per annum		
(2) Machinery And Equipment:				
S. N.	Description (Name of machine with specification)	Qty.	Rate	Value (Rs.)
Production Unit				
MILK RECEPTION SECTION				
i	Roller Conveyor	1	30,000.00	30,000.00
ii	Can Tipping Bar	1	10,000.00	10,000.00
iii	Weighing Scale	1	100,000.00	100,000.00
iv	Dump Tank: 1000 L	1	100,000.00	100,000.00
v	Disc Type Strainer	2	25,000.00	50,000.00
vi	Can Drip Saver	1	20,000.00	20,000.00
vii	Can Scrubber	1	90,000.00	90,000.00
viii	Can Steaming Block	1	20,000.00	20,000.00
ix	Storage Tank: 1000 L	2	90,000.00	180,000.00
MILK PROCESSING SECTION				
x	Pasteurization Plant: 1000 LPH	1	800,000.00	800,000.00
xi	Homogeniser: 1000 LPH	1	600,000.00	600,000.00
xii	Chiller	1	300,000.00	300,000.00
xiii	CIP System: Semi-Automatic	1	900,000.00	900,000.00
xiv	Pump	4	40,000.00	160,000.00

xv	Spray Dryer	1	2,500,000.00	2,500,000.00
xvi	Powder Packaging Machine	1	600,000.00	600,000.00
BY PRODUCT SECTION				
xvii	Cream Separator	1	600,000.00	600,000.00
xviii	Cream Pasteuriser	1	300,000.00	300,000.00
ixx	Steam Jacketted Kettle: 500 L	2	250,000.00	500,000.00
xx	Storage Tank: 500 L	1	90,000.00	90,000.00
xxi	Ghee Packaging Machine	1	300,000.00	300,000.00
UTILITIES SECTION				
xxii	Boiler: 500 Kg/Hr	1	800,000.00	800,000.00
xxiii	DG Set: Cap 60 KVA	1	500,000.00	500,000.00
xxiv	Miscellaneous Equipments (pipe & fittings, perforated ladle etc.)	0	-	400,000.00
Total Cost of Machinery & Equipments			-	9,950,000.00
Electrification & Installation Charges @ 10%			-	995,000.00
Total Cost of Production Unit			-	10,945,000.00
Furniture & Fixtures			-	70,000.00
(3)	Pre-Operative Expenses:		-	25,000.00
Total Fixed Capital (2+3)			-	10,970,000.00

SALES TURNOVER PER MONTH

Description	Qty. (Kg)	Rate (Rs/Kg)	Value (Rs.)
Skimmed Milk Powder	9,975.00	220.00	2,194,500.00
Ghee	5,250.00	330.00	1,732,500.00
Total			3,927,000.00

RAW MATERIAL REQUIREMENT & STOCK

Raw Material (per month):

Description with specification	Qty. (Kg)	Rate (Rs/Kg)	Value (Rs.)
Milk	105,000.00	29.00	3,045,000.00
Laboratory Chemicals	-	-	2,000.00
Total			3,047,000.00

ANNUAL CONSUMPTION

Milk	Rs	36,540,000.00
Laboratory Chemicals	Rs	24,000.00
Total		36,564,000.00
Stock of Raw Material	30 Days	3,005,260.27
Stock of WIP	02 Days	200,219.18
Purchase Cost of Raw Material	Rs	39,769,479.45

WORKING CAPITAL REQUIREMENT

Particulars	Days	Year' 1
Raw Material	30	3,005,260.27
Work in Process	2	200,219.18
Finished Goods	10	1,126,404.91
Receivables	30	3,927,000.00
Advance/Security		200,000.00
Total		8,458,884.37
Less: Creditors	30	3,314,123.29
Net Current Assets		5,144,761.08
Paid Stock		1,017,761.08
75% of Paid Stock		763,320.81
60% of Book Debts		2,356,200.00
Bank Limits		3,119,520.81
Margin for Working Capital		2,025,240.27

