

NAME OF THE PROJECT: EPXPOSURE VISIT FOR DAIRY INDUSTRY (Star Milk Pvt. Ltd)

SESSION: 2022-23

DEPARTMENT: Microbiology

SEMESTER: 5

OBJECTIVE: To have the students get exposed to industrial environment as a part of practical experience

OUTCOME: Students had the opportunity to observe the different procedures undertaken by the industry professionals to make consumable products of everyday use

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Introduction:-

Industrial visit is considered as one of the tactical methods of teaching. The main reason behind this is it lets students to know things practically through interactions. It gives the students an exposure to current work practices as apposed to theoretical knowledge being taught at their college classroom.

Industrial visit grant the student a great opportunity to interact with industries and know more about industrial environment. The practical knowledge of how a business can be started and what are the real life challenges being faced can only be learnt through practical experience from industrial visit.

For our industrial visit we went to Star Milk Product Pvt. Ltd, situated at Pursura in Tarakeswar in 24th October. We are accompanied by 2 of our Departmental Teachers. We reached Star Milk Product Pvt. Ltd. at 12:30 PM. After that we all gathered with the lab incharge of company's profile and its present functioning in dairy industry. He showed us around the entire unit, learning about the procedure, followed for producing milk and milk products.

Star Milk Products Pvt. Ltd based in West Bengal is a recent organization in the food and beverage industry. They focus on providing, premium quality milk variants and other dairy products to the customers.

It is ensured that all the milk products are of high nutritional value as well as good in taste and flavour. Their aim is to set up new benchmark in standards of milk quality reflected in its taste, freshness, hygiene and availability.

Packet Milk



Fig→ Packet Milk

Upstream processing comprises of tasks in the initial stages of the fermentation process. This includes all steps related to the development of microorganisms (collections), treatment of raw material, nutritional preparation, cell culture, cell separation and harvesting.

Milk (raw milk) is procured on daily basis from the different districts in West Bengal. The company vehicles collect the raw milk from different procurement centers to the industry milk producing villages. They maintain proper quality of the collected milk to ensure fresh quality of milk to be used in processing. Strict quality checks are performed for all incoming milk received at Dairy units.

The fresh milk is cooled by chiller to 4°C or more and put into the raw milk storage tank.

The milk from the raw milk storage tank reaches the pasteurization unit and then the milk is first pre-heated between 35°C to 40°C . The preheated milk is then filtered and clarified. These are the important steps to remove all the extraneous and foreign particles present in the milk.

The milk is then heated in the pasteurizer between 50°C and 55°C and then different variant milk is prepared like full cream, skim milk, toned milk, double toned milk etc.

The standardized milk goes to the pasteurizer unit and the extra cream is pasteurized and stored in the cream tank. It is then heated in a pasteurizer to approximately 60°C to 65°C . After this, the milk reaches the homogenizer through the pipeline where homogenization milk is done. Next the milk is returned to the pasteurizer and the milk is heated to 72°C and is held in the holding tube for 15 sec. After that milk is quickly cooled to a temperature of 5°C or less and stored in pasteurized milk storage tank. From there the milk is then filled into special type of polythene pouches by the packaging machine.

The weight, price, sell life and legal std. and brand name of the milk are required to provide on the pouch. After packaging packets are stored in cold storage with temperature of 5°C or less. After storage the packet milk is ready for market sell.

