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Уктамова Зулхумор Рустамжон кизи, преподаватель

Uktamova Zulhumor Rustamjon qizi

Ботиралиева Гулхаё Илхомжон кизи, преподаватель

Botiraliyeva Gulhayo Ithomjon qizi,

Кувинский техникум здравоохранения имени Абу Али ибн Сины

MICROBIOLOGICAL CONTROL OF DAIRY PRODUCTS

Annotation: The article presents the results of the analysis of factors affecting the quality of dairy products.

Key words: microbiology, dairy product, quality of product.

The dynamic development of the economy of the food industry is impossible without increasing the competitiveness of goods and services. The determining factor for consumers is the quality of products. Manufacturers should know and study the requirements for the quality of their products, study consumer preferences of consumers. These requirements are not the same for different consumer groups and differ depending on the purchasing power of the population, the level of competition and other factors. It is necessary to manage the quality of food raw materials, products and services, to be able to analyze and evaluate their indicators quantitatively and qualitatively.

Criterion or quality factor is a product parameter selected among others to evaluate the quality of this product. Quality, in turn, means a set of features and characteristics of the product, allowing to satisfy expressed or hidden needs. In the regulatory and technical documentation for dairy products, controlled quality indicators are divided into 3 groups:

organoleptic;

physico-chemical;

microbiological.

Technical microbiology studies microorganisms involved in the production of food products, antibiotics, enzymes and many other substances of microbiological

origin. Microbiology of milk and dairy products is a branch of technical microbiology that studies both microorganisms used in the dairy industry in the manufacture of various products, but also pathogenic microorganisms found in this production.

Sanitary microbiology examines the microflora of the environment for possible negative or beneficial effects of microorganisms present in it on human health. The sanitary condition of dairy enterprises is one of the most important factors affecting the quality and shelf life of dairy products. At all enterprises of the industry, the necessary sanitary and hygienic conditions must be created to ensure the production of completely safe and high-quality products. Thus, the microbiology of milk combines the tasks of technical and sanitary microbiology.

Microbiological control is designed to determine the compliance of raw materials and finished products with microbiological safety and quality requirements, as well as to detect microbiological contamination of raw materials, semi-finished products, technological equipment or the environment (water, air, etc.) and to identify the source of contamination. The quality and safety of food products can be assessed by direct detection of certain microorganisms, however, as a rule, such an assessment is carried out by indirect indicators that allow us to judge the possible contamination of products with technically harmful microorganisms. The basic principle of microbiological food safety is the absence of harm to human health in terms of the occurrence of diseases and poisoning of an infectious nature when eating food. At the same time, the risk for consumers is usually associated with the origin of raw materials from unfavorable sources, with violations in the technology of production of products, their contamination during sale, storage

Microbiological risks - diseases of food origin, the cause of which they are, represent an important problem in the field of public health, which is becoming more and more urgent. Most countries that have established systems for registering cases of foodborne diseases have noted a significant increase over the past decades in the prevalence of diseases caused by microorganisms contained in food,

including pathogens such as Salmonella, Campylobacter jejuni and enterohemorrhagic E. coli, as well as diseases caused by parasites such as coli cryptosporidium, cryptospora and trematodes. Hygienic standards for microbiological indicators include the control of 4 groups of microorganisms: sanitary-indicative, which include mesophilic aerobic and facultative anaerobic microorganisms - MAFAnM, bacteria of the Escherichia coli group — BHCP (COLI-FORMS); conditionally pathogenic microorganisms, which include Escherichia coli, bacteria of the genus Proteus, Bacillus cereus and sulfate-reducing clostridia; pathogenic microorganisms (salmonella and others); spoilage microorganisms - yeast, and moldy fungi. Physical hazards are the most common type of hazard that can manifest itself in food products, characterized by the presence of foreign material. Physical hazards, like biological and chemical hazards, can enter a food product at any stage of production. The risk of harm to the consumer's health is low for most foreign objects, since few of them can be sharp or hard enough to cause physical damage. But in any case, it will be unpleasant for the consumer to detect a foreign object in the food. However, some physical hazards can pose quite a tangible threat to health. Fragments of glass and hard plastic are an object of increased danger. The ingress of fragments into products poses a direct threat to the health of consumers.

An indirect indicator of environmental pollution is the detection of sanitary-indicative microorganisms. Product safety control is carried out by an alternative method, when the absence of sanitary-indicative, conditionally pathogenic and pathogenic microorganisms in a certain mass or a certain volume of the product is taken as the norm. Hygienic standards for microbiological indicators are set out and regulate the following groups of microorganisms:

- sanitary-indicative microorganisms - mesophilic aerobic and facultative anaerobic microorganisms (KMAFAnM), bacteria of the Escherichia coli group (BGCP), enterobacteria, enterococci;

- conditionally pathogenic microorganisms, which include *E. coli*, *Staphylococcus aureus*, *V. cereus*, *Clostridium perfringens*, bacteria of the genus *Proteus*;
- pathogenic microorganisms, including bacteria of the genus *Salmonella*, *Listeria*, *Yersinia*;
- spoilage microorganisms: yeast and mold fungi, as well as some lactic acid microorganisms;
- microorganisms of the starter microflora and probiotic cultures: microorganisms in products with a normalized level of microflora and probiotic products. The maximum permissible amount of extraneous microorganisms, mainly sanitary-indicative and spoilage microorganisms, in a certain mass or volume of the product, which does not violate microbiological stability during storage, subject to the established storage conditions, and does not pose a danger to human life, is called the risk limit.

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