



KAZAKH NATIONAL AGRARIAN RESEARCH UNIVERSITY

DEVELOPMENT OF TECHNOLOGY FOR THE PRODUCTION OF THERAPEUTIC AND PREVENTIVE NUTRITION PRODUCTS BASED ON MARE'S MILK WITH IMMUNOMODULATORY PROPERTIES



Presented by: PhD Dr, Togzhan Boranbayeva
and Master of chemistry Zhanna Dossimova

TOGZHAN.BORANBAYEVA@KAZNARU.EDU.KZ
zhanna.dossimova@kaznaru.edu.kz



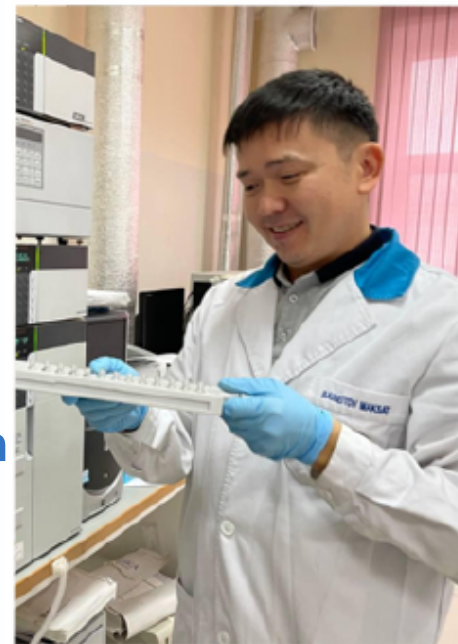
OUR TEAM



PhD Dr, Togzhan Boranbayeva
Head of the project



PhD Dr, Abzhalieva Aida
SENIOR RESEARCHER



TISHIMANOV MAKSAT
SENIOR RESEARCHER



DOSSIMOVA ZHANNA
JUNIOR RESEARCHER



BOLAT AYAZHAN
RESEARCHER



ZHALELOV DULAT
RESEARCHER

**THE PROJECT
EMPLOYS ONLY 5
PEOPLE AND 1
FOREIGN
CONSULTANT**

THE PURPOSE OF THE PROJECT

THE AIM OF THE PROJECT IS A COMPREHENSIVE STUDY OF THE QUALITY, SAFETY AND DEVELOPMENT OF TECHNOLOGY FOR THE PRODUCTION OF NEW THERAPEUTIC AND PROPHYLACTIC FERMENTED PRODUCTS WITH IMMUNOMODULATORY PROPERTIES BASED ON MARE'S MILK.

The product we offer is an important aspect in the development of functional products for the population of the country that strengthen the immune system and fight gastrointestinal infections. More importantly, the development of technology for producing new products from mare's milk will create important strategic, economic and social challenges facing production, the solution of which will improve the quality of life and health of the population.



INTERDISCIPLINARITY OF THE PROJECT

Within 6 months, 300 samples of mare's milk were received from 2 regions of Kazakhstan – Almaty and Zhambyl.

The physicochemical properties of the raw materials were studied, lactic acid bacteria were isolated from mare's milk, and their biological properties and genome-wide analysis were analyzed.

Regulatory documents for the preparation of probiotic products have been developed and implemented, and 5 scientific articles and 2 patents have been published.

