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New Principles For Ensuring The Biological Safety Of Raw Materials And Products Of Animal Origin.

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ABSTRACT

Traditional technologies for ensuring biological safety in the food industry and medicine, based on the use of various chemicals as disinfectants or antibiotics, at the present stage of development, come to a standstill due to the appearance of even stronger antibiotic-resistant strains of microorganisms, increased toxicity of medicines and lowering general immunity of animals and humans. The way out of this situation is the development of principles and technologies for the overall improvement of the ecosystem, animals and humans, with the increase of the body's immune status by creating a line of probiotic foods for food, fodder and biocenotic purposes containing a consortium of useful symbiotic bacteria that are antagonists of the pathogenic microflora. The result of the research was the development and production of a truly natural symbiotic concentrate, produced from milk and containing: macro-micro elements, bifidobacteria, lactic streptococcus, enzymes, biologically active substances. The microbiological matrix (symbiosis) is extracted in the wild from certain living organisms, which in turn are virtually unaffected by the anthropogenic factor. The symbiotic concentrate is recommended for human nutrition in order to suppress putrefactive and pyogenic microflora, as well as restore the natural microbiota both in the gastrointestinal tract and the mucous membrane of various parts of the human body as a whole and is capable of regenerating the affected skin.

Keywords: infections, biological safety, food, probiotics.

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INTRODUCTION

Traditional technologies for ensuring biological safety in the food industry and medicine, based on the use of various chemicals as disinfectants or antibiotics, at the present stage of development, come to a standstill due to the appearance of even stronger antibiotic-resistant strains of microorganisms, increased toxicity of medicines and lowering general immunity of animals and humans. The antibiotic resistance of industrial lactic acid microorganisms appears at the present stage as a serious problem of industrial safety [5]. It has been established that bacteria, intestinal bacteria resistant to antibiotics and carriers of pathogenicity genes [13, 14] are common in food, raw materials, and environmental objects. The antibiotic resistance of microbial associations also manifests itself in biotopes of the ecosystems of livestock farms [15] and poultry farms [4]. Increased resistance of pathogenic microorganisms to antimicrobial drugs [9], which has an extremely negative effect on human health, leading to a sharp decline in the effectiveness of etiotropic therapy of infectious diseases. Intensive selective antibiotic pressure, leads to rapid evolution and spread of new resistance mechanisms in medical institutions and, first of all, in intensive care units. There is a serious risk of spreading antibiotic resistance through the microflora of fermented meat products [6]. In connection with the current situation, the actual development of methods used in modern veterinary medicine for the treatment of animals is the use of probiotic drugs resistant to the action of antibiotics [1], as well as the creation of a consortium of microorganisms used for the preparation of fermented, non-fermented products, biologically active additives, bifid-containing preparations, cosmetic and hygiene products [11].

Development of principles and technologies for the general improvement of the ecosystem, animals and humans, with the enhancement of the body's immune status by creating, on the basis of biotechnological methods, a complex preparation containing a consortium of useful symbiotic bacteria that are antagonists of the pathogenic microflora.

MATERIAL AND METHODS

The issues of safety of food raw materials and food products are given great attention, and serious research increases the effectiveness of hygienic assessment of food and health risks associated with the presence of pathogenic microorganisms and contaminants in it using a dynamic approach that takes into account not only the average level of chemical and biological contamination but also values of safety indicators in the production process. This approach is due to possible mutual conversions of some compounds that are formed during processing and their endogenous synthesis of [10]. A special role is played by disinfection problems in food hygiene related to the prevention of the emergence and spread of appropriate infectious and non-infectious diseases, the deterioration of the quality of products under the influence of various biological pathogens (microbes, protozoa, helminths, arthropods, rodents) that are causative factors of human diseases, vectors or natural reservoirs of their pathogens [12]. Insufficient knowledge of the interrelated and interrelated problems of environmental and food safety, lack of scientific and methodological and practical recommendations on the formation of mechanisms for sustainable, environmentally balanced development of the Russian food sector should be compensated for by developing measures that ensure food safety, including: good production practices, the HACCP system and international standards in the field food safety management and product quality [7]. The production, transportation, storage and sale of food products of animal origin are closely related processes with microbial contamination and the risk of bacterial biofilm formation. Microbiological safety of the final product depends on the quality of the initial raw materials, compliance with technologies and sanitary conditions in the production, storage, and sale of products, as well as an adequate choice of structures and materials of the production equipment, the quality of the disinfectants and the frequency of their use [8]. New international initiatives for the development of effective risk prediction and food safety systems involve the creation of national, supranational and international early warning systems for food-related hazards, with a view to preventing or minimizing the risks that occur in particular parts of the food chain in different countries, regions and natural and climatic zones, taking into account the national characteristics of nutrition and the living conditions of certain population groups, and great importance is paid to hazards of microbiological nature [2]. Food and environmental safety of the country are closely interrelated: 98-99% of foodstuffs people get using agro-landscapes for farming, crop production and livestock breeding [3]. Modern agriculture gives people food, but at the same time destroys the land, so the development of a comprehensive technology for ensuring food and environmental safety, taking into account natural and climatic resources, biological and environmental factors on the basis of rational nature management, agroecology, and advanced forage production, acquires particular urgency.

RESULTS AND DISCUSSION

The result of these studies was the development and production of the author's version of Bogatyrev Alexander Borisovich, a truly natural symbiotic concentrate of Grails Life, made from milk and containing: macro-micro elements, bifidobacteria, lactic streptococcus, enzymes, biologically active substances. The microbiological matrix (symbiosis) is extracted in the wild from certain living organisms, which in turn are virtually unaffected by the anthropogenic factor. The resulting inoculum refers to prokaryotes, which have their own nutrient medium and their temperature regimes. Microorganisms are defined as human endemics. Concentrate symbiotic Grails Life is recommended for human nutrition, including for infants in order to suppress putrefactive and pyogenic microflora, as well as restore the natural microbiota in the gastrointestinal tract and the mucous membrane of various parts of the human body as a whole. It has direct biochemical inclusions, thus it is capable of regenerating affected skin. Restores the disturbed metabolism and various hormonal, enzymatic processes. Has a therapeutic and prophylactic effect. Concentrate has the effect of synergism - suppression of growth of various nematodes and helminths.

CONCLUSION

The results of the conducted studies allow us to formulate the following principles for ensuring the biological safety of raw materials and products of animal origin:

1. An environmentally safe habitat that determines the quality and safety of raw materials of animal origin is provided by the creation of favorable conditions for the purposeful development of a consortium of useful symbiotic soil microorganisms, and not at the expense of the rupture of biocenotic connections with the use of aggressive disinfectants;
2. Ensuring the biological safety of raw materials of animal origin is achieved by increasing the immune status of animals with the normalization of their intestinal microflora by using prebiotic and probiotic feed preparations, and not by destroying the natural symbiotic microflora under the influence of antibiotics;
3. The safety of products of animal origin is ensured by compliance with sanitary-hygienic and technological production regimes taking into account biological, chemical and physical risks, and not by the unsystematic use of disinfectants, antibiotics and growth stabilizers of microflora;
4. Effective prevention and treatment of human infectious diseases are ensured by increasing the body's immunity by normalizing the beneficial symbiotic intestinal microflora when using functional foods based on prebiotics and probiotics, rather than using antibiotics and short-term immunostimulants.

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