

# INVESTIGATION OF SAFETY CRITERIA IN CHEESE PRODUCTION

## ИССЛЕДОВАНИЕ КРИТЕРИЕВ БЕЗОПАСНОСТИ ПРИ

### ПРОИЗВОДСТВЕ СЫРА

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**Annotation:** At present, the development of the Republic to new heights, the introduction of new technologies, equipment, import of various food products, raw materials used in them, the study of existing risks in the composition of semi-finished products, methods of their detection is one of the current issues.

**Keywords:** Milk and dairy products, quality indicators, food safety criteria, cheese composition, chemical and biological properties of milk.

**Аннотация:** В настоящее время развитие Республики на новые высоты, внедрение новых технологий, оборудования, импорт различных продуктов питания, используемого в них сырья, изучение существующих рисков в составе полуфабрикатов, методов их выявления является одним из актуальных вопросов.

**Ключевые слова:** Молоко и молочные продукты, показатели качества, критерии безопасности пищевых продуктов, состав сыра, химические и биологические свойства молока.

Cheese is a high-calorie protein product because it contains all the substances necessary for the human body in an easily digestible form. These include proteins, peptides, fats, calcium and phosphorus salts, and amino acids.

The cheese is obtained by grinding the milk with syrup or lactic acid, and then by processing and baking the cheese mass. Cheese contains proteins that are broken down into individual amino acids when cooked. Cheese digestibility is 98-99%.

The chemical composition of cheese includes complete proteins that are easily absorbed by the body (about 25%), milk fat (about 30%), minerals (calcium, sodium, phosphorus, etc.), fat and water-soluble vitamins (A) there is. D, E, B, B2, PP). Cheeses have high caloric and physiological value. The nutritional value, easy

digestion and pleasant taste allow the cheese to be used not only as a great food for healthy and sick people, but also as an appetite suppressant before meals. Cheese is made from cow's, goat's, sheep's and buffalo's milk. During production, it retains all the essential nutrients of milk except carbohydrates. In the process of making cheese, a significant part of the water is removed from the milk, resulting in a concentrated food product.

There are several types of cheese that can be grouped or classified according to criteria such as aging time, structure, method of production, fat content, composition of animal milk, country or region of origin, and so on. Milk is one of the most important ingredients in cheese making.

The nutritional and biological value of milk is determined by the balance of its ingredients, easy digestibility and widespread use for plastic purposes. The amino acid balance in milk proteins ensures the amino acid balance in the proteins in the whole diet. Milk fats contain a complex of arachidonic acid, a rare ingredient, and the biologically active protein - lysine. The carbohydrates in milk are in the form of sugar-lactose, which is not found in other products. Calcium in milk is important and is one of the best digestible calcium in nature. Milk contains a balanced complex of vitamins, especially vitamins A, V2, D, carotene, choline, tocopherol, thiamine, ascorbic acid and others. The overall balance of all substances in milk normalizes the amount of cholesterol in the blood serum and provides anti-sclerotic properties. Milk stimulates pancreatic secretion less than other foods, so it is used in almost all types of modern therapeutic foods.

The human diet uses the milk of various lactating animals: cows, goats, sheep and others. Sheep's milk has high nutritional and energy properties. Depending on the nature of the protein, the milk of different animals can be casein (containing 75% or more casein) and albumin (casein 50% or less).

Minerals. Minerals in milk include all the elements of the D. I. Mendeleev periodic table. Milk contains calcium, potassium, magnesium, sodium, iron salts, nitrate, phosphate, hydrochloric acid salts and many other substances. They are all easily absorbed in milk.

Milk also contains many other nutrients that are involved in metabolism, strengthen the body's resistance to disease and fight harmful microorganisms in the gut. These include antibiotics, immune bodies, opsonins, lysozymes, lactein, and more.

No food provides the body with milk calcium and phosphorus, 100 g of milk contains an average of 120 mg of calcium, 127 mg of potassium, 95 mg of phosphorus; It contains 14 mg of magnesium.