2023

RESEARCH

2024

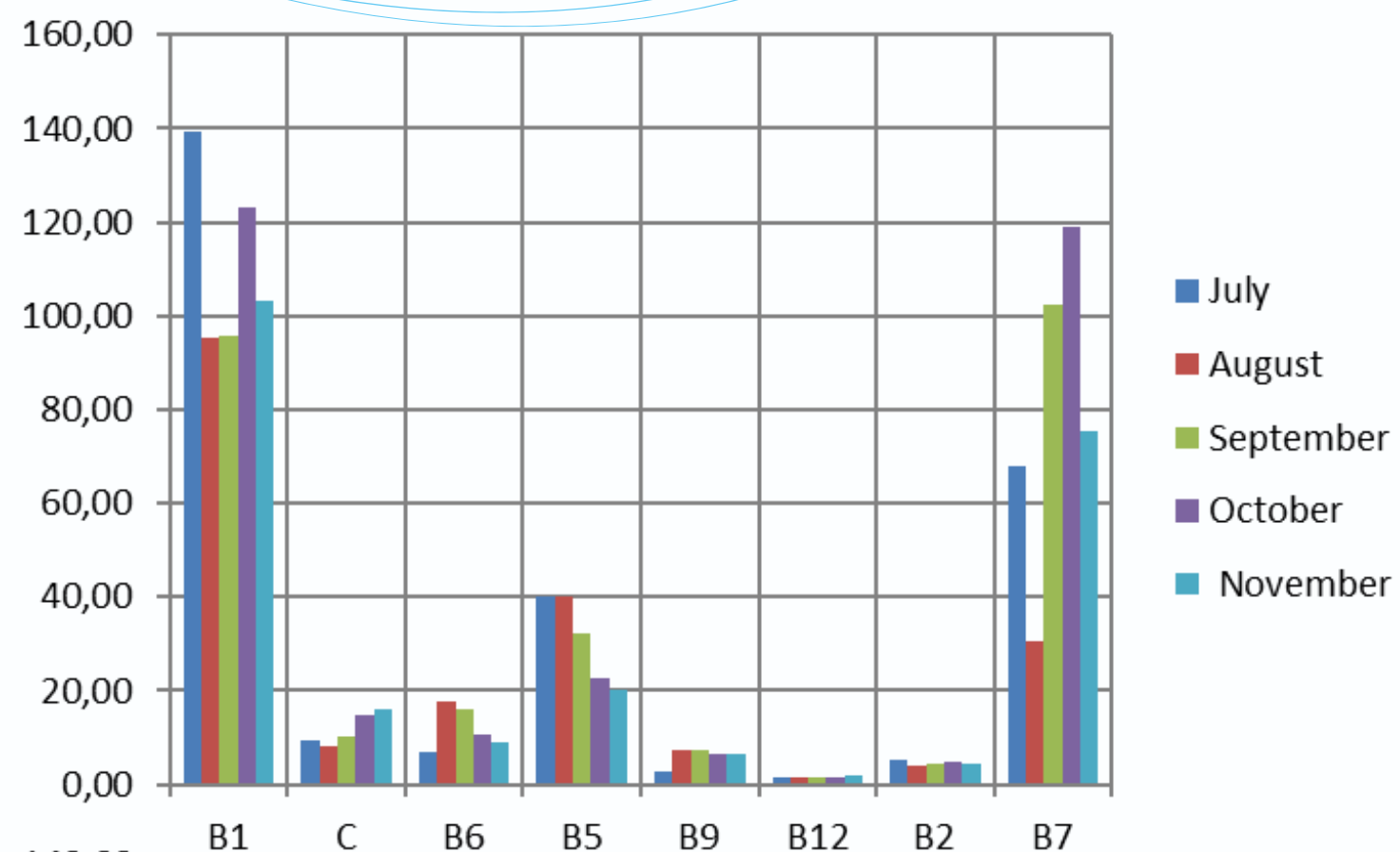
RESULTS

2025

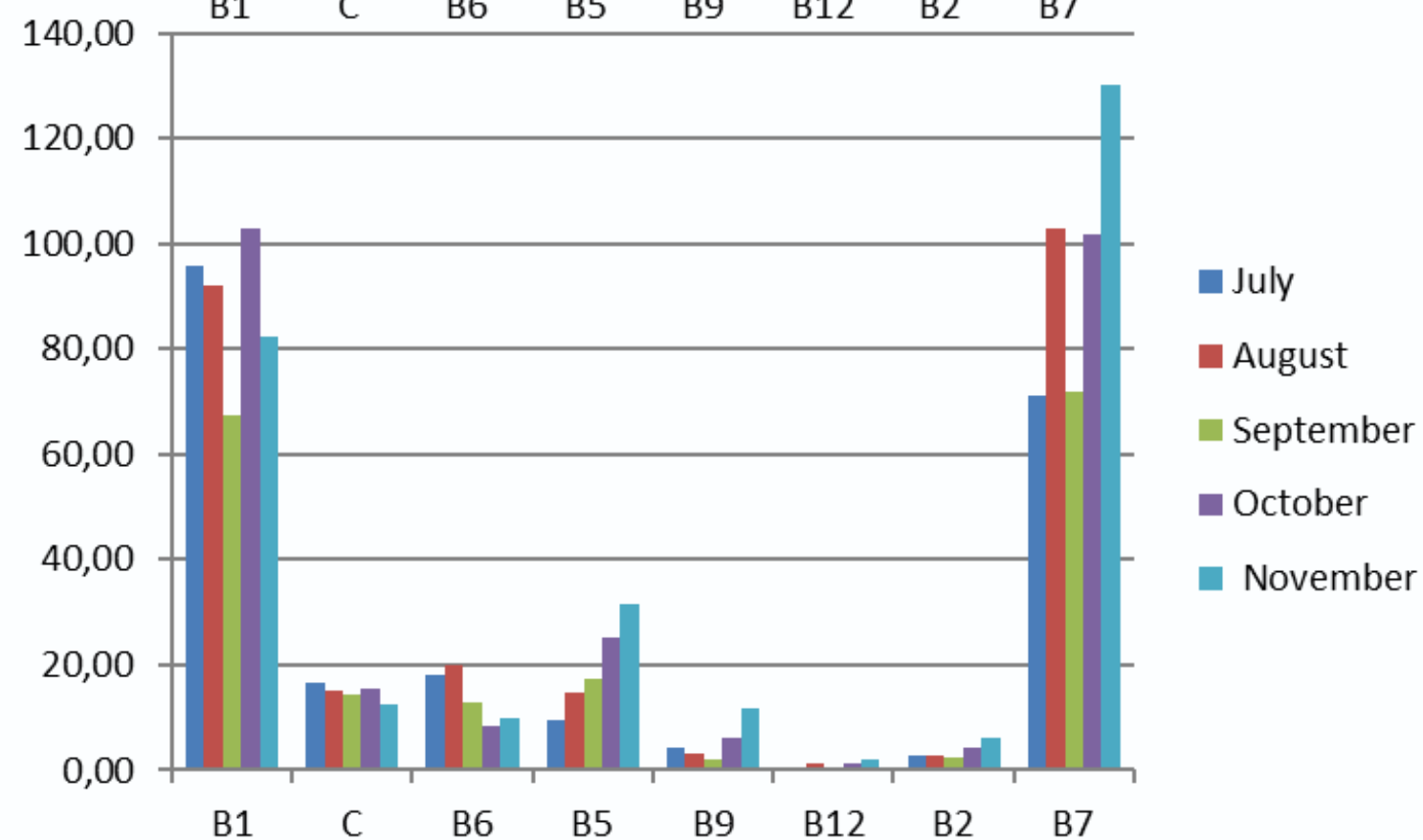
DEVELOPMENT

Results and discussion

In accordance with the objectives, experimental studies were carried out in the laboratory for the study of the quality of dairy products of the Kazakh National Agrarian Research University in 2024.

