

Technology of Protein Granular Product

Ihor Ustymenko , Galyna Polishchuk ,
Jelyzaveta Smirnova

National University of Food Technologies

Introduction. In the last decade the lack of raw milk causes the extremely urgent task for dairy industry - the creation of effective resource-saving technologies.

The solution to this problem is possible in two main areas: complex processing of raw milk; a combination of raw milk with raw materials of plant origin.

Materials and methods. Over the past decade, the assessment of the role of fats in the human diet has changed dramatically. It has been established and proven scientific role of polyunsaturated fatty acids and phospholipids in the prevention and treatment of disorders of lipid metabolism, including atherosclerosis. The analysis of Ukrainian's nutrition shows steady deficiency of polyunsaturated fatty acids, especially Omega-3, whose biological role is extremely high. At the same time one proves harmful use of fatty foods containing trans isomers of fatty acids, most of saturated fatty acids.

Fatty components of milk products must contain balanced fatty acid composition as close to the standards of saturated, polyunsaturated and monounsaturated fatty acids, as well as to the content of polyunsaturated fatty acids Omega-3 and Omega-6. In addition, fatty components should contain Nylon, caprylic, capric acid, milk fat inherent and necessary for the normal functioning of the human body. Qualitative milk fat substitutes must also have oxidation resistance greater than that of butterfat, which allows to produce products with stable quality during long-term storage [1].

Results. The high biological value of PUFA is due to their participation in the structure of cell membranes and cell these organelles. These fatty acid families of omega-3 and omega-6 are not synthesized in humans and mammals and therefore must come from food.

You must strive to solid fat products (spreads, margarine, milk fat substitutes, fat of special purpose, etc.) because it is a source of omega-3 fatty acids (at least 0.2 g / 100 g), and liquid emulsion products (vegetable cream sauce, etc.) enriched by them fully (0.4 g / 100 cm³) [2].

Increased production of combined fat component in milk products in Ukraine in the last 15 years and abroad for decades, settles the desire to reduce cholesterol in the products.

In recent years, the domestic food industry is directed at increasing the consumption of tropical origin oils - palm, palm kernel, coconut, etc.

Unlike natural cream, their substitutes based on vegetable oils can be produced with desired melting curves, certain structural characteristics and desirable fatty acid composition.

Except for the fats also it's important for the formation of defined physical and chemical properties of vegetable cream the selection of appropriate emulsifiers and stabilizers.

The use of material of non-dairy origin is quite possible to develop the technology of protein granular product the plant analogue of dairy grainy cheese. Lower price and improved performance compared to the conventional dairy products will determine the future of the high demand for this product.

The essence of the development of new recipes of protein granular products is targeted selection of vegetable fats, directly which allows directly by to regulate the content of the final product of polyunsaturated fatty acids and other vital and necessary for the human body substances.

Conclusions. The product will definitely be different by low-cholesterol, or the lack of a minimum content of trans fatty acid isomers. In terms of technology the requirement for a fatty component of herbal cream will contain the following characteristics: increased resistance to fat oxidation; new and original organoleptic properties of the finished product; the melting point close to milk fat; availability on the domestic market of Ukraine; low price.

Therefore, a new type of protein granular product is useful, tasty and affordable to domestic consumers.

References:

1. A balanced omega-6/omega-3 fatty acid ratio, cholesterol and coronary heart disease// World review of nutrition and dietetics. Vol. 100 / Ed.: A.P. Simopoulos, F. De Meester – KARGER. – 2009. – 125 p.
2. Schwartz J. PUFA and LC-PUFA intake during the first year of life: can dietary practice achieve a guideline diet /Schwartz J., Dube K., Alexy U. // Eur J Clin Nutr., 2010. – Vol. 64. – № 2. – P. 124 – 130.