

# MALNAD COLLEGE OF ENGINEERING

(An Autonomous Institution under Visvesvaraya Technological University, Belagavi)



Hassan – 573202, Karnataka, India

## **Social Connect and Responsibility**

**(22AI308)**

Activity Report on:

“KMF Visit”

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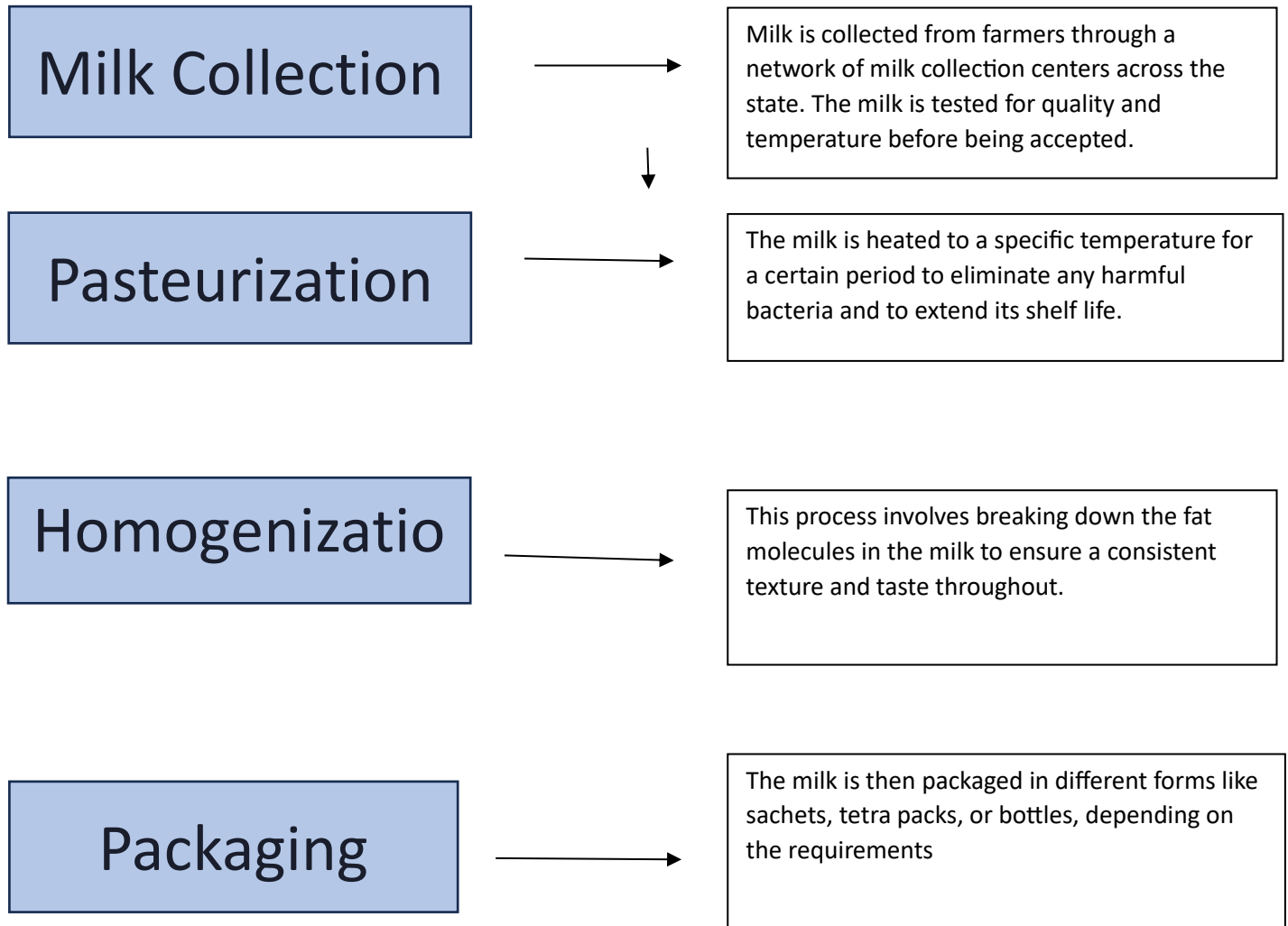
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## What is KMF?

Karnataka Cooperative Milk Producers' Federation Limited (KMF) is the apex body for the dairy cooperative movement in Karnataka and the second largest dairy co-operative in India. Under the brand "Nandini," KMF markets pure and fresh milk and milk products. It operates through 16 Milk Unions covering all districts of the state, procuring milk from Primary Dairy Cooperative Societies (DCS) and distributing it across various markets. KMF follows the successful three-tier Anand Pattern, fostering a self-sustaining rural economy based on cooperative dairying. It has effectively transformed dairying into an industry and significantly impacted the rural landscape. By providing remunerative prices to farmers, efficient input services, and quality products, KMF has gained widespread patronage from farmers, dominating the milk procurement market in Karnataka.