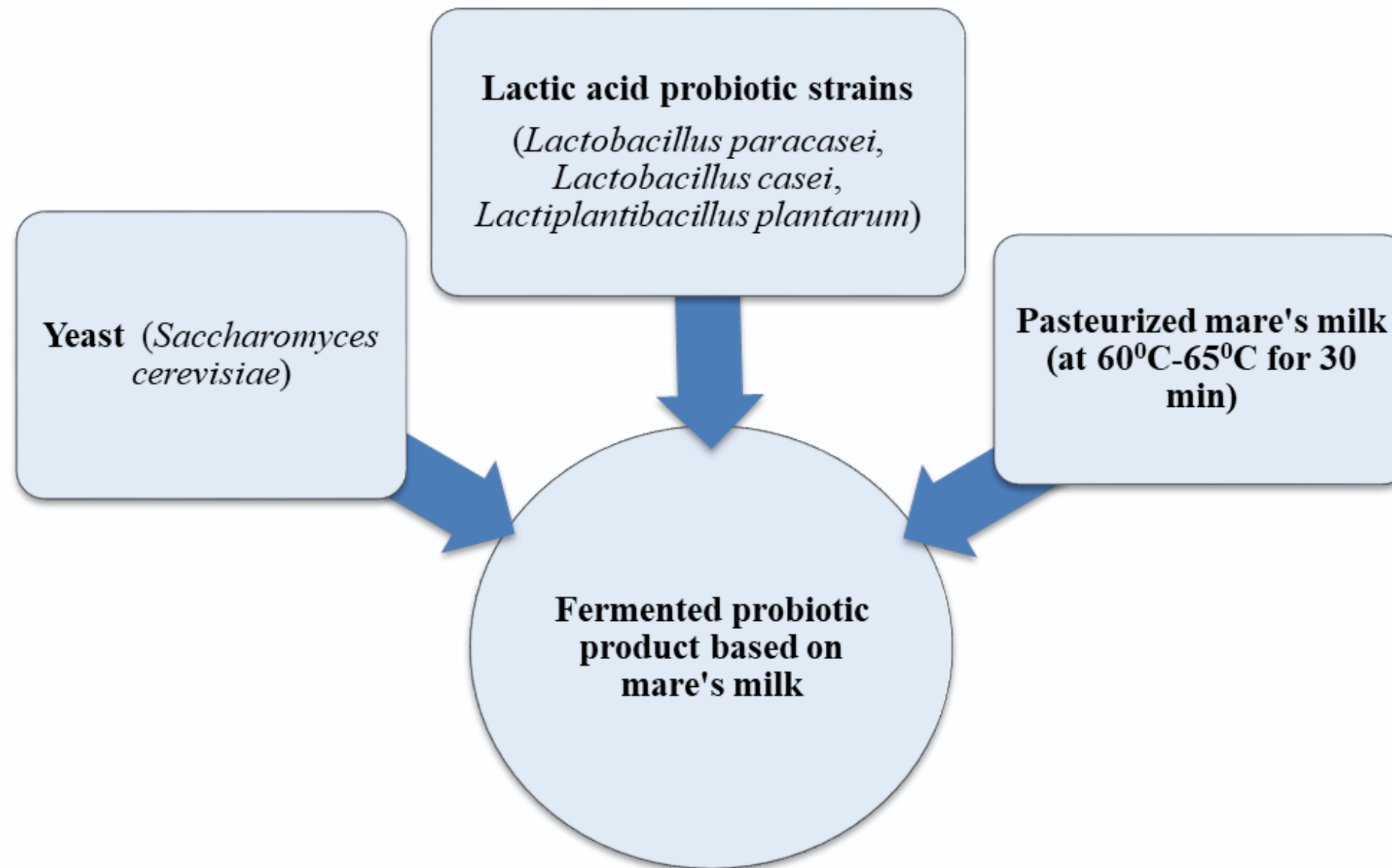


**Water-soluble vitamins from mare's milk
of the Almaty region**



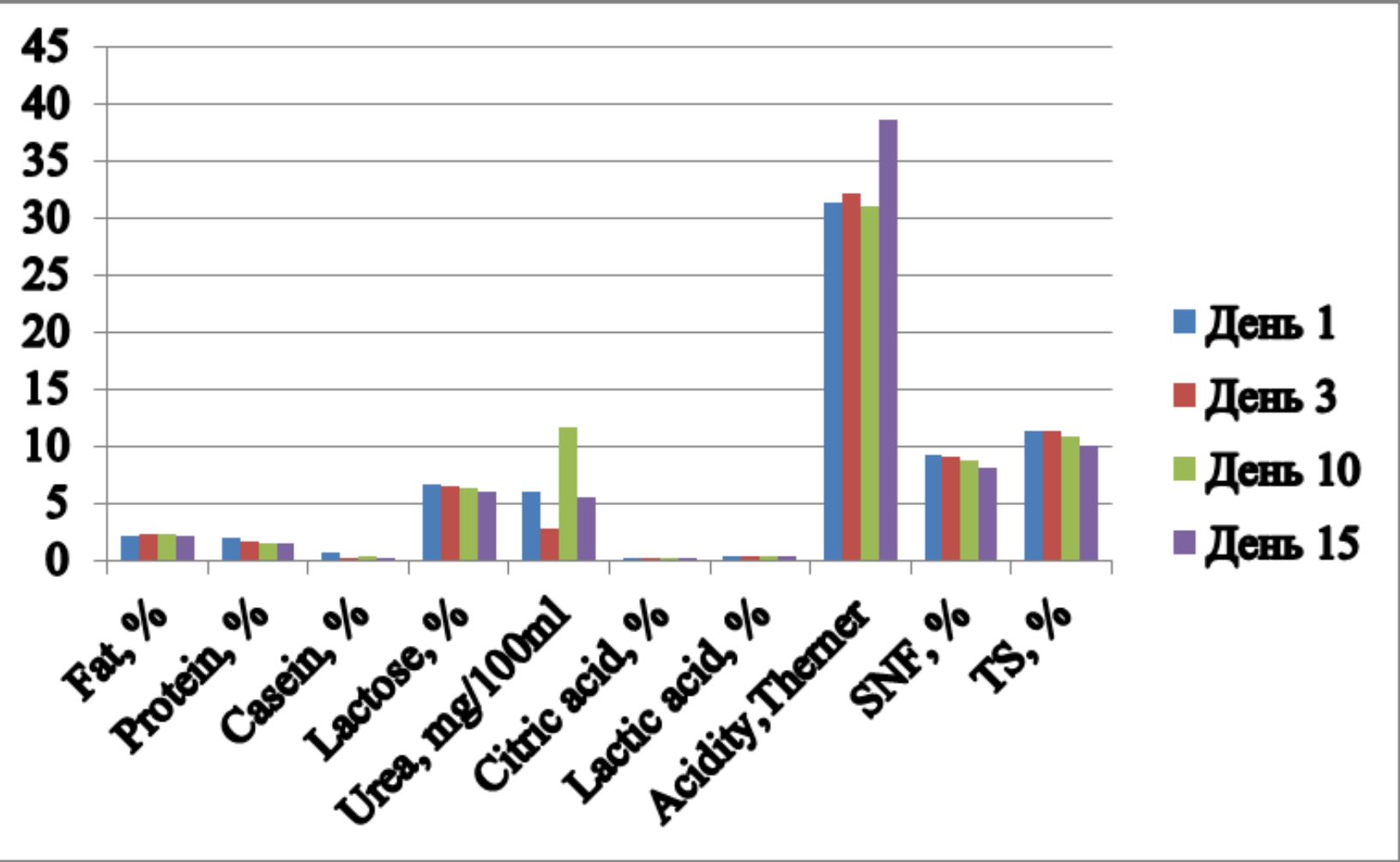
**Water-soluble vitamins from mare's
milk of the Zhambyl region**

Before use, the probiotic strains were centrifuged for thorough purification and added to fresh mare's milk for fermentation at 5%, 7.5%, 10% and 15% and fermented by stirring every 2 hours at 37°C for 24 hours.

