Materials and methods. To achieve the chosen aim, the following modern physico-chemical, microbiological and technological methods were used: method of determination of titrated acidity (GOST 3624-92), method for determining the pH of milk and dairy products (GOST 3624-92), method of standard titration (GOST 25179-90), Kohh method, spectrophometric method, organoleptic methods (GOST ISO 6658-2016, GOST ISO 13299-2015), touch profile, statistical processing of results.

Results and discussion. The research objects were selected for the development of the composition and technology of the sour milk vitamin drink: milk with a reduced content of fat 1.5%, honeybee, fresh cranberry and freeze-dried starter of bacteria *Propionibacterium freudenreichii subsp. shermanii*.

The results of the test to determine the qualitative and quantitative characteristics of starter *P. shermanii*: appearance homogeneous powder, white, uniform in color, with a specific odor, solubility – 2 min, number of viable cells, $5 \cdot 10^9$ CFU (colony forming unit)/g, time of clot formation on serum medium – 5.5 h, cell morphology – Gram-positive cells, short sticks, combined in short chains.

The results of the determination of the sensory profile of experimental samples of fermented beverage with different contents of sowing material (2.5 ml, 5 ml, 7.5 ml, 10 ml): Sample 2.5 has an unsatisfactory consistency, an unpleasant smell; Sample 5 has a sour milk clot, but an unpleasant foreign smell and taste of bitterness; Samples 7,5 and 10 have a characteristic sour-milk smell and taste, but in a sample with a higher initial content of starter (10) the smell is too sharp, and the taste is sour.

The results of experimental studies, the concentration of the additional component, honey: in the specimen containing 10 g of honey, the titratable acidity was intermediate and amounted to 66 °T, while the syneresis was virtually absent -only 8 ml of serum (4%), and in determining the sensory profile, the consistency was homogeneous, and the taste is pleasant to sour milk.

According to the results of the experiment, in extract I (100 °C) the amount of extractives did not change after 80 min; in extract II (45 °C) the amount of extractives did not change after 90 min, although the latter had the value of the total content of phenols and the antioxidant activity is greater by almost 1.3 times.

Conclusions. Based on the technological, physico-chemical, microbiological tests, the composition of the fermented sour-milk drink for therapeutic and prophylactic nutrition of athletes was developed. The required amount of sowing material (starter) to obtain a product of the proper quality should be 3.75% of the amount of raw material. The optimum parameters of the main biotechnological stage of the process of making the drink are: temperature – 30 °C, time – 12 h, conditions – anaerobic. It was shown that adding 5% of honey to beer improves the organoleptic, physico-chemical parameters of the beverage, increases its biological value and reduces the time of the technological process. As a result of the tests, the parameters of the preparation of the extract of the cranberry extract were chosen to be added to the drink: the hydrodulum – 1:10, the temperature of the infusion is 45 °C, the extraction time is 90 min.

The developed product meets the needs for the nutritional value and is an additional source of bioflavanoid and vitamins that, in conditions of increased physical activity and stress, will increase the immune status of the organism and contribute to improving its overall health.

EFFECT OF WATER REDOX POTENTIAL ON INTESTINAL MICROFLORA

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Introduction. The redox potential is an indicator of the number of electron donors or acceptors in the redox system or a measure of the ability of the media to donate or accept electrons, oxidize or recover. A system with more positive RP (redox potential) has less ability to donate electrons to a system with even more positive RP. While with more negative has a greater ability. On the membrane surface due to ion exchange between the cell and the external environment, a negative charge occurs, which is also a resting potential. The resting potential on average ranges from -30 mV to – 120 mV and in fact, is the RP of the environment inside the cell. This potential affects the flow of some important chemical, biochemical and biophysical processes, such as membrane transport of substances, metabolism, as well as

redox processes within the cell. Based on this, in these studies it is advisable to check the effect RP on a bacterial cell.

Aim. To determine the effect of RP on bacterial colonies *Lactobacillus, Bifidobacterium bifidum, Escherichia coli* by cultivation on growth media with different rates of RP.

Results and discussion. In bacteriological media, the oxygen is mainly responsible for RP. The growth of anaerobic bacteria in a standard medium is suppressed when the RP values are above 100 mV, some species do not grow when the RP is above 330 mV. Aerobic, microaerophilic and facultative anaerobic species have the optimal RP value for themselves, a decrease or excess inhibits their growth. Within limited limits, microbes are able to change the RP in the direction of the optimal value for them. To create the RP required for microbial growth, the medium is aerated or oxygen is removed from it. Reduce the RP by adding reducing agents. RP is measured in volts electrometrically: by comparison at standard temperature and pH of the electric potential of this system and standard redox system, which is taken as zero. RP can also be measured using RP indicators. As part of this study, it is planned to: by conducting assessment measurements of water of various origins, select samples with different AFP values, on the basis of which to create nutrient media for subsequent sowing of bacterial cultures. After cultivation, evaluate and compare grown colonies. After evaluating and comparing the experimental cultures, come to a conclusion whether the RP environment influenced the viability and growth of bacteria.

Conclusion. Intestinal bacteria inhibit the growth of pathogenic microflora and has an important immunogenic role (stimulating the production of immunoglobulins), and also participate in human metabolic processes (synthesis of vitamins, splitting cellulose) and as a result affect on human's health. Further studies are planned to conclude the effect of RP on the viability of intestinal microflora.