

WELCOME TO PRESENTATION

ON

TOTAL ENERGY MANAGEMENT

**KOTTAYAM
DAIRY**

General Information

- **Capacity** : 3000 LPD
- **Expanded to** : 30,000 LPD
- **Started in** : 1970
- **Storage Capacity** : 60,000 LPD
- **Present Handling** : 55,000 LPD

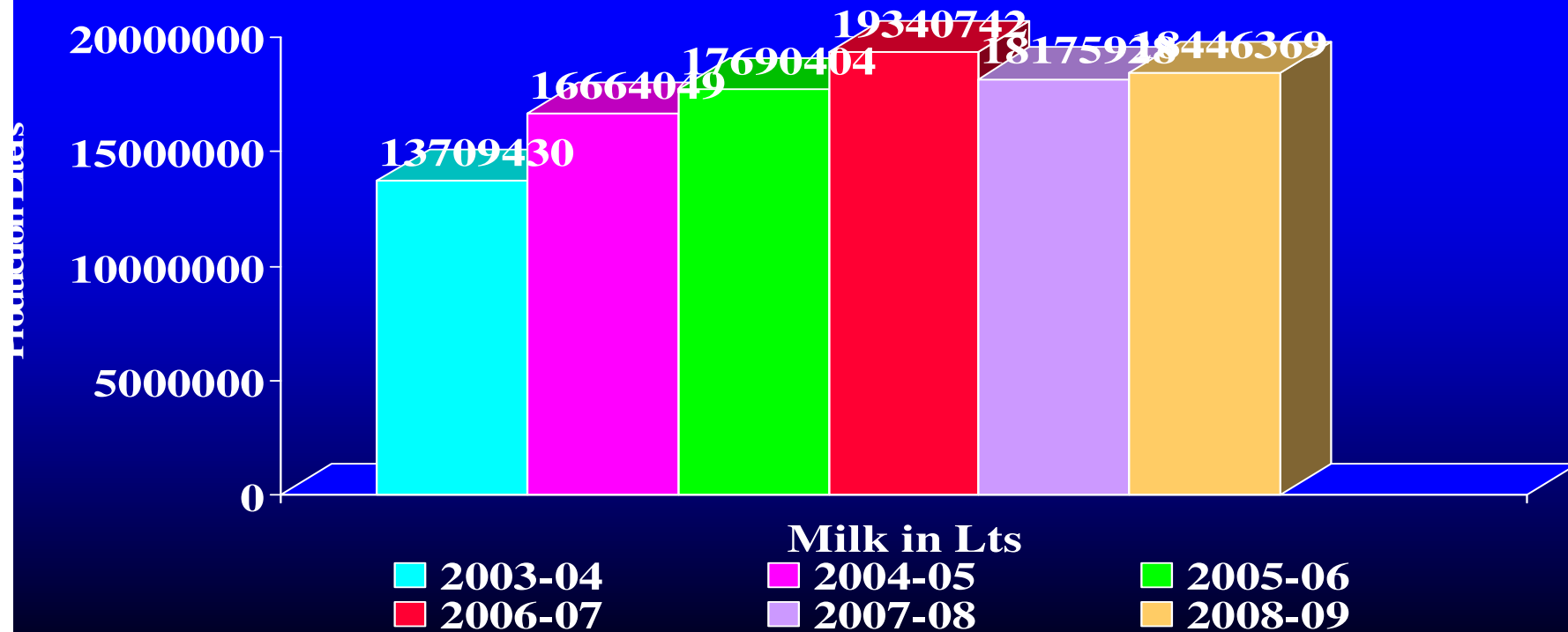
The Plant was run by Kottayam Milk Supplies Union and then taken over by the Department of Dairy Development, Govt. of Kerala and then handed over to KCMMF during 1985 and later came under the control of ERCMPU Ltd.

The Plant is situated at Vadavathoor, Kottayam - Kumali Road, 5 km away from Kottayam Town