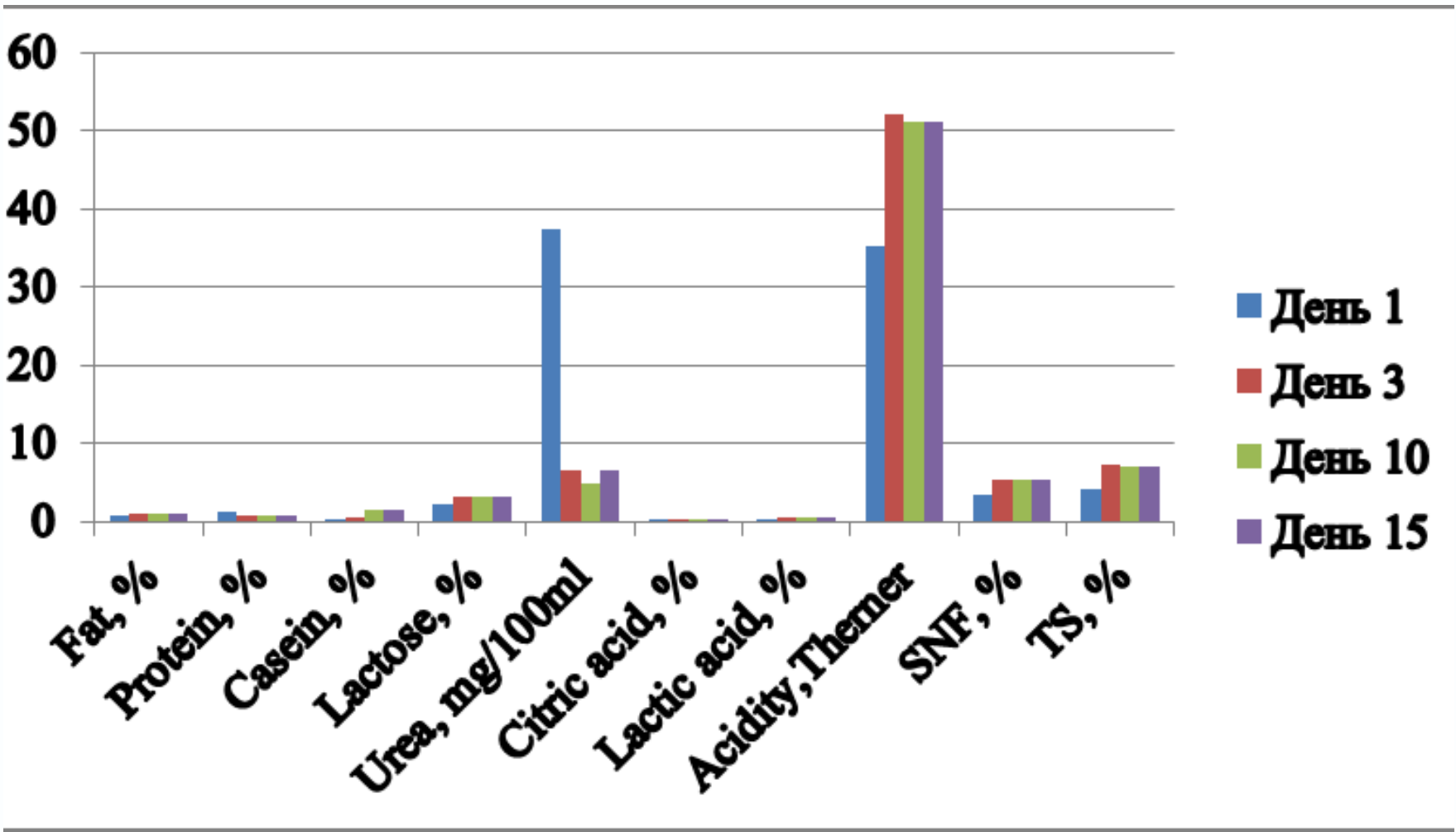


Scheme 1. Technological scheme for the preparation of an immunomodulatory fermented milk product based on mare's milk

