

Mother Dairy Delhi

"Mother Dairy" is the single largest brand of milk in Delhi, India as well as in Asia, marketing about 1.9 million litres of milk per day. Mother Dairy commands 40% market share in the organised sector in and around Delhi, primarily because of consistent quality and service what ever be the crisis-floods, transport strike, curfew etc. Mother Dairy, Patparganj, Delhi, is presently manufacturing & selling around 8.5 lakh litres of toned milk through bulk vending shops.

Mother Dairy, Delhi is an IS/ISO-9001:2000 and Hazard Analysis Critical Control Points (HACCP) and IS-14001:1996 Environment Management System (EMS) Certified organisation. Mother Dairy was the first industry in country to implement ISO-14031 (Environment Performance Evaluation) project. The company's Quality Assurance Laboratory is ISO/IEC-17025:1999 certified by NABL (National Accreditation Board for Testing and Calibration Laboratory), Department of Science & Technology, India. This provides assurance to the consumer in respect of Quality and Safety of products manufactured and marketed by Mother Dairy.

The National Dairy Development Board (NDDB) commissioned Mother Dairy in the first phase of Operation Flood in 1974. Considering the success of Dairy industry NDDB established Fruit & Vegetable Project in Delhi in 1988 with "SAFAL" as its umbrella brand.

With a view to separating the commercial activities from developmental activities, the NDDB merged Mother Dairy and the Fruit & Vegetable project into a wholly owned company named Mother Dairy Fruit & Vegetable Ltd (MDFVL) in April 2000. This becomes the holding company of Mother Dairy India Ltd (MDIL) - a marketing company and Mother Dairy Foods Processing Ltd (MDFPL) - a processing company. MDFPL is a multi unit company, with units at various locations in India. Mother Dairy, Delhi is one of the units of MDFPL.

The application for the award is being made for Mother Dairy, Delhi unit.

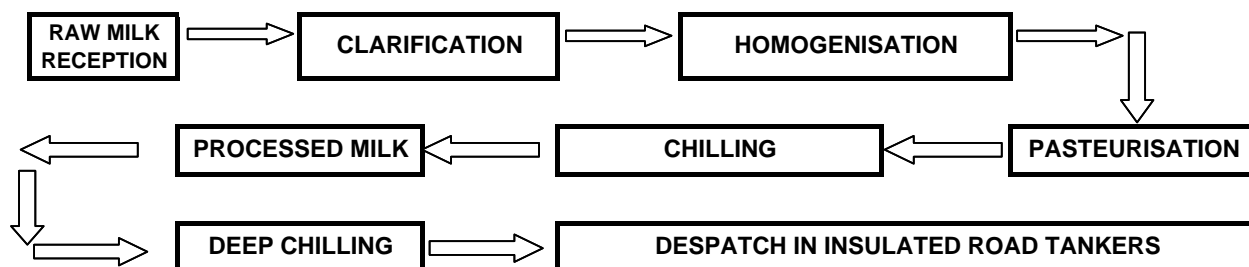
The company is a highly trusted household name for its wide range of milk products like Milk, Flavoured Milk, Ice-Cream, Dahi, Lassi, Table Butter, Dairy Whitner, Ghee etc.

Mother Dairy has taken up the concept of Total Productive Maintenance (TPM) whole heartedly. The number of employees involved in KAIZENS and the no. of KAIZENS per employee are very encouraging. Mother Dairy is a member of CII-TPM Club and the KAIZENS done by Mother Dairy employees have been selected and presented in 2nd and 3rd National Kaizen Conferances held on 7-8 October, 2003 & 1-2 September, 2004 respectively. Our TPM efforts have resulted in increase in MTBF and decrease in MTTR.



Mother Dairy has received "Best Productivity Performance" award for three consecutive years starting from 1987-88 to 1989-90 and again from 1995-96 to 1997-1998 from National productivity Council and a commendation Certificate for Rajiv Gandhi National Quality Award.

