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**STUDING OF ANTIMICROBIAL ACTIVITY OF FUNCTIONAL DIARY
BEVERAGES**

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Relevance. Growing interest of functional dairy products by consumers is caused by their positive effects on the human organism. So nowadays the development of recipes and technologies of functional dairy products, prove their effectiveness, i.e the potential therapeutic effect is topical direction. That is why at the Biotechnology Department of National university of pharmacy for several years give much attention for this researching.

Aim: to examine the effectiveness indicators, which are demonstrate the potential therapeutic effect by one of the developed functional product - tan and compare it with industrial samples of the beverages this type.

Materials and methods. As objects of study we used the self-made sample of functional dairy product tan. For analytical comparing we used industrial dairy products, available on the Ukrainian market: carbonated dairy beverage "Tan Ayran" 1% fat production PE "Novel" (Kyiv, Ukraine) (TU 15.5-32420198-001-2003); lowcarbonated dairy product "Tan" 0.8% fat TM "Milk Caucasus" produced by "TGT" (Zaporozhye, Ukraine) (TU 15.5-06419880-063-2004); lowcarbonated dairy beverage "Tan" 1% fat TM "EkoFood" produced by "ANR GROUP" "(Krasny Yar, Dnipropetrovsk region., Ukraine) (TU 10.5-37516963-001: 2012). For tan producing we used nonfat pasteurized cow milk (DSTU 2661: 2010), two separate type of industrial starters - lyophilized culture LAT CW Italic, containing *Streptococcus thermophilus* and *Lactobacillus delbrueckii subsp. bulgaricus* (company Food Ingredients Mega Trade), drinking water DSTU 7525: 2014) and salt (GOST 3583-97).

To determine the qualitative and quantitative composition of dairy products samples we used traditional microbiological methods. The studying of the qualitative composition of the products (the presence of lactic acid bacteria) was conducted by differential-diagnostic method Gram staining. The studying of quantitative composition of dairy products (number of lactic acid bacteria cells) were performed by method of serial dilutions with inoculation on a solid substratum (Koch cup method). The studying of antimicrobial activities were performed by the agar diffusion test ("Kirby-Bauer antibiotic test"). As the test cultures in experiments we used strains of bacteria *Escherichia coli* 25922, *Staphylococcus aureus* 25923, *Bacillus subtilis* 6633, *Candida albicans* 1923, previously grown for 24 h at (37 ± 1) °C.

Results and discussion. The determining of the qualitative composition of the samples showed that the microflora of different products are variety but complies the declared by producers or added by us. In the microflora of industrial samples of tan is dominated lactic acid bacillus, for laboratory sample is observed spread evenly of lactobacilli and streptococci. The results of determine the number of microorganisms at the beginning and in the end of expiration dates of products are showed that for all samples the number of microflora cells are correspond to the norm (at least 10⁷ CFU /ml). But for industrial samples at the end of expiration dates are at critical level. For laboratory sample the number of cells is kept at the same level as at the beginning of expiration date and in the end-of-life. The results of determine the antimicrobial activity are showed that laboratory sample of tan is active against all test-strains, industrial samples either didn't active ("THT" and "ANR GROUP") or active selectively (PE "Novel" and " PE "Gabriel") against certain test strains.

Conclusions. Based on the previous researches of recipes and technologies was produced the laboratory sample of tan. Researching of qualitative and quantitative composition showed high content of lactic flora with its more equable ratio for laboratory sample compared to the industrial beverages. Availability of high antimicrobial effect against test-strains shows the effectiveness of developed functional product tan.