An important feature of the composition of salts in milk is that some elements are in the most optimal ratio for humans. In addition to being an excellent source of self-absorbed calcium, milk can also increase the absorption of calcium from other foods, vegetables and fruits. Iron is less than milk. In addition to the salts mentioned above, milk contains many other salts, albeit in small amounts. These are cobalt, copper, zinc, manganese, fluorine, bromine, iodine, arsenic, silicon, vanadium trace elements and others. Although these micronutrients are extremely low, they are also needed to replace the various fluids and juices that the human body expends during metabolism. For example, micronutrients help to replace blood, lymph, gastric and intestinal juices, sweat, saliva, tears, and so on. Without their involvement, important endocrine glands, such as the thyroid gland and gonads, cannot function.

Milk also contains citric acid, which is involved in the formation of flavorings for fermented dairy products. The amount of mineral salts in milk is relatively constant. Because when they are deficient in nutrients, they pass from the animal's bone tissue to the milk.

Although milk does not contain a lot of vitamins, it contains almost all vitamins. The amount of vitamins in milk varies, depending on the season, the nature of the feed, the breed, the period of lactation, and so on.

Vitamin A. This vitamin is made from the yellow carotene pigment found in foods in cows. Milk usually contains both carotene and vitamin A. Foods contain different amounts of carotene. Accordingly, the amount of vitamin A in milk also varies. In summer, this vitamin is 3-8 times more in milk than in winter. Vitamin A

and carotene give milk and butter a yellowish tint. If the cattle are not fed well in winter, the milk will lose carotene and vitamin A, so the color of winter butter will not be too yellow. In the preparation of sour cream, butter and cheese, vitamin A is transferred from milk to these products.

Bitamin D. Milk is high in vitamin D. Vitamin D is formed in the body under the influence of ultraviolet light.

Cheese production technology is a complex biochemical process that occurs under the influence of microflora and enzymes and requires a strict sequence in the production process.

Cheese production lines:

- preparation of milk;
- coagulation of milk and obtaining a homogeneous mass;
- cheese ripening;
- cheese pickling.

As for the safety criteria and quality control of wide cheese: The experimental method of quality control of cheese is widely used in determining the physical, microbiological and technological methods of their chemical composition.

The convenience of this method is that the result is expressed in numbers and the result is expressed with great accuracy. Its disadvantages are that it takes a long time to determine the quality of the product, reagents and specially equipped experimental rooms are required to determine.

Based on the melting and solidification temperatures of fats, it is possible to know their nature, purity and, to a certain extent, what fatty acids they contain.

The melting and solidification temperature of oils is determined by measuring the temperature of the oil during the transition from solid to liquid or from liquid to solid state with a thermometer.

The optical properties of cheese products are determined by polarimetry, refractometry, photocalorimetry, luminescence and chromatography.

Chemical methods of inspection. This method is used to determine the amount of substances found in cheese products and determine their quality. Based on this, it is possible to know the changes that occur during the storage and transportation of cheese products.

Microbiological method of control. This method is used to determine the degree of microbial contamination of cheese products. Excessive levels of microorganisms and pathogenic bacteria in cheese products indicate that the storage areas are contaminated and that sanitary rules are not followed during storage and transportation. Microbiological control over cheese products is carried out through sanitary-epidemiological stations (SES), the main institution that organizes and conducts all sanitary and anti-epidemic work in settlements.

So, because cheese is also a food item, in general, let's talk about food safety. Food security is a state of the country's economy in which the population is guaranteed a stable supply of food by the state in accordance with scientifically based criteria, ie on the one hand there is supply, on the other hand there is demand and consumption. Conditions are created for storage at the level of standards.

In order to meet the above-mentioned needs of the population, a general criterion for food security of the country will be established. In assessing the food supply of the population on the basis of certain criteria, the threshold value in terms of both quantity and quality is the level of self-sufficiency of the country in food worldwide and transient reserves, which are 15-20 percent. should be.

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