Process Flow Chart:

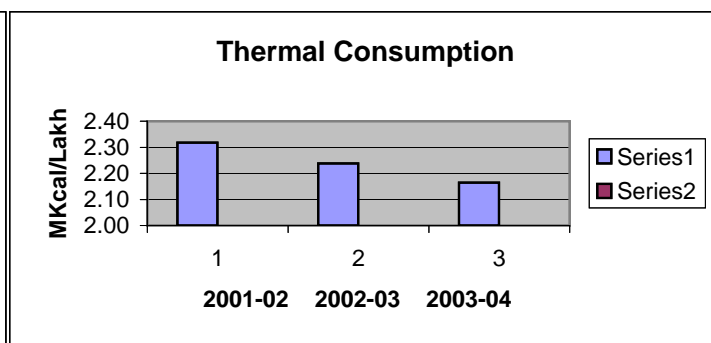
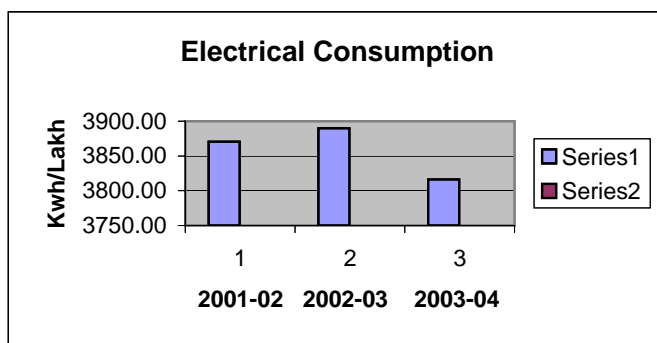


Energy Consumption:

There has been steady decrease in Electrical & Thermal consumption per equivalent lakh litres of milk due to implementation of various energy conservation improvements.

DESCRIPTION	UNIT	2001-02	2002-03	2003-04
Annual milk production	Lakh litres	2657.2	2525.8	3073.3
Total electrical energy consumption /annum	Lakh Kwh	102.85	98.25	117.28
Specific energy consumption-Electrical	Kwh/Lakh	3870.62	3889.86	3816.09
Total Thermal(Fuel) consumption /annum	Mkcal	6160.46	5653.63	6650.13
Specific energy consumption-Thermal(Fuel)	Mkcal/Lakh	2.32	2.24	2.16

YEAR	ELECTRICITY		THERMAL(FUEL)	
	Consumption (Kwh/Lakh)	% reduction over 2001-2002	Consumption (Mkcal/Lakh)	% reduction over 2001-2002
2001-02	3870.62	-	2.32	-
2002-03	3889.86	-0.50	2.24	3.45
2003-04	3816.09	1.41	2.16	6.67



Energy Conservation Commitment, Policy and Organizational Set up:

Mother Dairy has a single comprehensive policy named "MANAGEMENT SYSTEMS POLICY" incorporating the elements of Energy Conservation, Environment Management, Food Safety(HACCP), Quality Management System, Safety&Hygiene.Copy enclosed.

MANAGEMENT SYSTEMS POLICY

Our commitment is to excellence. The evolving needs of our customers drive us to continual improvement in our processes and systems. We are committed to:

Apply state of the art technology and processes to enhance productivity that ensures quality at competitive price.

