

# MINI DAIRY UNIT

Centurion University of Technology and Management, Odisha

**Milk Processing:** The dairy plant has been set up in the premises of CUTM Paralakhemundi to process milk to increase its shelf-life and convert it into various value-added products such as khoa, ghee, paneer, cream, curd etc. The objective of this unit is to provide hands-on training on dairy products processing to the students and thus promoting entrepreneurship development. Also, it is regularly operated and maintained by skilled personnel to ensure functional and commercial viability of the plant.

Different equipment installed in dairy unit are:



**Pasteurization unit:** Pasteurization inactivates some undesirable enzymes and reduces number of many spoilage bacteria resulting in increase in shelf life of the milk up to 2 – 16 days depending upon the processing condition, type of packaging and storage conditions. A continuous plate pasteurizer based on high temperature short-time (HTST) method is used for pasteurization. Other than this, storage tank, boiler, chiller and homogenizer are part of the whole pasteurization assembly.

**Cream Separator:** One of the first unit operations in the processing of fluid milk is the separation of cream from skim. Separation essentially produces a fraction of the aqueous phase devoid of fat globules (skim) and a fraction of the aqueous phase enriched in fat globules (cream). A centrifugal separator has been installed in the dairy unit for cream separation from the milk. The separated cream is further used for ghee preparation.



**Khoa making machine:** A batch type mechanically agitated khoa making machine having a capacity of 120 Litres is installed in the unit for rabadi/khoa preparation. Continuous stirring prevents charring of the milk.

**Form-Fill-Seal packaging machine:** Liquid milk packaging machine based on form-fill-seal technology is installed in the dairy unit for packing of pasteurized milk. It has a capacity of packing 250 Litres milk per hour.



**Spray Dryer:** Spray drying unit is also installed as a part of dairy unit for production of milk powder from liquid milk. It is a quick drying process utilizing hot air for drying of atomized liquid droplets.