

## **ENRICHMENT OF DAIRY PRODUCTS WITH ADDITIVES OF PLANT ORIGIN**

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The global market for health products, including functional, hypoallergenic, organic, etc., will reach \$1 trillion (770 million euros) in 2017, according to a study by Euromonitor International. This is a reflection of the global consumer trend - promoting health and preventing disease through dietary adjustments. According to Eva Hudson, head of research for health and wellness products, today about 30% of the world's food companies invest in healthy products. The growth rate of the health food industry is outpacing that of the food industry.

Functional fermented milk products have a high nutritional value, important dietary and preventive properties. They contain in their composition all the main nutrients in a well-balanced form, as a result of which they are easily digested in the gastrointestinal tract and quickly absorbed by the human body. Of great importance in ensuring a healthy diet is the dairy industry, which produces functional milk-based products for determined consumer groups. Based on the foregoing, the actual task of the food industry is to create products that will improve human health. These are functional dairy products enriched with vitamins, dietary fiber, probiotics, prebiotics. The purpose of this work was to research and develop the technology of a functional fermented milk product with herbal supplements. The expansion of the range of functional products for specialized purposes can also be achieved through the use of various types of plant materials in their production. The use of herbal supplements with a high content of biologically active substances in the formulation of products allows enriching their carbohydrate, vitamin, mineral composition, as well as improving the taste characteristics and consistency of products. In the diet of a modern person, there is a lack of consumption of pectin, organic acids and vitamins, which leads to a hidden chronic vitamin deficiency - hypovitaminosis, which is a very serious health hazard. Lack of intake of organic acids increases the likelihood of intestinal infections.

Therefore, it is necessary to use the therapeutic and prophylactic properties of fruit and berry plants as widely as possible. One of the ways to

solve the problem of improving the quality of food products and expanding the raw material base for the processing industry is the use of raw materials growing in the Southern Territory.

Fruits and berries are a source of biologically active substances, especially macro- and microelements, vitamins and organic acids, which are contained in them in an easily digestible form and in optimal ratios for the human body. They can provide about half of a person's daily need for vitamins and microelements, and are also excellent raw materials for the food industry. A cocktail is a drink obtained by mixing several components. Cocktails are varied as alcoholic (containing one or more ingredients containing alcoholic beverages) and non-alcoholic ones. Non-alcoholic and alcoholic cocktails are popular in every corner of the vast globe, and each country has its own traditional drink, as well as a whole culture of its drinking. Some types of cocktail are used as an aperitif, some are served with fruit snacks, others serve as an addition to desserts, and some can even be an independent course: not only a refreshing drink, but also a full meal.

A variety of cocktails is amazing, and their assortment is growing every day. But first of all, attention should be paid to non-alcoholic species, since they are allowed in any age category and in almost any organism, which means they are the most commonly used. Various non-alcoholic drinks, which can satisfy the most delicate taste, are becoming very popular among the population. One of the leading places among them is occupied by dairy soft drinks - cocktails. The main prescription component of milkshakes is milk or dairy products. Milk and dairy products are universal, diverse and everyday food. Human activity, health, resistance to adverse environmental factors to a large extent determines the nature of nutrition. Improper nutrition leads to various diseases. There are diseases caused by malnutrition and overnutrition, metabolic illnesses. In this regard, scientists have determined the physiological needs of the body in nutrients and products. The scientifically substantiated daily intake of milk and dairy products (cottage cheese, cheese, etc.) is about 1 liter (in terms of milk) for adults and 0.5 liter for children. A special place in the organization of a balanced diet belongs to dairy products with fruit fillers. The latter makes it possible to obtain dairy products with pleasant taste and increase the biological value of dairy products by additionally enriching them with a complex of vitamins, including ascorbic acid (vitamin C), as well as other biologically active substances that are found only in plant products. Cocktails take significant place among these dairy products with high biological value including fruit soft drinks. Everyone should be able to choose for themselves milkshakes that meet the requirements of adequate nutrition, their physical needs, tastes and habits.

In this regard, studies have been conducted on the possibility of using of whole milk with plant components to create technology for new types of whipped products. As a result, fortified milkshakes with plant components have been developed. The assortment is represented by the following items: lemon and currant, milk and chocolate, vanilla.

