

# FOOD SAFETY & REGULATORY MEASURES

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## Preservation and use of the gene pool of microorganisms for ensuring quality and safety of food staples and food

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Basic researches of the modern biological, medical and veterinary science allowed developing and introducing in practice many probiotic preparations which basis is made by the live microbial cultures producing bacteriocins. The collection depositary of KazRIPFI contains more than 2022 cultures of microorganisms for the processing and food industry (lactic acid bacteria, yeast, etc.). Also, in responsible storage, there are 287 valuable production cultures deposited in connection with the patent procedure from the scientific and production organizations of Kazakhstan. Majority of work of our collection is studying the complexity of morphological, physiological-biochemical and genomic characteristics of valuable microorganisms' strains of various genus, species and subspecies. It allows carrying more precisely identification of strains, to create genetic passports of cultures and to control stability of gene bank, and also to improve monitoring of biotechnological processes at the enterprises using 80 most valuable strains of lactic acid bacteria and yeast cultures from our collection of KAZNIIPPP genotyping. Other important aspect of collection work are applied researches on studying the mechanisms of microorganisms interactions, of consortia and starters on their basis for the baking and dairy industry, probiotic preparations for farm animals, birds and fishes, bio-preparations for ensilage of forages. Creation of probiotics, antagonistic activity, biocompatibility, biosafety, stability of phenotypical properties of strains is studied. We developed the catalog with atlas of the production microorganisms, the recommendations about use of collection cultures of microorganisms and probiotics for the baking, wine and dairy industry, in organic livestock production in Kazakhstan.

### Biography

Anna Chizhayeva completed her PhD at Al-Farabi Kazakh National University. Currently, she is the leading Researcher of Laboratory of Biotechnology, Quality and Food Safety at Kazakh Research Institute of Processing and Food Industry. In 2015, she became Professor at Russian Academy of Natural Sciences. She has published more than 80 papers. Her area of scientific research includes "Biology of lactic acid bacteria, their metabolic features, bacteriocins, probiotics, safety of food and food biotechnology".

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