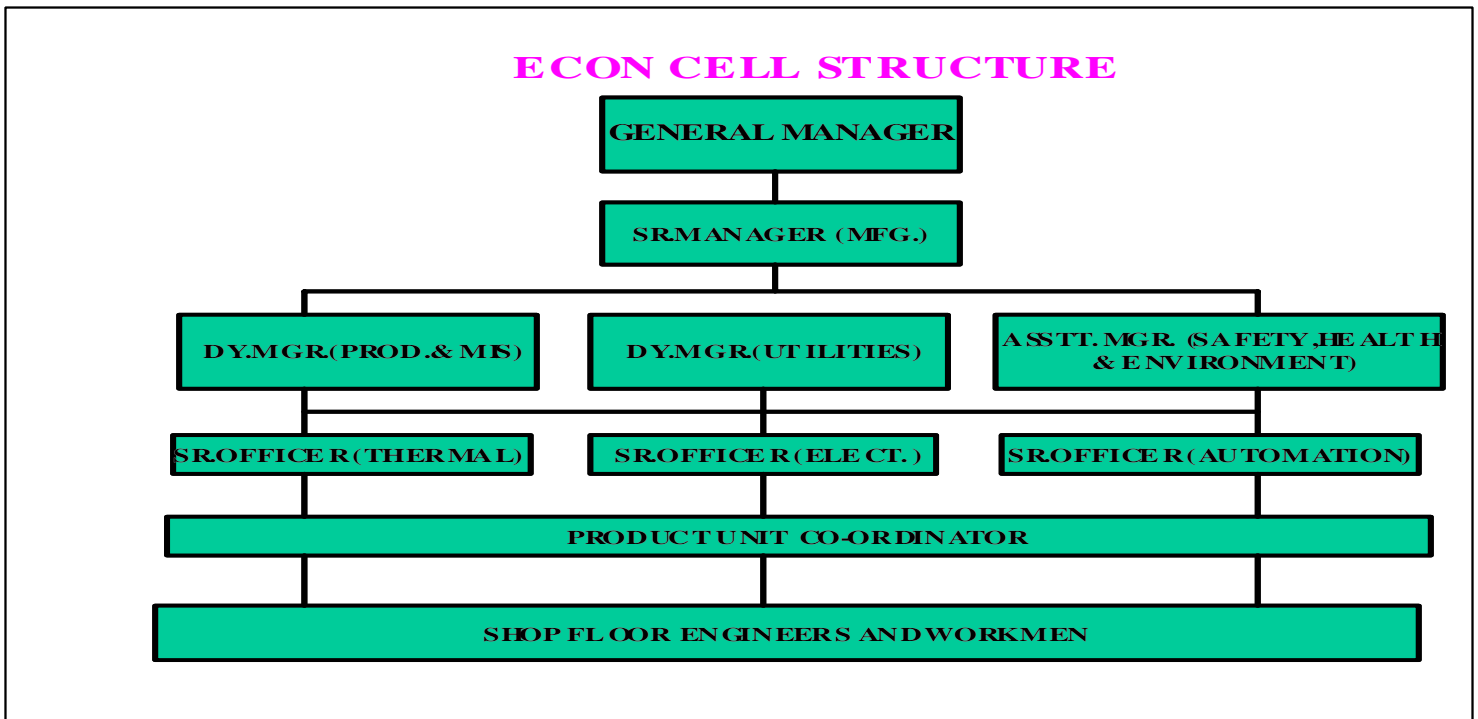
Apply processes for clean production, pollution prevention and optimize resource utilization in all operations.

Follow food safety management system and apply HACCP (Hazard Analysis Critical Control Points) principles to provide safe products to customers.

Develop and empower our people for maintaining a vibrant work environment, which encourages excellence.

Comply with applicable regulations and legislations.

We pledge to provide quality and safe products under clean and hygienic environment.



Environment and Safety:

Mother Dairy, Delhi is committed to the protection of environment by Prevention of Pollution and continual improvement in our processes and systems to improve Environmental Performance. The company is ISO14001:1996 (EMS) certified by BVQI. Mother Dairy was the first industry in country to implement ISO-14031 (Environment Performance Evaluation) project.

