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Dairy Building planning

**DEPARTMENT OF AGRICULTURAL ENGINEERING, SoABE
CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT
PARALAKHEMUNDI, ODISHA**



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Outline

- Introduction
- Raw milk collection and reception
- Processing of milk
- Manufacture of dairy products
- Importance of planning and principles of dairy plant design
- Dairy building planning



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Introduction

Dairy Plants are engaged in processing of milk and manufacture of various dairy products. It is estimated that about 20-25 % of the milk produced in India is being processed by organized dairy plants. The planning of dairy and principles of dairy plant layout mainly depends on the type of the products manufactured and the capacity of the plant.



Raw milk collection and reception

The milk is collected from the milk producers society and the collected milk in milk cans is transported through truck to milk processing plants.

The concept of establishing chilling center at appropriate location came in to existence to cool the milk in the respective chilling center and the chilled milk is transported to the milk processing plant.

The capacity of the plant and level of automation required in the plant are also important in design of dairy plant. It is also necessary to consider CIP method at the stage of planning a dairy plant. Source of water and its distribution is a factor to be considered at planning stage of a dairy plant. Depending on the method of milk collection and reception, it is necessary to plan the reception dock.



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Importance of Dairy plant design

Dairy Plant design, involves the estimation of capacity, process scheduling and proper layout so as to achieve the objective of handling milk at the least cost and greatest safety. However, the dairy industry and the plant design has to meet certain special requirements and need to be focused on these. The following are the few aspects that make the dairy industry as a unique one.



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Importance and economics of plant design

The subject Dairy Plant Design and Layout is the designing of layout plan for a dairy plant, i.e., layout for different sections in the dairy building, equipment layout, laying of dairy machines in such a manner that it allows efficient and economical movement of men and material in the plant in each section. The subject contains several applications of fundamental topics, such as locations site selection, building materials, specific requirements of each section including service sections.



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Legal and commercial aspects of plant design

Safety and good working conditions are very necessary in a proper plant layout. Minimized hazards at the working stations, in material handling, storage, maintenance operations and so on are features of good plant layout. Minimum man hour losses, reduction in capital equipment and material losses incorporate improved working conditions. Increased employee moral tends to reduce production costs and helps develop a stable operating force.



Advantages of a good plant layout

1. A good layout reduces
 - a. the effort in normal material handling of a worker
 - b. cost of handling by direct labor and hence increased productivity per man hour and
 - c. indirect manufacturing cost by decreasing spoilage under difficult handling situation
2. It uses only essential space required and eliminate congestion and accident, permits flexibility for methods improvement and future expansion besides making supervision easier.
3. It also facilitates scheduling and despatching operation.



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Thank you