STUDY OF THE STABILITY OF THE COMPOSITION OF THE DRINK "SHIFO" AT DIFFERENT STORAGE TEMPERATURES

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Abstract: The article examines the stability of a dairy product prepared using lactic acid bacteria and bifidobacterial Linex and Lacto-G. The resistance of microorganisms Linex and Lacto-G to the tested temperatures was also studied. Storage of microorganisms turned out to be a normal environment for 30 days.

Keywords: dairy product, microorganisms, Linex, Lacto-G, temperature, environment, period.

It should be noted that with rational use of resources, even with the current level of development of agricultural and livestock products used, it is possible to feed over 10 billion people, since if over 1 billion people on the planet suffer from hunger and malnutrition, then approximately 1.6 billion people suffer from diseases caused by overeating and excess weight. Food products of animal origin can play a decisive role in providing the population with food, since the body receives high-quality proteins and many microelements from them, which are difficult to obtain in sufficient quantities from food of plant origin [1].

The third direction of the development strategy of the Republic of Uzbekistan for 2017-2021 notes important tasks aimed at "... the development of industrial sectors, primarily for the production of new, import-substituting products based on deep processing of local raw materials.

In this regard, the development of highly efficient processing technologies to obtain biologically valuable, non-traditional types of food products is of great importance.

Undoubtedly, social well-being is higher than economic well-being! This is the health of the population and the possibilities of its forecasting and targeted prevention.

The urgent problem of creating full-fledged therapeutic and functional products is not only their balance in carbohydrate-protein, fat components and vitamins, but also giving food products biological activity, allowing to solve the problems of prevention and maintaining public health.

Milk and dairy products occupy one of the leading places in the diet. It is relevant, especially in developed countries, to produce dairy products with a reduced fat content. Reducing the fat content of the product leads to a decrease in its caloric content, and at the same time, the remaining components of milk - proteins, carbohydrates, minerals, vitamins and others are preserved. Skim milk, cottage cheese, unripe cheeses and other products with reduced fat content are becoming increasingly popular.

It is known that dairy products, including kumiss, are perishable products. Therefore, we have conducted studies on the shelf life of new milk drinks "Shifo". Shelf life means maintaining the desired composition, hygienic impeccability and taste qualities for a certain period of time.

Skim milk and whey are an excellent nutrient substrate for microorganisms. The shelf life of the kumiss drink depends on the composition of the starter microbes, their type and physiological activity, as well as the storage temperature (from bottling to consumption) and substances that stimulate bacterial growth.

Kumiss from mare's milk after 4-6 days of storage, even at a temperature of 2-6 °C, turns sour and becomes unfit for consumption. The State Standard of Kazakhstan (ST RK 1004-98) guarantees the preservation of kumiss only for 72 hours after the end of the technological process of its manufacture.

An important factor influencing the shelf life of dairy products is temperature. The drink "Shifo" was well stored at low temperatures (in the refrigerator) for several months without changes in organoleptic indicators. It was considered necessary to study the effect on the shelf life of drinks at elevated temperatures, since in the hot climatic conditions of the Republic of Uzbekistan in summer even room temperature reaches 20-30°C and higher. Based on the above, studies were conducted on the effect of elevated temperatures (20-25, 30, 30-35°C) on the shelf life of the obtained drinks. The results of the experiments are given in Table.1.

Table 1.

Storability of the milk drink "Shifo" at different storage temperatures, days

The starter used	Storage temperature, °C		
	20-25	30	35-37
fermented milk	more than 30	more than 30	more than 30
with Linex bacteria	19	23	more than 30
with Lacto-G bacteria	19	21	more than 30
control	3	2	1

As can be seen from the data given in Table 4.2, the drink "Shifo" prepared using fermented milk starter culture consisting of local strains of lactic acid bacteria turned out to be the most resistant to elevated temperatures of 20-37°C. Foreign microorganisms did not grow in it, and the taste and smell almost did not change.

Drinks prepared using lactic acid bacteria and bifidobacterial Linex and Lacto-G turned out to be quite resistant to the tested temperatures, maintaining quality at 20-30°C for 19-23 days. For Linex and Lacto-G microorganisms, 35-37°C turned out to be normal for storage. At this temperature, the microorganisms remained active for more than 30 days. This once again proves the good survival of medicinal preparation cultures in the human gastrointestinal tract at a temperature of about

37°C and their antibiotic activity against foreign microbes. The study of the medicinal properties of the milk drink "Shifo" is the subject of further research.

The drink "Shifo", prepared from by-products in the production of butter, cheese, feta cheese, and cottage cheese, is an antipyretic, dietary, and medicinal drink. The microorganisms used in the preparation of the drink, due to their high antibiotic activity, help suppress foreign microorganisms and ensure long-term (19 to 30 days or more) shelf life of the drink at room temperature, even at elevated temperatures in the summer (20-37°C).

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