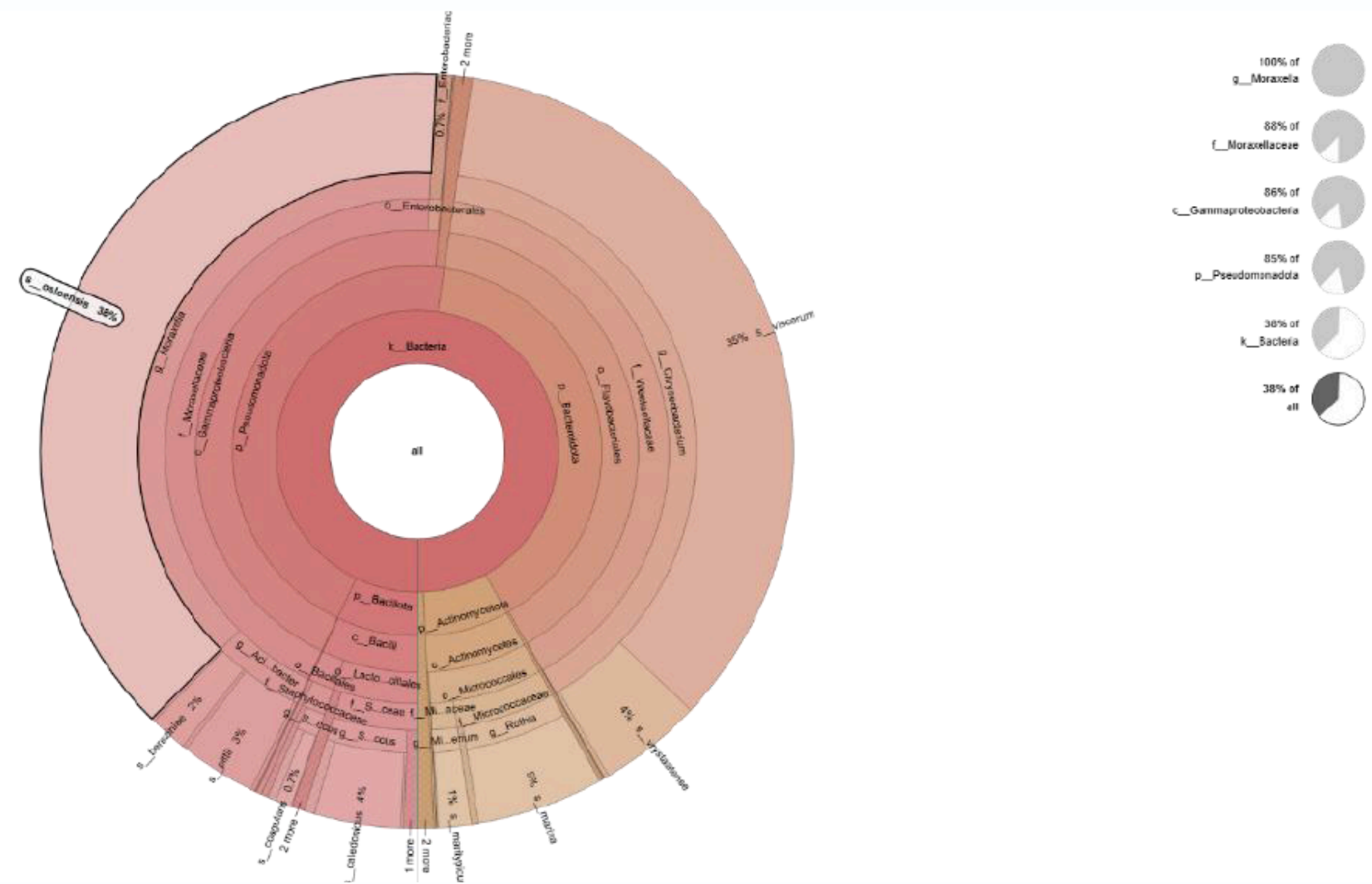
Graph 1. Results of the study of a probiotic product (15% added)



