

The study of the surfactant and amikacin mixture antimicrobial activity to *S. aureus* BMC-1 and *E. cloacae* C-8 showed that the antibiotic inhibited the growth of both test cultures at a concentration of 1.96 µg/ml, so we didn't expect the effect of additional adding of surfactant. In fact, MIC for *S. aureus* BMC-1 in the presence of 70–75% of the strain IMV B-7405 surfactants in combination with amikacin did not differ from that for an antibiotic (1.96 µg/ml), and the minimum inhibitory concentration for *E. cloacae* was only in 2 times lower compared with indicator established for amikacin. Such data confirm that the using mixture of antibiotics with surfactant is only feasible in the case of relatively high MIC of antibiotics (not less 10–20 µg/ml).

On the next stage, the manifestation of surfactants and antifungal agents synergistic effects on fungi was investigated. Thus, the minimum inhibitory concentration for *C. albicans* Д-6, *C. tropicalis* PE-2 and *C. utilis* BBC-65 was the lowest (1.3–5.1 µg/ml) in the presence of nystatin and surfactant mixture in the concentration 75–80, 60 and 70–80% respectively. It should be noted that under such content of surfactants, MIC of the antibiotic decreased in 8–32 times in comparison with the value of the minimum inhibitory concentration of the individual drug. Similar patterns were observed in the study of fluconazole and surfactant solution synergistic effects. Experiments have shown that in the presence of 70–75% surfactant in a mixture with fluconazole, a decrease of minimum inhibitory concentration of the last one with respect to *Candida* species in 2–8 times (from 41 to 5.1–20.5 µg/ml) was observed.

Conclusions. The obtained results testify the possibility of using surface-active substances of microbial origin (on the example of *N. vaccinii* IMV B-7405 SAS) to increase the antimicrobial effect of antifungal and antibacterial drugs. The antimicrobial activity which was found in our studies of the *N. vaccinii* IMB B-7405 surfactants and antibiotic mixture makes it possible to consider these products of microbial synthesis as potential components of antibacterial locks against catheter-associated infections, which can reduce the antibiotics concentration in such solutions.

INVESTIGATION OF PHYSICO-CHEMICAL INDICATORS OF FERMENTED POWDER

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Introduction. Today it is important to support the restoration of the body with the help of dietary supplements containing probiotics and essential amino acids.

Aim. The purpose of the work was to study compatibility in one dietary supplement in the form of a sour-milk drink of two types of active ingredients, namely probiotics and essential amino acids, and to investigate the effectiveness of the drinks obtained.

Materials and methods. The task of proving the appropriateness of the proposed combination, we solved by analyzing the organoleptic parameters, as well as determining the pH and acidity. The appearance and color of the drinks were monitored visually, the pH was determined potentiometrically, and the acidity was titrated, the odor and taste were analyzed.

Results and discussion. After analyzing the values of physical and chemical parameters, namely pH and acidity, the following changes were observed: Samples of non-flavored beverages showed an increase in acidity at a similar level, somewhat larger for samples with lean Narine. The addition of honey and fructose significantly increased acidity, especially for samples based on leaven Narine. The highest levels of acidity were observed in samples with honey, but after a day, acidity and pH decreased, indicating a suppression of the formation of lactic acid. This applies to samples obtained with lean Narin (to a greater extent) and with leaven Yogurt.

In samples with the addition of fructose overnight, the acidity increased, that is, the functioning of microorganisms and the formation of lactic acid was not suppressed. But it turned out that a higher level of acidity, that is, a greater probiotic efficacy, is typical of Yogurt leaven samples.

Conclusions. In the analysis of organoleptic parameters, all samples of fermented beverages showed pleasant and acceptable organoleptic properties. In no case was the appearance of a third taste, or odor, or changes in the consistency of the drink, change in color, or stratification of a homogeneous mass. This indicates a lack of signs of degradation and compatibility of beverage components.

The positive data obtained result in the feasibility of further research on the development of relevant and effective tools that contain vital substances for the qualitative functioning of the human body.