SELLING & ADMINISTRATION EXPENSES

Particular	Year I
i Postage	15,000.00
ii Commission on sales	60,000.00
iii Office Expenses	48,000.00
iv Tour & Travel	60,000.00
v Printing & Stationary	20,000.00
vi Advertisement	200,000.00
vii Telephone	50,000.00
viii Repair & Maintenance	60,000.00
ix Conveyance	60,000.00
x Sales expenses	70,000.00
xi Insurance	40,000.00
xii Misc. Expenses	14,000.00
Total	697,000.00

STAFF AND LABOUR EXPENSES

S. No.	Description	No.	Salary	Total Salaries-Year I
(a) Administrative & Supervisory				
i	Production Manager	1	15,000.00	180000.00
ii	Accountant	1	10,000.00	120,000.00
iii	Salesman	2	8,000.00	192,000.00
iv	Peon/watchman	1	5,000.00	60,000.00
v	Sweeper	1	5,000.00	60000.00
Total Salaries				612,000.00
(b) Technical Skilled & Unskilled				
i	Skilled Worker	1	10,000.00	120,000.00
ii	Semi Skilled Worker	1	8,000.00	96,000.00
iii	Helper	2	5,000.00	120,000.00
Total Wages				336,000.00
Grand Total				948,000.00

**MANUFACTURING AND PROFIT & LOSS
ACCOUNT**

BALANCE SHEET

Particulars	Year' 1
Sales Value of Skimmed Milk Powder and Ghee	47,124,000.00
Cost of Production:	
Raw Material Consumed:	
Opening Stock	-
Add: Purchases	39,769,479.45
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Less: Closing Stock	3,005,260.27
Raw Material Consumption	36,764,219.18
Add: Op Stock of WIP	-
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	36,764,219.18
Less: Cl Stock of WIP	200,219.18
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	36,564,000.00
Power & Fuel	1,000,000.00
Manufacturing Wages	336,000.00
Bonus & Incentives	20,160.00
Packaging Materials	913,500.00
Rent	360,000.00
Raw material storage & ins. Cost	16,800.00
Carriage inward	238,616.88
Depreciation	1,101,500.00
Total Cost of Production	40,550,576.88
Add: Op. Stock of Finish. Goods	-
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	40,550,576.88
Less: Cls. Stock of F. Goods	1,126,404.91
Cost of Sales	39,424,171.96
Gross Profit	7,699,828.04
	0.16
Selling & Admin Cost:	
Expenses	697,000.00
Salary	612,000.00
Financial Expenses:	
Interest on Term Loan	975,515.94
Interest on W. Capital	389,940.10
Pre. Expenses	5,000.00
Profit Before Taxation	5,020,372.00
Taxation	1,506,111.60
Net Profit After Taxation	3,514,260.40
Cash withdrawal	1,405,704.16
Transfer to Reserves	2,108,556.24
Cumulative Reserves	2,108,556.24
% of PBT on Sales	10.65

Particulars	Year' 1
Liabilities:	
Capital	4,803,990.27
Reserve & Surplus	2,108,556.24
Secured Loan:	
Term Loan	6,609,000.00
Unsecured loan:	
Current Liabilities:	
Bank Borrowings	3,119,520.81
Sundry Creditors	3,314,123.29
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	19,955,190.60
Assets:	
Fixed Assets:	
Gross Block:	11,015,000.00
Less: Depreciation	1,101,500.00
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	9,913,500.00
Current Assets:	
Inventories	4,331,884.37
Receivables	3,927,000.00
Advance/Security	200,000.00
Cash & Bank Balance	1,562,806.24
Preliminary Expenses	20,000.00
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	19,955,190.60
Difference	0.00

RATIO ANALYSIS

Particulars	Year' 1
Net Profit ratio	
NP*100/Total sales	7.46
Rate of Return	
NP*100/Total Investment	21.71

BREAK EVEN ANALYSIS

Fixed Cost	
Rent	360,000.00
Interest on Borrowing	975,515.94
40% of Salaries	244,800.00
40% of Utilities	400,000.00
25% of Admin Exp	174,250.00
Depreciation	1,101,500.00
Total	3,256,065.94
Break Even Point	$\frac{\text{Fixed Cost} * 100}{\text{Fixed Cost} + \text{Profit}}$
	48.09

ADDRESS OF MACHINERY & EQUIPMENT SUPPLIERS:

- 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 (Mahaeashtra).
- 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.