

## **STUDY OF THE INFLUENCE OF PECTIN ON THE SAFE SHELF LIFE OF SOFT CHEESES**

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The relevance of the work. At present, an important direction in the development of the modern food industry is the expansion of the production of functional foods. The global market for functional foods is growing every year. Much research and experimentation is being carried out in this direction. Nutrition is considered the main factor affecting physical and mental development, as well as the body's resistance to negative influences, the duration and quality of life. The most useful and valuable from a nutritional and biological point of view are milk and dairy products. Advantage: in these times of bad ecology, people need food that is healthier than before, and therefore more functional with a longer shelf life. Soft cheese with the addition of pectin was chosen as such a product. Among the variety of food products, one of the leading places is occupied by cheeses. World nutrition science recognizes cheese as a highly nutritious, biologically complete, easily digestible product. It is an indispensable and indispensable component of the human diet. The composition of cheese includes proteins, fats, carbohydrates and their derivatives necessary for a person, as well as mineral salt, trace elements, vitamins and other substances.

Protein substances of cheese include a complex of amino acids, including essential substances that are not synthesized in the human body. The oil is in an emulsified state, which determines its good digestibility. Cheese is the richest source of calcium and phosphorus.

The use of pectins in various industries is associated with their main properties: gelation, complexation, solubility. Once in the gastrointestinal tract, pectin forms gels. With edema, the pectin mass dehydrates the digestive tract and, passing through the intestines, captures toxic substances, removing them from the body. In addition, the gels cover the walls of the stomach and intestines, preventing the absorption of toxins into the lymph and blood, eliminating the acute physical effects of a number of substances on the walls of the stomach and intestines, which significantly reduces inflammation of the mucous membrane and ulcers. Pectin removes from the body microorganisms

and their toxins, biogenic toxins, anabolics, xenobiotics, metabolic products, as well as biologically harmful substances that can accumulate in the body: cholesterol, bile acids, urea, bilirubin, serotonin, histamine, can absorb and destroy mast cell products.

The role of milk and dairy products in human nutrition is great. These products have high biological and nutritional value. They contain easily digestible and balanced proteins, fats, carbohydrates, as well as vitamins, minerals and enzymes. Therefore, fermented milk products are an integral part of the diet and are used as a preventive and therapeutic agent for various diseases. Cheese is a unique dietary product. In terms of energy value, it can surpass even meat. The high content of protein in cheese and amino acids that synthesize protein in the human body makes cheese a useful food product for children and adults. Cheese also contains essential amino acids such as tryptophan, lysine, and methionine, which the human body cannot produce on its own.

Within the framework of project №AP08052416, soft cheeses were developed with the addition of beet pectin concentrate. In order to study the effect of pectin on microbiological safety, the cheeses were stored at +6 °C for 10 days. The shelf life of cheese with pectin has increased, since pectin can resist the development of bacteria due to its ability to gel and change the acidic environment, disrupt the relationship of bacteria with the environment, and reduce its adhesion. Less bacteria grew in cheese with pectin, colonies developed for a long time, and the number of bacteria was  $1.35 \cdot 10^5$ . The number of bacteria in cheese without pectin was  $2.55 \cdot 10^5$ . As can be seen from the tables, the number of bacteria in cheese with pectin is 52.9% less than in cheese without pectin. A week later, pasev was done again and there the number of bacteria in cheese without pectin is  $1.25 \cdot 10^5$ , and in cheese with the addition of pectin, the number of bacteria is  $1.0 \cdot 10^5$ , i.e. 90% less. Next, the safety of soft cheese with the addition of pectin was determined in accordance with TR CU 033/2013 On the safety of milk and dairy products. In the preparation of pectin-containing cheeses, the amount of pectin was optimized, the technology was worked out. Toxic elements: lead, arsenic, cadmium, mercury were not found. Pesticides: DDT and its metabolites, Heptachlor cyclohexane ( $\alpha$ ,  $\beta$ ,  $\gamma$ -isomers), 2,4-D acid, its salts, esters were not found. Mycotoxin: M 1 aflatoxins, B1 aflatoxins were not detected.

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