

The Modern Technologies of Dairy Products' production

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Introduction. The dairy industry plays an important role in our daily life. It is difficult to realize how fast changes are taking place in the dairy industry. Milk is unique in its content of valuable nutrients. In order to prepare such a diversity of products, many different processes have been developed by the industry. There are numerous types of milk products such as ghee, butter, cheese, yogurt, ice cream powder, baby cereal food, cream, and so on. Each of these has been designed to take advantage of some particular property of milk.

The modern manufacturing technologies of dairy products include preparation of raw materials, normalization of milk or creams on fat, heat treatment, homogenization, cooling to a temperature of fermentation, the fermentation process, fermentation and cooling to a temperature not higher than +8 ° C. There are two ways of production of dairy products: in a thermostat and in a reservoir.

Milk is purified, normalized, sterilized or pasteurized, homogenized, cooled to fermentation temperature, and then fermented by the method of thermostat. Fermented milk (or cream) is poured into the packaging (bottles, cans), sealed and placed in a thermostatic chamber for the fermentation. Then the product is cooled in the chamber to +8 ° C and incubated for the fermentation from 6 to 12 hours.

By using reservoir method of milk fermentation, cooling and ripening is occurred in large reservoirs and a finished product is poured into a package. In this method, the purified milk is heated to 72–75 ° C and pasteurized. After 10 minutes it is sent to a homogenizer, in which it is processed under pressure.

Homogenized milk is cooled to +22° C and sent for fermentation. Depending on the kind of lactic bacteria souring extends from 2.5 to 7 hours. After clot formation, and achievement of the desired acidity, the products are immediately cooled to a temperature not higher than +8 ° C and then are poured into the package. Reservoir method for producing dairy products is more economical than the thermostat, products with a higher quality.

Yogurt is an acidified, coagulated product obtained from milk by fermentation with lactic acid producing bacteria. Yogurt is made in a similar fashion to buttermilk and sour cream, but it requires different bacteria and temperatures. Whole, low-fat, or skim milk is fortified with lean dry milk or fresh condensed milk.

Conclusions. In the production of dairy products pure cultures of lactic acid bacteria are used. The structure consists of pure cultures of lactic streptococci (Str. Lactis), Bulgarian bacillus (Bad. Bulgaricum), Lactobacillus acidophilus (Bad. Acidophilum) and milk yeast (Torula). Lactic acid streptococci are developing at different temperatures: mesophilic - 30–35 ° C, thermophilic - 42– 45 ° C.

References:

1. <http://proiz-teh.ru/ml-molochnokislye-produkty>.
2. Ralph Early, The technology of dairy products second edition, Thomson Science, 1998.