Karnataka Cooperative Milk Producers' Federation Limited (KMF) is the Apex Body for the dairy co-operative movement in Karnataka. It is the second largest dairy co-operative amongst the dairy cooperatives in the country. In South India it stands first in terms of procurement as well as sales. One of the core functions of the Federation is marketing of Milk and Milk Products. The Brand "Nandini" is the household name for Pure and Fresh milk and milk products. KMF has 16 Milk Unions covering all the districts of the State which procure milk from Primary Dairy Cooperative Societies (DCS) and distribute milk to the consumers in various Towns/Cities/Rural markets in Karnataka. Karnataka Dairy Development Cooperation (KDDC), the first ever World Bank/ International Development Agency funded Dairy Development Program in the country started in Karnataka on co-operative lines with the organization of Village Level Dairy Co-operatives in 1974. The AMUL pattern of dairy co-operatives started functioning in Karnataka from 1974-75 with the financial assistance from World Bank/IDA, Operation Flood II & III. The Anand Pattern three tier organization structure – Dairy Cooperative Societies at the village level, District Milk Unions at the District level to take care of the procurement, processing and marketing of milk and provide technical input services for enhancing milk production at producers level and Federation at the state level to co-ordinate the growth of the sector in the State, are resolutely and harmoniously working hand-in-hand in creating self-sustaining rural economy based on cooperative dairying. KMF is one of the few federations in the country, who have converted dairying from a subsidiary occupation into an industry. Coordination of activities among the Unions and developing market for Milk and Milk products is the responsibility of KMF. Marketing Milk in the respective jurisdiction is organized by the respective Milk Unions. Surplus/deficit of liquid milk among the member Milk Unions is monitored by the Federation. While the marketing of all the Milk Products is organized by KMF, both within and outside the State, all the Milk and Milk products are sold under a common brand name NANDINI.

## PROCESSING OF MILK AT KMF:



### PET Bottling

From reception intake the milk is sent to PET bottling before starting any process. The milk is heated at 135 to 137 °C to kill all the bacteria in the milk, which helps to store the milk around 5 to 6 months. From here. A septic condition is maintained as septic condition is where, it prevents any sort of parasitic attack to the milk, which helps in preventing the milk from mixing of any impurities.

## Mixer

After this process, it is sent to it is sent to mixers where the milk is mixed with the color flavor sweetness as essential and then sent to the sterilizer through PMST and HMST PMST is parallel milk storage tanks and HMST is, horizontal milk storage tanks.

## PET Bottles manufacturing:

- These pet bottles are made using preform bottles which are imported as raw materials from other factories
- The per form bottles at first heated at certain temp with the help of a large oven .After heating the pet bottles are provided an air pressure of 30 ton
- After the bottles are made it is sent to washers where it is washed 3 times once using parasitic acid and twice with water, then sent to fillers
- In the same way the caps of the bottle are also imported as raw material from other factories
- The caps stored in a container are sent to a scanner through conveyer belts where the scanner scans the cap if defected separate to disposal
- Then the fit to use cap are also sent to washer it is also washed 3 times once with parasitic acid and twice with water, then sent to capping machine

## Sterilizer:

- Then it is sent to sterilizer where sterilizer produce some amount of pressure with which the different sized fat globules are braked down into equal size throughout.
- After sterilization it is stored in all safe storage tank.
- All safe storage tank is tank which contains 2 layers inside in the outer layer chilled water is filled and inner layer sterilized milk which helps in safe storage of milk to avoid contamination.

### **Filling and capping:**

- Now the prepared pet bottles are sent to fillers to fill milkshakes milk etc.
- After filling the bottles are sent to capping machine where the bottles are capped in a turning mechanism.
- Then it is further moved on a conveyor belt which consist of sensor setup where the sensor sense the improperly sealed bottles on **FT system**.
- The improper sealed bottles are taken out.

### **Sleeving and manufacturing data:**

- After this 2 printing takes place on the bottle one is laser painting and the other is ink printing which consist of the manufacturing data.
- From here it is sent to bottle dryer which dries up the water droplets on the bottle before sleeving.
- After drying up the bottle it is sent sleeving machine where the bottle is covered with some fancy plastic cover which represent the logo of the company and name of the product and other needed data.
- Then it is sent into steam tunnels which provides a temperature of 80°C which helps in shrinking of covering plastic.

## **Sealing and dispatch:**

- Then after it passes on to SMI machine where the bottles are arranged using dividing bars which divides and arranges the bottle on cardboard simultaneously. It is arranged in the form of 12 bottles in case of 1ltr and 30 bottles in case of 200ml.
- After this the final process is wrapping up the bottle case. This process is called filming in which the case is covered by plastic film then the film wrapper is shrieked using steam tunnels which provide 200°C temperature.

## **CONCLUSION:**

- Overall the processing and techniques involved in KMF's operations ensure that the milk and dairy products they produce are of high quality, safe, and have a longer shelf life, which benefits both the farmers and the consumers.
- Man power can be used efficiently. No need to have more man power. Some chemical pressures are released inside the premises, these pressures may be released on the high air which avoids odour in the premises.

