World Academy of Science, Engineering and Technology
International Journal of Agricultural and Biosystems Engineering
Vol:17, No:12, 2023

Development of the Food Market of the Republic of Kazakhstan in the Field of Milk Processing

Authors : Gulmira Zhakupova, Tamara Tultabayeva, Aknur Muldasheva, Assem Sagandyk

Abstract : The development of technology and production of products with increased biological value based on the use of natural food raw materials are important tasks in the policy of the food market of the Republic of Kazakhstan. For Kazakhstan, livestock farming, in particular sheep farming, is the most ancient and developed industry and way of life. The history of the Kazakh people is largely connected with this type of agricultural production, with established traditions using dairy products from sheep's milk. Therefore, the development of new technologies from sheep's milk remains relevant. In addition, one of the most promising areas for the development of food technology for therapeutic and prophylactic purposes is sheep milk products as a source of protein, immunoglobulins, minerals, vitamins, and other biologically active compounds. This article presents the results of research on the study of milk processing technology. The objective of the study is to study the possibilities of processing sheep milk and its role in human nutrition, as well as the results of research to improve the technology of sheep milk products. The studies were carried out on the basis of sanitary and hygienic requirements for dairy products in accordance with the following test methods. To perform microbiological analysis, we used the method for identifying Salmonella bacteria (Horizontal method for identifying, counting, and serotyping Salmonella) in a certain mass or volume of product. Nutritional value is a complex of properties of food products that meet human physiological needs for energy and basic nutrients. The protein mass fraction was determined by the Kjeldahl method. This method is based on the mineralization of a milk sample with concentrated sulfuric acid in the presence of an oxidizing agent, an inert salt - potassium sulfate, and a catalyst - copper sulfate. In this case, the amino groups of the protein are converted into ammonium sulfate dissolved in sulfuric acid. The vitamin composition was determined by HPLC. To determine the content of mineral substances in the studied samples, the method of atomic absorption spectrophotometry was used. The study identified the technological parameters of sheep milk products and determined the prospects for researching sheep milk products. Microbiological studies were used to determine the safety of the study product. According to the results of the microbiological analysis, no deviations from the norm were identified. This means high safety of the products under study. In terms of nutritional value, the resulting products are high in protein. Data on the positive content of amino acids were also obtained. The results obtained will be used in the food industry and will serve as recommendations for manufacturers.

Keywords : dairy, milk processing, nutrition, colostrum
Conference Title : ICAFS 2023 : International Conference on Agricultural and Food Sciences
Conference Location : Tokyo, Japan
Conference Dates : December 04-05, 2023