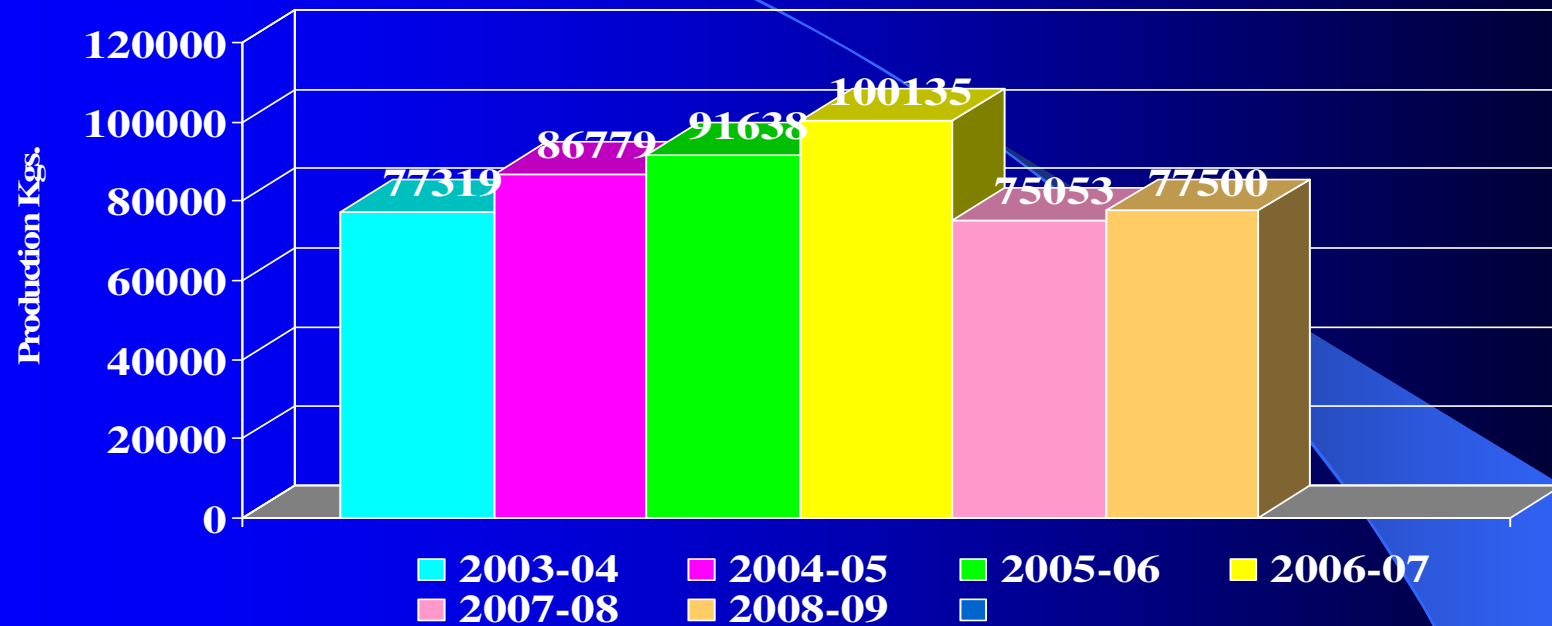
PRODUCTS

- Curd
- Sambharam
- Milk 2 Varieties (Toned Milk & Jersey Milk)
- Ghee

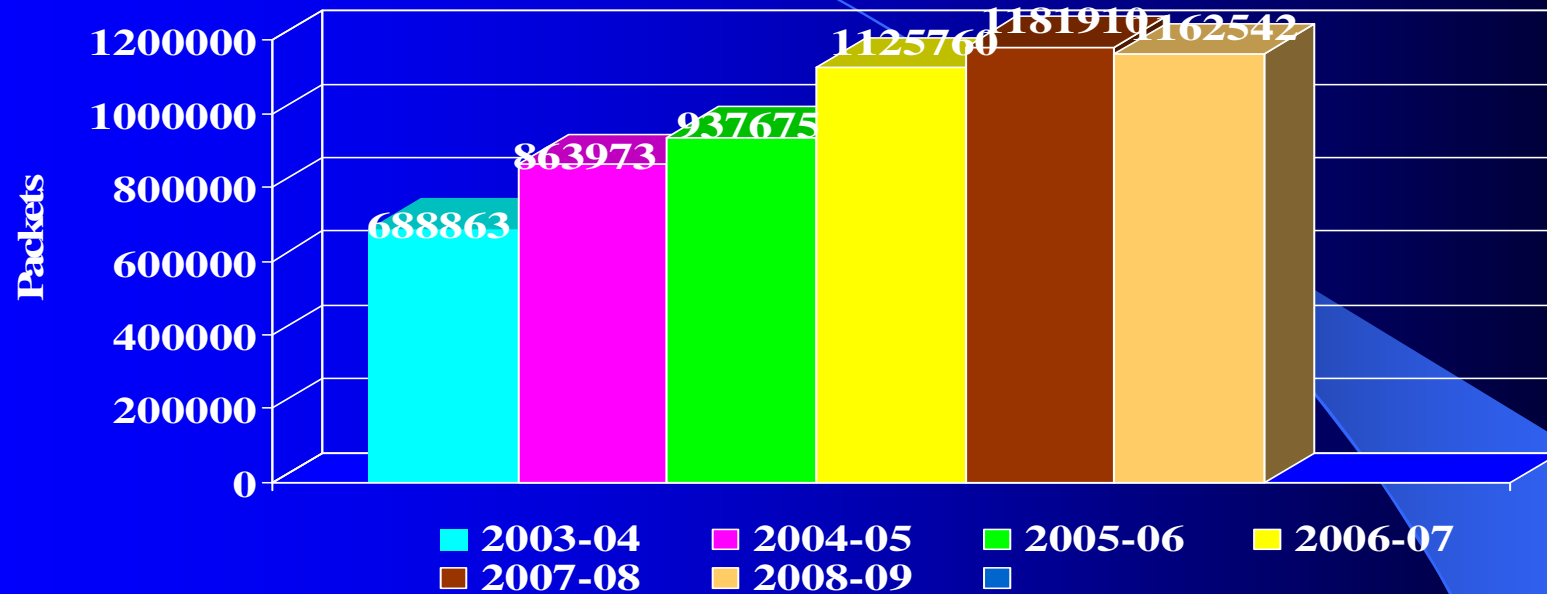
Production Details – Milk in Lts



Production Details – Ghee in kg



Production Details – Curd in Kg



ENERGY CONSUMPTION PATTERN (In Qty basis)

Period	Milk Processed	Furnace Oil Used	Kwh Used	Water Used	Diesel for Genset
2006-07	19340742	153653	647586	40615558	4929
2007-08	15446369	142262	646173	30892738	9074
2008-09	18175928	145740	642699	34534263	11459

Energy Consumption Pattern (In Unit basis)

Period	Milk Processed	Ltrs/ Ltr of FO	Ltrs/Kwh	Water/ Milk Ltr
2006-07	19340742	126.00	28.00	2.10
2007-08	18446369	125.00	29.00	2.00
2008-09	18175928	130.00	29.00	1.9