The technological process for the production of milkshakes consists of the following operations: acceptance of milk, acceptance of other ingredients of the product, evaluation of their quality, milk pasteurization, milk cooling, syrup preparation, syrup pasteurization, mixing with eggs, stabilizer preparation, mixing pasteurized milk with a mass fraction of fat 3.5% with components, homogenization, whipping the mixture, cooling the cocktail, bottling the finished product, packaging, labeling the finished product, storage of the finished product. Milkshakes are stored at an air temperature in the chamber in the range from 2 to 6°C and a relative humidity of 85-90%. Duration of storage is not more than 7 days from the end of the process. When developing recipes for milkshakes, it is important to select plant components for qualitative and quantitative characteristics. The analysis of numerous milkshake recipes made it possible to select the most rational plant material. These are cocoa powder, vanillin, currants and lemon. The needs of different population groups in the required amount of nutrients were taken into account. Milkshakes are especially popular with children. Both young people and older people like them, so a chocolate cocktail was developed for children, vanilla for young people, lemon and currant mixture for elderly people. Chocolate is very much loved by children; in addition, it is useful for a young body. Vanilla has a specific smell and aroma and recruits the body. Lemon and currant are rich in vitamins and organic acids, which are so necessary in old age. By the amount of vitamin C, blackcurrant takes the fourth place after the green fruits of walnut, rose hips and actinidia. Blackcurrant berries have a vitamin, anti-inflammatory, diuretic, tonic, diaphoretic effect; stimulate the digestive tract and metabolism in the body. The combination of a wide range of substances useful to the human body makes lemon an indispensable food product and a valuable medicinal and cosmetic product. After all, a rich set of vitamins is what a person always lacks for productive activities. Cocoa stimulates the secretion of gastric juice. According to its nutritional value, cocoa is one of the first places among food products. The introduction of plant components into milkshakes increases their vitamin value and the role of cocktails in the fight against the development of latent forms of vitamin deficiency, which can contribute to the formation and development of a number of pathological conditions - atherosclerosis, cardiovascular diseases, neurosis and stressful conditions. The dangers of

hidden forms of vitamin deficiency are especially for people predisposed to overweight, as well as older people. Chicken eggs are also used in the technology of milkshakes, which allows not only to increase the biological value of cocktails by enriching them with vitamins and minerals, but also to obtain stable foams due to the natural stabilizer - lecithin. Egg yolk is a natural concentrate of lecithin. Its content in the yolk reaches 6%. Lecithin is not only an excellent stabilizer. This is one of the most valuable biologically active substances that perform a number of important functions in the life of the human body. It determines the permeability of the membranes of all living cells of the body, promotes the growth of the young body, normalizes fat metabolism and cholesterol metabolism, is an easily accessible source of phosphorus. Thus, egg cocktails are extremely healthy and tasty drinks provided using of fresh eggs. As fortification, ascorbic acid is used. Vitamin C a water-soluble vitamin is synthesized by plants (from galactose) and animals (from glucose). It affects various functions of the body, increases resistance to adverse effects, promotes regeneration. The main function of vitamin C is to strengthen the immune system. And, first of all, it helps leukocytes, which spend a supply of vitamin C in the fight against diseases. As a result of extensive sociological studies, it was revealed that the nutritional structure of the population of Kazakhstan is characterized by a continuing decrease in the consumption of the most biologically valuable products. The nutritional value and physiological effect of cocktails is determined by their chemical composition, which, in turn, is associated with the content of certain prescription components. It is known that aerated masses are used in functional nutrition for the treatment and prevention of a variety of diseases. Experts explain the functional properties of aerated products by the fact that approximately 10 times more oxygen enters the tissues through the stomach than through the lungs. One serving of such a product replaces 3-4 hours in fresh air, and oxygen-enriched blood activates the work of internal organs. From the above it follows that the development of new types of aerated products is relevant. The results of regular mass surveys clearly indicate the extremely inadequate intake of vitamins, a number of minerals and microelements for the most part of the children and adults, and they are absolutely necessary for the normal metabolism, growth and development of the body, and protection against diseases and adverse environmental factors, reliable provision of all human life functions.

Thus, the organoleptic properties of the milkshake, forming consumer demand, and physico-chemical parameters: density, acidity, effective viscosity, dispersion of the air phase, etc., which meet the requirements of this assortment group of products, are determined.