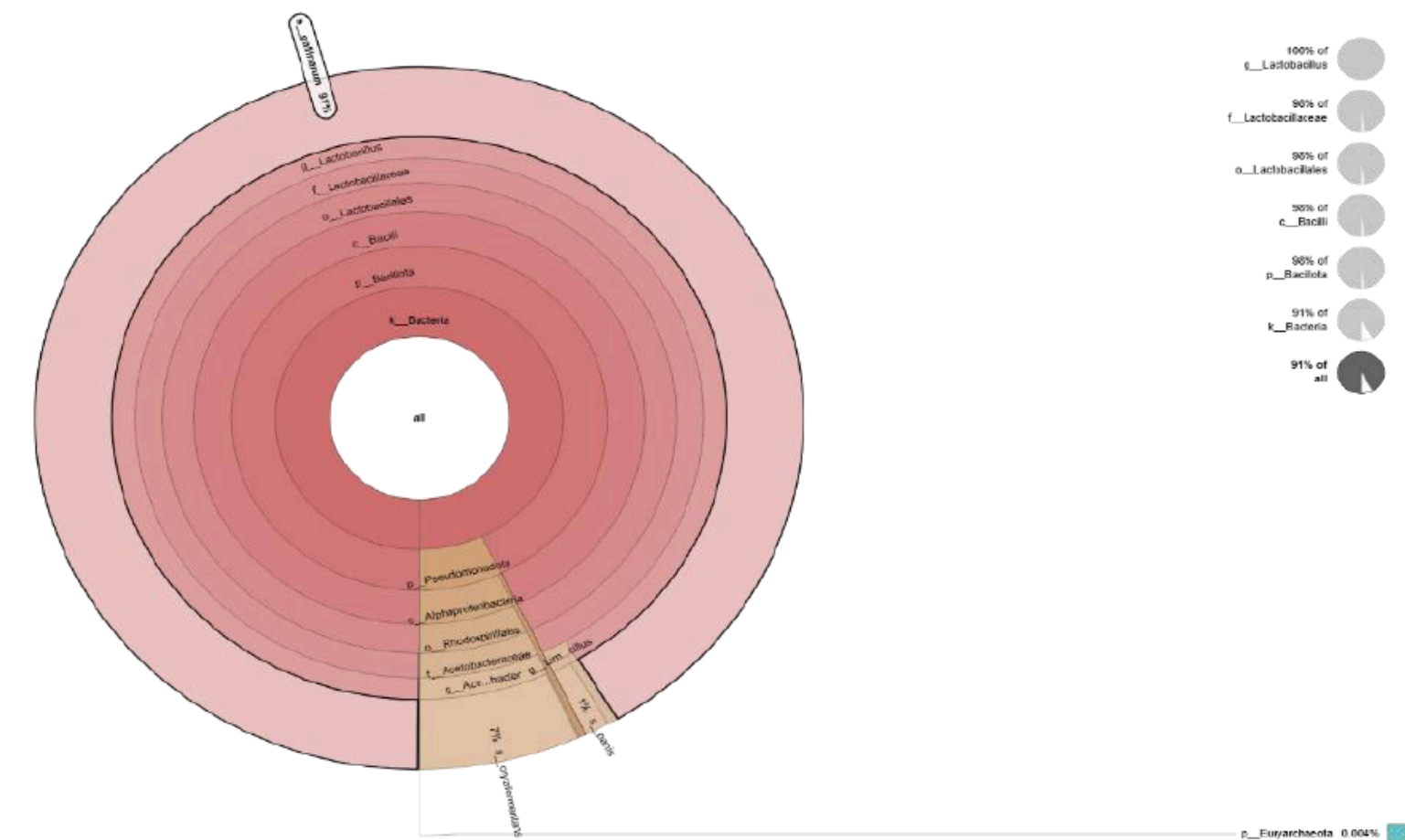
Graph 2. Results of the study of traditional kumiss



Types of strains in mare's milk



Types of strains obtained in the product



CONCLUSIONS

According to the results of a study of the developed product, a fermented probiotic product based on mare's milk contains valuable nutrients and has an immunomodulatory effect on the human body. Such products can also be used as adjunctive therapy in the treatment of diseases and the recovery of the body. In this work, comparative analyses of organoleptic, physico-chemical and microbiological (in vivo, in vitro) parameters were studied. From the above, it can be concluded that the sample of the fermented probiotic product contained the necessary nutrients to produce a high-quality dairy product.



THANK YOU FOR YOUR ATTENTION

togzhan.boranbayeva@kaznaru.edu.kz

zhanna.dossimova@kaznaru.edu.kz