The following steps are taken and on going efforts are continuously made as per our "Management Systems Policy"

- Minimise waste generation
- Conservation of resources
- Use of renewable energy
- Recycling & reuse

The Effluent Treatment Plant (ETP) was installed at the inception of the Dairy Plant. The company complies with applicable regulations and legislations of Delhi Pollution Control Committee (Department Of Environment, Govt. of NCT of Delhi). The Dairy has reduced total effluent generation by 24% and water consumption by 29% during the period 2001- 02 to 2003- 04.

The water consumption has been reduced over the year as a result of the implementation of following initiatives:

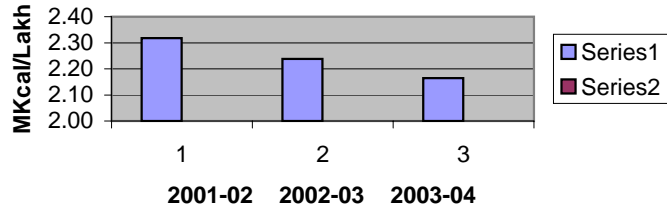
- ☆ Installation of water recuperation system in the year 2001-02 where in the final water rinse quantity after Cleaning In Place (CIP) is taken in the water recuperation tank for reuse as the initial rinse in the subsequent CIP operation.
- ☆ In-house water audit is carried out every year and by a continual process of educating the employees about the importance of water conservation and motivating them to do KAIZENS directed to reduce water consumption.
- ☆ Water consumption in all the activities in the Dairy is regularly monitored with the help of data furnished by magnetic flow meters installed at various locations.
- ☆ The effluent treated water is recycled for reuse in the lush green gardens of Dairy campus spread over an area of 36 acres.

The Dairy has installed a Solar Plant for hot water generation and solar heat recovery to the tune of 200 to 250 Mkal per annum is achieved through it.

The Dairy has constructed Rain Water Harvesting by dividing the entire premises into six zones to harvest maximum possible potential of rain water run-off available in the campus. Accordingly we have constructed rain water harvesting structures at the locations that experience water logging in each of the zones during rainy season. By this we have achieved increase in water table ranging from 30 cms to 150 cms in our existing tube wells in the Dairy.

Industrial safety is of paramount importance at Mother Dairy. A Safety Committee headed by Sr. Manager (Mfg.) as Chairman and members drawn from workmen and officers cadre from different sections meet regularly to review and initiate safety measures in all the activities of the Dairy. Number of mock drills are carried out from time to time. Internal safety audits are carried out to locate unsafe conditions, acts and thorough investigation of accidents if any, strict enforcement of safety rules and procedures including work permit system and use of Personal Protective Equipment (PPE). The Dairy is member of National Safety Council and also celebrates safety week every year. The Dairy has ZERO fatal accident since the date of its inception.

Thermal Consumption



Mazor projects implemented during the year 2003-04 are listed below:

ENERGY CONSERVATION PROJECTS

1 REPLACEMENT OF OLD PASTEURIZER OF LOWER REGENERATION EFFICIENCY WITH HIGHER REGENERATION EFFICIENCY PASTEURIZER

Investment :	Rs.16.61 lakhs
Before installation :	
Consumption of referigation units	280320 TR/annum
consumption of LDO	91980 Ltrs/annum

After installation :	
Consumption of referigation units	210240 TR/annum
consumption of LDO	65700 Ltrs/annum

Saving in :	
referigation units	70080 TR/annum
LDO	26280 Ltrs/annum

Saving : Rs.8.80 lakhs/annum



2 REPLACEMENT OF 2 NOS. OVERSIZED MOTORS WITH OPTIMUM SIZE MOTORS FOR CHILLED WATER PUMPS

Investment :	Rs. 0.8 lakh
Before installation :	
Consumption of Electrical energy	262800 Kwh/annum

After installation :	
Consumption of Electrical energy	192720 Kwh/annum

Saving in energy :	70080 Kwh/annum
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Saving : Rs. 3.15 lakhs/annum



3 AC VARIABLE FREQUENCY DRIVE FOR GLYCOL PUMP 15 KW

Investment :	Rs.1.1 lakhs
Before installation :	
Consumption of Electrical energy	109500 Kwh/annum