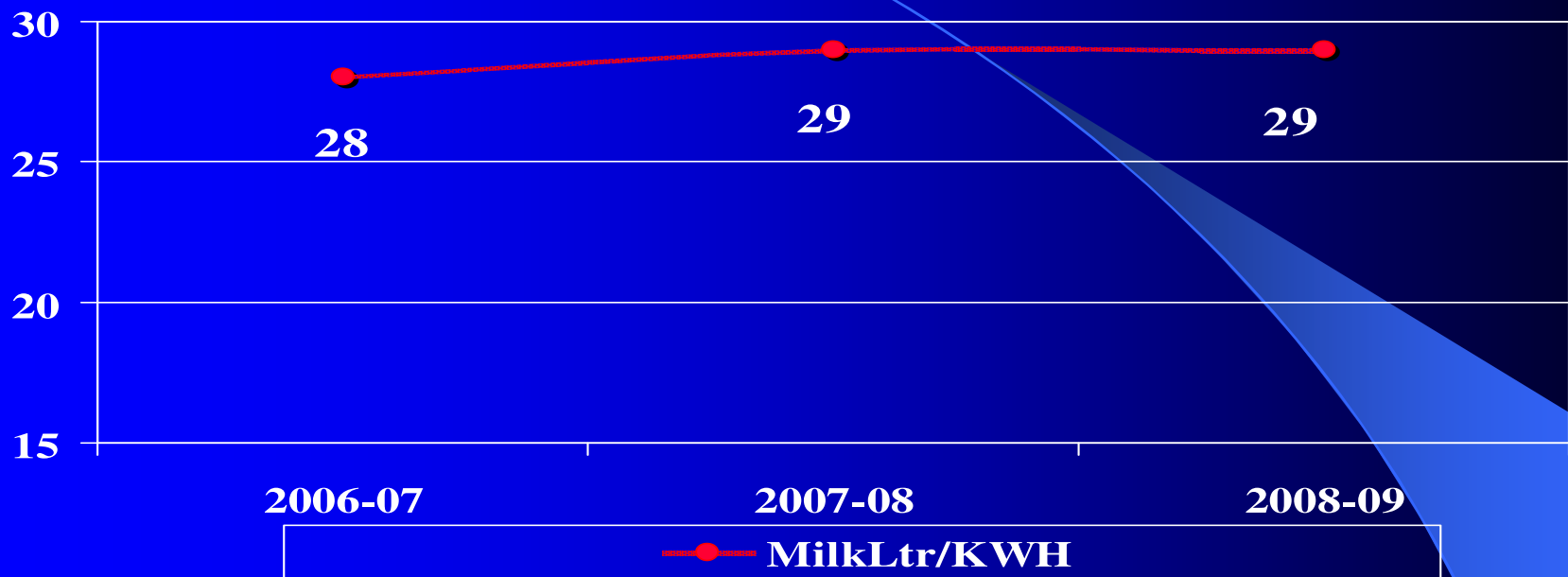
Energy consumption pattern

Milk Ltr / FO ltr



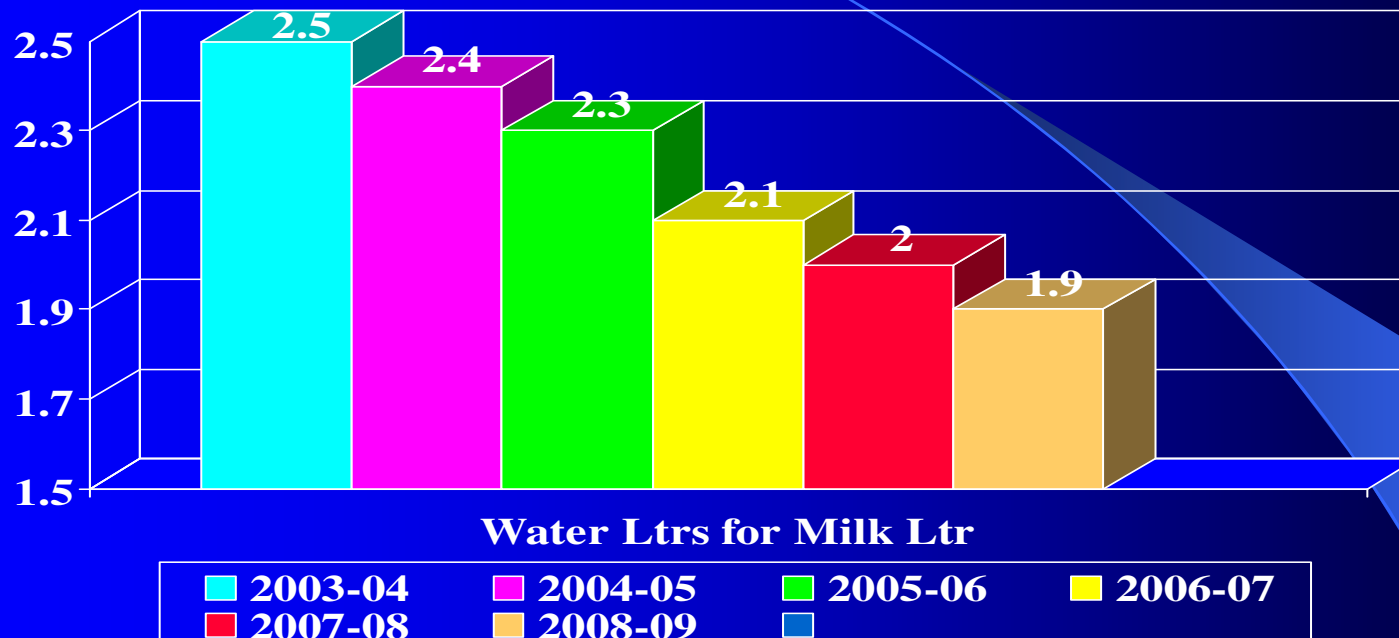
Energy consumption pattern

Milk Ltr / KWH

