Dairy Products Manufacturing Process

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1. pasteurized milk production line

Pasteurized milk production process: Milk collection system → Sterilization and homogenization → Cooling → Filling → Refrigeration

Pasteurized milk is made from fresh cow's milk using pasteurization. Its characteristic is the use of low-temperature sterilization at approximately 72-85℃, which kills harmful bacteria while preserving nutrients and flavor. After centrifugation, standardization, homogenization, sterilization, and cooling, it is packaged in liquid form and directly supplied to consumers. Raw materials can include cow's milk, goat's milk, yak milk, camel milk, etc. After pasteurization and homogenization, it is directly packaged without any additives. Due to the low-temperature sterilization, it retains extremely precious and rare beneficial bioactive substances in the milk, which is the main difference between pasteurized milk and UHT milk.

Generally, cooling, centrifugation, and pasteurization are essential stages in the production of pasteurized milk. The purpose of pasteurization is primarily to kill all microorganisms that cause human diseases; pasteurized products must be completely free of pathogenic microorganisms. From the perspective of killing microorganisms, the stronger the heat treatment of the milk, the better. However, harsh heat treatment can have adverse effects on the appearance, taste, and nutritional value of milk. For example, the proteins in milk will denature at high temperatures; intense heating alters the taste of milk, initially producing a "cooked" flavor, followed by a burnt flavor. Therefore, the choice of time and temperature combination must consider both microbiological factors and product quality.

Pasteurized milk is a type of "low-temperature sterilized milk." While harmful microorganisms in the raw milk are generally killed, some other microorganisms may remain. Therefore, from the moment it leaves the production line to transportation, sales, and storage, this type of milk requires refrigeration at around 4° C to prevent the microorganisms from becoming active. Hence, pasteurized milk is also called "refrigerated milk."

2.UHT milk production line
Process Flow: Milk Collection System → Cooling → Filtration → Homogenization → Deaeration → Sterilization → Filling

UHT milk is generally made from milk powder and fresh milk. The finished product is typically packaged in aseptic bags or aseptic boxes.

UHT milk, also known as UHT milk, is milk produced using ultra-high temperature (UHT) sterilization technology and packaged in aseptic packaging. The production process involves heating the milk at 135–150 degrees Celsius for 2–3 seconds and then rapidly cooling it to room temperature. This instant sterilization kills bacteria and microorganisms while preserving the milk's nutrients and flavor. UHT milk is usually packaged in aseptic composite paper, allowing it to maintain a long shelf life at room temperature without refrigeration or preservatives.

3.Yogurt production line

Yogurt Production Process: Milk → Standardization → Mixing → Sterilization and Homogenization → Fermentation → Cooling → Filling → Refrigeration

This production line is used for the production of yogurt and fermented milk. The entire line includes milk receiving, standardization, mixing, deaeration, homogenization and sterilization, fermentation, cooling, filling, and CIP systems.

Yogurt is mainly classified into the following types: 1. Fermented yogurt after filling; 2. Filled yogurt after fermentation; 3. Fermented mixed yogurt; 4. Yogurt mixed with milk powder.

Yogurt is a dairy product made from milk or milk powder. After pasteurization, beneficial bacteria (fermenting agents) are added to the milk, followed by fermentation, and then cooling and filling. Currently, most yogurt products on the market are set-type, stirred-type, and fruit-flavored types with added fruit juices, jams, and other ingredients. Due to the fermentation action of lactic acid bacteria, the nutritional components of yogurt are improved, and the beneficial effects of lactic acid bacteria are also enhanced. Yogurt not only retains all the advantages of milk, but also mitigates some of its disadvantages through processing, making it a food with certain health benefits.