After installation :	
Consumption of Electrical energy	76650 Kwh/annum

Saving in energy :	32850 Kwh/annum
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Saving : Rs. 1.48 lakhs/annum



4 MODIFICATION IN COOLING TOWER TO INCREASING WATER FLOW TO REDUCE HEAD PRESSURE OF COMPRESSOR & AVOID VALVE THROTTLING

Investment : Rs. 0.5 lakh
Before installation :
Consumption of Electrical energy 4270500 Kwh/annum

After installation :
Consumption of Electrical energy 4078875 Kwh/annum

Saving in energy : 191625 Kwh/annum

Saving : Rs. 8.62 lakhs/annum



5 INSTALLATION OF CYCLIC LOAD CONTROLLERS FOR TWO NOS OF AIR COMPRESSORS TO CHANGE OVER MOTOR DELTA TO STAR DURING OFFLOAD

Investment : Rs. 0.45 lakh
Before installation :
Consumption of Electrical energy 190530 Kwh/annum

After installation :
Consumption of Electrical energy 157680 Kwh/annum

Saving in energy : 32850 Kwh/annum

Saving : Rs.1.48 lakhs/annum



6 OVERHAULING OF THREE NOS OF AIR COMPRESSORS TO ACHIEVE OPTIMUM VOLUMETRIC EFFICIENCY

Investment : Rs. 0.6 lakh
Before installation :
Consumption of Electrical energy 236520 Kwh/annum

After installation :
Consumption of Electrical energy 175200 Kwh/annum

Saving in energy : 61320 Kwh/annum

Saving : Rs. 2.76 lakhs/annum



7 IMPROVEMENT IN STREETLIGHTING AT MAIN GATE AND ETPLANT

Investment : Rs. 1.5 lakhs
Before installation :
Consumption of Electrical energy 37139 Kwh/annum
After installation :
Consumption of Electrical energy 12045 Kwh/annum
Saving in energy : 25093.75 Kwh/annum
Saving : Rs.1.13 lakhs/annum



8 USE OF ELECTRONIC CHOKES IN PLACE OF ELECTROMAGNETIC CHOKES (500 NOS)

Investment : Rs. 1.3 lakhs
Before installation :
Consumption of Electrical energy 161330 Kwh/annum
After installation :
Consumption of Electrical energy 130305 Kwh/annum
Saving in energy : 31025 Kwh/annum
Saving : Rs. 1.40 lakhs/annum



Mother Dairy, Delhi

In-house R&D project carried out for water de-contamination in the ammonia refrigeration system.

Contamination of ammonia in a refrigeration system with water changes the thermodynamic and physical properties of the ammonia-water solution so that a lower pressure in the evaporator has to be maintained to get the same temperature. Thus the capacity of the system is reduced as well as there is higher power consumption by the compressors. Moreover, the chemical properties of aqueous ammonia solution degrades the oil forming sludges and causes corrosion in all metallic parts and components.

Based on "Guidelines for water in Ammonia Refrigeration System" of "International Institute of Ammonia Refrigeration" a measuring kit for detection of water contamination was indigenously developed and the water content in ammonia in Mother Dairy Refrigeration System was measured and was found to be 4.5%. Also an "Ammonia Regenerator" based on above guidelines was got fabricated indigenously and put in operation on 27 Dec 2003. The water content has been reduced to 1%. The capital out lay was Rs. 65,000/- . The expected savings are estimated to be Rs. 6.94 Lakhs annually besides indirect benefits arising out of elimination of corrosion and enhancing the useful life of lubricating oil.

We feel, (if we are not wrong) that Mother Dairy, Delhi, is probably the only plant in India that has taken steps to mitigate the problems associated with water contamination in ammonia and improving the energy efficiency in refrigeration system and in our opinion it can be "Trend Setter"