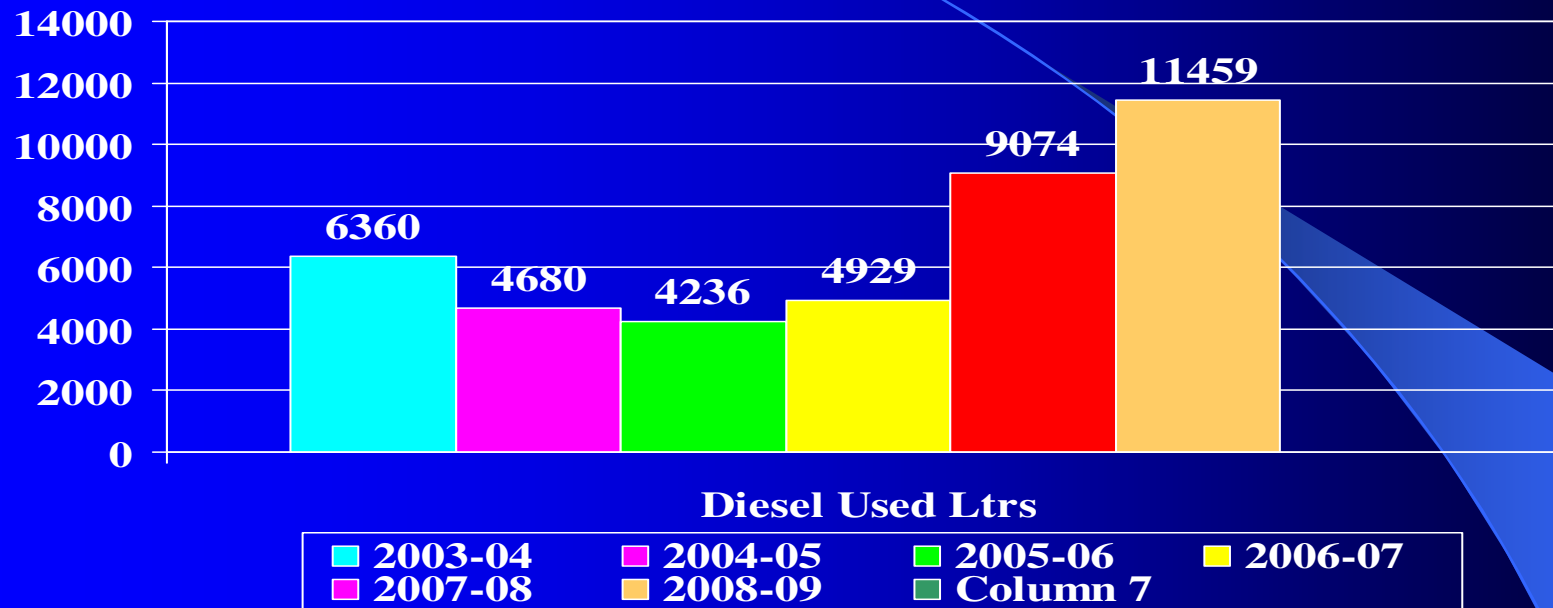


Energy consumption pattern

Water Ltr / Milk Ltr



Energy consumption pattern HSD



Energy Consumption Comparison

	2007-08	2008-09	Savings