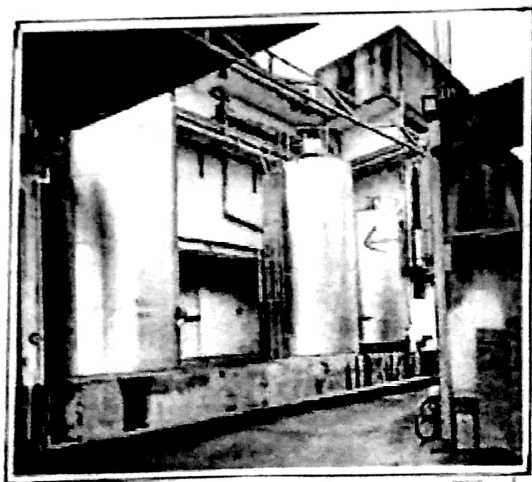
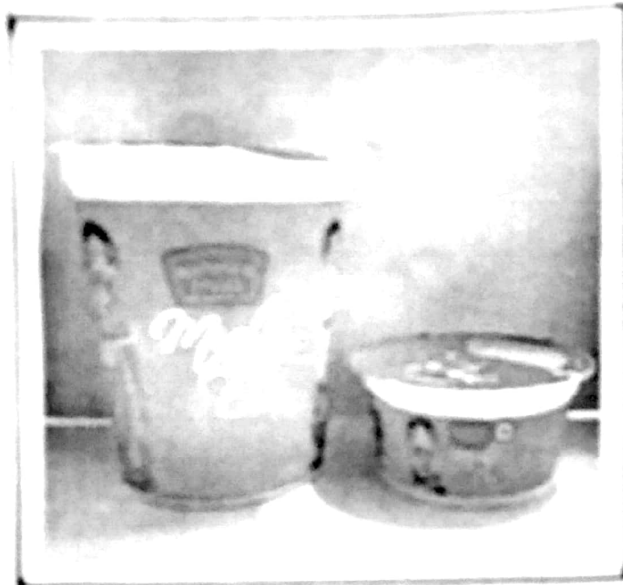


Fig -> Raw Milk Storage Tank

Dahi



2 - pots

The company vehicles collect the raw milk from different procurement centers to the dairy milk producing villages. They maintain proper quality of the collected milk to ensure fresh quality of milk to be used in processing.

Raw milk is collected and then that milk would be tested. The tested good quality milk is passed through the chilling process. Milk is then filtered and stored in a storage tank under a controlled environment at 4°C temperature. After the milk is cooled, fat and non fat content is balanced as per the final products fat content requirement. After this milk is pasteurized, where milk is heated at 80°C - 85°C temperature for 30 minutes and then cooled to 42°C temp. After this microbial culture is added and stirred properly.

Polystyrene and polypropylene HIPS cups with aluminium foil base peelable lids are used. These cups are available in capacities of 250 grams and 400 grams and provide a shelf life of about 10 days under refrigeration. The plastic cups are light in weight, easy to handle and hygienic various packaging machines of upto 400 cups/min speed are available to package.

For extended shelf life this packed product is arranged in cases or crates and transferred to incubation room maintained at 37°C to 42°C . The product is incubated till its pH reaches 4.4 to 4.5 and then it is cooled rapidly to less than 5°C by exposing the cups to high velocity cold air. Dahi is normally stored at 4°C to 5°C . Storage area should be maintained clean and tidy to avoid any cross contamination.

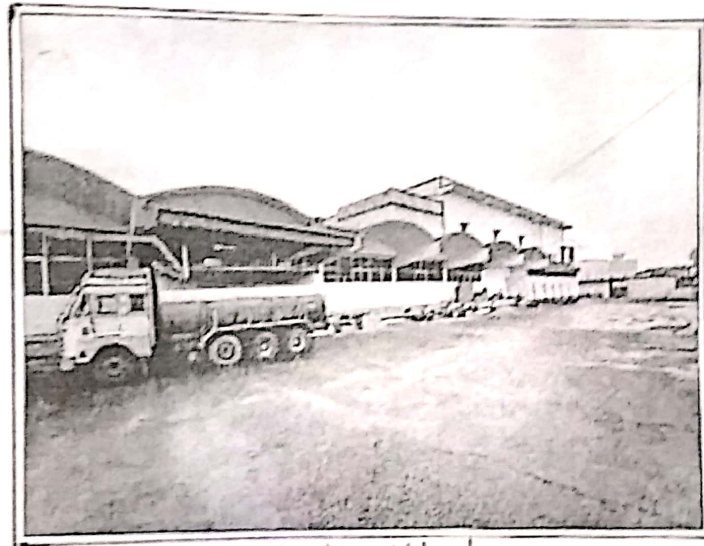


Fig. 17 Company Vehicle

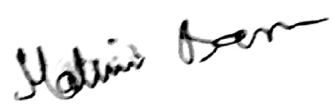
Acknowledgement :-

We are deeply indebted to our teachers for providing such a wonderful experience to visit a well known Industry (Star Milk Pvt Ltd).

From there we gathered some knowledge about various kind of milk product and also enjoyed the pleasure of being made of these product in our own eyes.

We are very thankful to the representative of the company to make these things easier to understand and also thankful to our teachers to us a great day.


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