Spanish Journal of Innovation and INTEGRITY
ISSN: 2792-8268
Volume: 43, Jun-2025
http://sjii.indexedresearch.org

Fermented Milk Products and Their Importance in Human Life

Abdurashidova Khumora Farrukhbek kizi
1st year Master of Biotechnology, ASU
(abdurashidovakhumara03@gmail.com)

Tursunova Adolatoy Bobirbekovna
1st year Master's degree in Biotechnology, ASU

Tuychieva Dilfuza Sidikjanovna
Professor of the Department of Genetics and Biotechnology,
ASU Andijan State University, Andijan, Uzbekistan

Abstract: *Fermented dairy products are dairy products with high biological value that have a positive impact on human health. They are a source of easily digestible proteins, vitamins, minerals, and probiotics that help maintain the normal microbiota of the intestines. This article examines the history of milk fermentation technology development, the biochemical composition of fermented dairy products, their physiological effects on the human body, and their role in the national cultures of various peoples. Based on current scientific data, the importance of regular consumption of fermented dairy products in human nutrition is substantiated.*

Keywords: *fermented dairy products, fermentation, probiotics, lactic acid bacteria, human health, nutrition.*

Fermented animal products play a significant role in human nutrition, combining high nutritional value with functional properties. Among them, a special place is occupied by fermented milk products obtained by lactic acid fermentation under the influence of specialized microorganisms. Their consumption has a beneficial effect on the state of the gastrointestinal tract, immune system and metabolic processes, which determines their widespread use both in traditional nutrition and in nutraceuticals and preventive medicine. In the light of the growing interest in probiotics and functional nutrition, the study of the role of fermented milk products in human life is of particular relevance.

Historical aspects of the emergence of fermented milk products. The process of spontaneous fermentation of milk has been known since ancient times. Archaeological research shows that as early as the VIII–X millennia BC, pastoral communities in the Middle East used yoghurt as food. It is assumed that the processes of natural souring took place in a warm climate when milk was stored in leather bags, where the natural microflora caused lactic acid fermentation [1]. products in Ancient Egypt, Greece and Rome, where they were used not only as food, but also for medical purposes. For example, Hippocrates and Galon recommended yoghurt for gastrointestinal disorders [2].

In the Caucasus and Central Asia, kefir and ayran have long been produced, the recipe of which has been passed down from generation to generation and often kept secret. In Bulgaria, yogurt was traditionally produced, which later became an object of scientific interest thanks to the work of I.I. Mechnikov. Mechnikov, studying the effect of Lactic acid on life expectancy, became one of the first scientists to put forward a hypothesis about the benefits of lactic acid bacteria for human health [3].

The scientific understanding of the fermentation process began in the XIX century. Louis Pasteur proved that lactic acid fermentation is caused by specific microorganisms, in particular, representatives of the genera *Lactobacillus* and *Streptococcus* [4]. At the beginning of the XX century, I.I. Mechnikov put forward a hypothesis about the beneficial effect of the Bulgarian lactic acid bacillus (*Lactobacillus delbrueckii subsp. bulgaricus*) life expectancy. His ideas became the basis for the subsequent development of the concept of probiotics. Genomic studies of the XXI century have confirmed the ancient origin of lactic acid bacteria. It was found that ancestral forms of *Lactobacillus* lived on plants and got into the dairy environment in the process of domestication of animals and the development of dairy farming [5].

Biological and physiological value of fermented milk products. Fermented milk products are highly digestible and contain a complex of biologically active compounds. Proteins that have undergone partial hydrolysis under the influence of bacterial enzymes are more easily absorbed by the body. In addition, the fermentation process increases the content of B vitamins, in particular B2 (riboflavin), B6 (pyridoxine) and B12 (cobalamin), as well as organic acids (lactic acid, acetic acid) with an antimicrobial effect [6] for health, but also effective means in the fight against pathogenic microbes.

Probiotic microorganisms present in fermented milk products contribute to the restoration of normal intestinal microflora, suppression of pathogenic microorganisms, improvement of the barrier function of the mucous membrane and the synthesis of biologically active substances. Clinical studies have found that regular consumption of fermented milk products helps to normalize digestion, improve metabolic indicators, reduce blood cholesterol levels, stabilize blood pressure, and also has an immunostimulating effect [5, 6].

In addition, fermented dairy products may have an impact on human neuropsychic state by regulating the microbiota involved in the synthesis of neurotransmitters such as serotonin and gamma-aminobutyric acid. A balanced intestinal microflora can improve mood and reduce stress levels, which opens up prospects for the use of fermented milk products in psycho-emotional health [7].

Cultural and culinary significance of fermented milk products. Fermented milk products occupy an important place in the national cuisines and traditions of various peoples. In Russia and the post-Soviet space, yogurt, fermented baked milk, cottage cheese and kefir are widespread. In the countries of the Caucasus and Central Asia, ayran and katik are traditionally made. In India, dakhi is used, in Arab countries - laban and zebdi, and in Eastern Europe - yogurt, recognized as an element of the national heritage [5].

In addition to the food function, these products are an element of intangible cultural heritage, participate in rituals and family traditions. Their use in cooking covers a wide spectrum, from soups and sauces to baking dough and desserts. Adapting traditional recipes to modern conditions ensures the preservation of cultural identity while promoting a healthy lifestyle.

Conclusion. Fermented milk products are an essential component of a complete diet, combining high nutritional and biological value, functional properties and cultural significance. Modern scientific evidence confirms the beneficial effects of regular consumption of fermented dairy products on human health, especially in the areas of digestion, immune response and prevention of metabolic disorders. technologies for the production of fermented milk products is a promising direction in the field of biotechnology, dietetics and preventive medicine.

References

1. "The sequence of the lactobacillus genome in yogurt unveiled". 16 June 2006. Archived from the original on 23 August 2006. Retrieved 16 January 2012.

2. Lieke Gijsbers, Eric L. Ding, Vasanti S. Malik, Janette de Goede, Johanna M. Geleijnse. Consumption of dairy foods and diabetes incidence: a dose-response meta-analysis of observational studies // The American Journal of Clinical Nutrition. — 2016-04. — Т. 103, вып. 4. — С. 1111–1124. — ISSN 1938-3207. — doi:10.3945/ajcn.115.123216.
3. Dalby A (1996). Siren Feasts: A History of Food and Gastronomy in Greece. London: Routledge. p. 66. ISBN 0-415-15657-2
4. The Natural History of Pliny, tr. John Bostock, Henry Thomas Riley, London: Bell, 1856–93, Volume 3 (book 11, section 239), p. 84:
5. Savelyeva, T. N. (2020). Probiotics and their role in human health. Moscow: Medicine.
6. Butkovsky, A. Yu. (2015). Fermented milk products: biochemistry and health benefits. St. Petersburg: VMedA.
7. Kudrin, A. N. (2018). Functional nutrition and probiotics in disease prevention. St. Petersburg: Piter.