Litres / KWH	29	29	0
Litres / 1 Lt FO	125	130	5

Savings

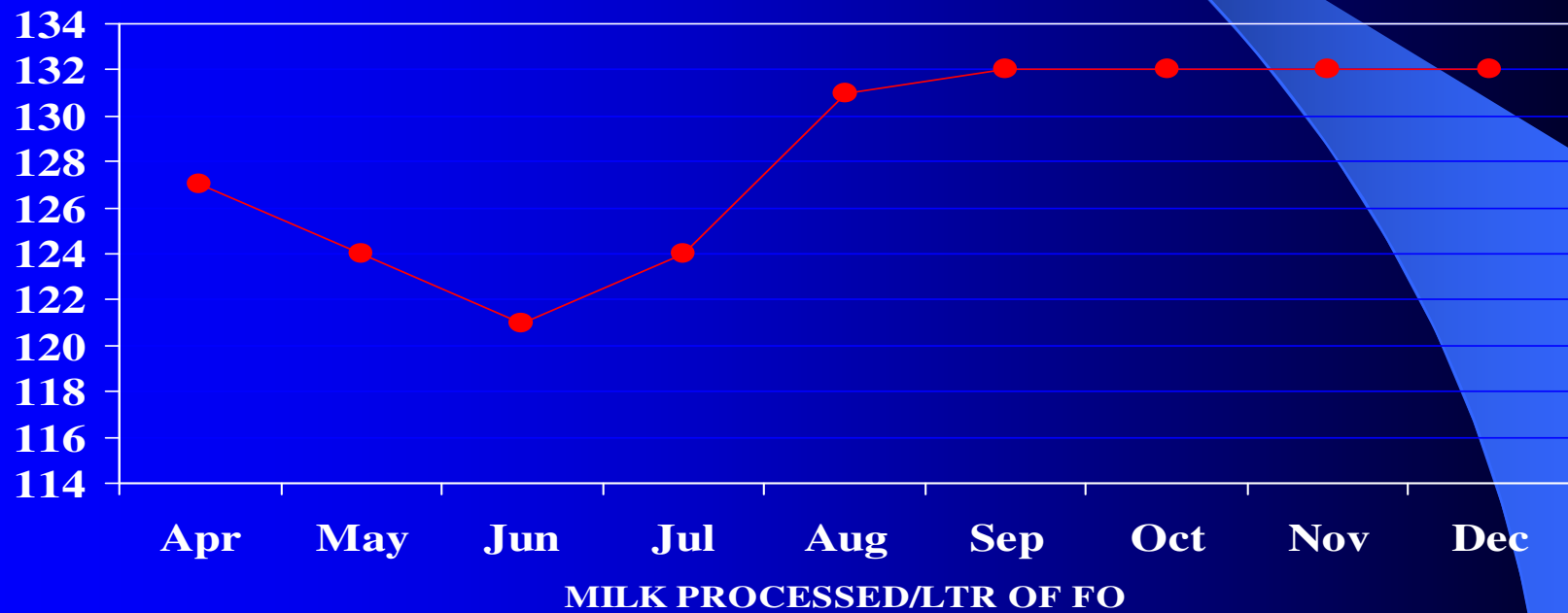
2005-06 With Respect To 2004-05, - 2008-2009 with Respect To 2007-2008

- **Electrical Energy Saving :-** **Maintaining 29 Lts/KWH**
33755 unit x Rs.3/- = 1,01,265/-
- **Furnace Oil Saving :**
11938x Rs 17.00 = 2,02,946 **5592 x Rs.33 = 184536**

MONTH WISE PRODUCTION DETAILS
Furnace Oil (April 09– December 09)

MONTH	MILK PROCESSED	FUR.OIL	LRS/1LT FO
APR	1605725	12660	127
MAY	1706202	13750	124
JUN	1587200	13168	121
JUL	1609255	13020	124
AUG	1781525	13620	131
SEP	1730320	13108	132
OCT	1691165	12812	132
NOV	1642619	12444	132
DEC	1595044	12050	132

Production Details – Month wise Milk Ltr / FO ltr -2010



**PRODUCTION DETAILS-MONTH WISE (APRIL09-DEC09)IN MILK
Ltr/Kwh**

MONTH	MILK.PROC	KWH/CONSUMPTION	LTRS/KWH
Apr	1605725	56061	29
May	1706202	57105	30
Jun	1587200	56196	28
Jul	1609255	56670	28
Aug	1781525	49656	36
Sep	1730320	70239	25
Oct	1691165	62397	27
Nov	1642619	58719	28
Dec	1595044	63780	25

Energy Saving opportunities identified (Without investment)

- **Curd manufacturing through HTST Pasteurizer.**
- **Changed air compressor setting based on energy audit.**
- **Conventional changes to Electronic Choke.**
- **Replaced all leaky valves, steam traps etc.**
- **Replaced incandescent lamp with CFL.**
- **Changes in Pasteurizer sterilization procedure.**
- **Tube cleaning of boiler is being done on regular basis, ie, once in two months.**
- **Arrested steam leakages.**
- **Heat recovery from furnace oil return line by providing feed water line to boiler through it.**

The following are the measures taken, as against those identified during last review meeting

Short Term

- **Float type steam trap for ghee boiler** - **Provided**
- **Condensate recovery 1000 LPD(Appr.)** - **Provided**
- **Insulation in un-insulated areas of pipes/equipment** - **In Progress**
- **Chemical dozing feed water line in boiler** - **Provided**
- **Low/High level controller for OH tank** - **Provided**
- **Replace MV lamp with HP Sodium Vapour Lamp** - **Replaced**
- **Separate flow meter in water line for process** - **Provided**

Long Term

- **Solar System for boiler feed water** - **Taken up**
- **Flue gas analyzer** - **Action Taken**
- **Auto blow down control system in boiler** - **Taken up**
- **Soft starter in Ref. Compressor** - **Taken up**
- **Replace motor with energy efficient motors** - **Taken up**

Target for year 2010-11

WATER LTRS/ MILK LTRS	MILK LTRS/KWH	MILK LTRS/FO LTRS
1.6	30.00	131.00

NAME OF TEM COMMITTEE MEMBERS

1	A.M MOHANAN	MANAGER
2	T.K KURIAN	DEPUTY ENGINEER
3	LINI SOOSAN JOHN	TECH.OFFICER
4	C.O POULOSE	TECH.NICIAN
5	T.A VARGHESE	TECHNICIAN
6	P.SAMPATHKUMAR	TECHNICIAN

THANKS