THE SEEDS GERMINATION PARAMETERS OF THE *PINUS SYLVESTRIS* VARYING DEGREES OF RESISTANCE TO THE CAUSATIVE AGENT OF THE ROOT ROT INVESTIGATION

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Introduction. The root sponge or *Heterobasidion annosum*, is a fungus species which affects more coniferous trees. In the foci of infection drying of trees observed, but some are resistant to the disease. Currently, the study of the disease and its elimination it is the main task. Since in the foci of infection it is possible to find a healthy tree, it is called conditionally stable, and to compare the measurements of the conditionally stable tree, the diseased and the healthy tree.

Aim. Conduct comparative studies of the *Pinus sylvestris* variable degrees of resistance to the causative agent of the root rot seedlings physical and biological characteristics.

Materials and methods. We used 3 groups of common pine seeds, healthy, diseased and conditionally stable trees, n = 25. The seeds were sterilized with 2% KMnO4 solution for 2 hours, germinated in wet conditions in Petri dishes. The intensity of, as well as the quality of, the germinating ability of seeds. Considered the energy of germination, the number of germinating seeds, the linear characteristics of seedlings. The observation period was 30 days.

Results and discussion. It is known that the quantity and quality of germinated seeds depends on which tree was harvested from. It was found that the maximum rates of germination were harvested from the resistant trees. A similar trend was observed with respect to the root, stem, pine needles length.

It is believed that theoretically one can consider self-sowing trees as the more resistant to the causative agent of the root rot trees compared to the planted trees. The mechanized and manual planting of trees contributes to the maximum development of the lateral surface roots, which are available for the growth of the mycelium and further development of the root rot. Deviations in the structure of the root system weaken the tree vitality, which is the cause of damage to the root rot. The trees that are lagging behind in growth are the most prone to infection.

Conclusion. The germination energy of *Pinus sylvestris* seeds collected from trees differing in degree of resistance to the root rot, the growth and development of seedlings were studied. The results obtained will be further used in the studing and establishment of the method of *H. annosum* neutralization in order to derive stable clones of the tree.

DEVELOPMENT OF THE COMPOSITION OF THE VITAMINIZED BEVERAGE FOR MEDICAL PREVENTIVE SPORTS NUTRITION

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Introduction. In recent years, the concept of the health improvement and prevent aging for using sour-milk products in the diet is developing very rapidly. Especially it is relevant to people for whom the physical activity plays an important part such as sports professionals and amateurs. It should be remembered that when doing physical exercises we spend more useful elements, because of overheating or, conversely, body hypothermia. As the result is the functional depression of protective functions of the body and activation of latent infections, therefore, development sour-milk drinks with low fat content and increased content of vitamins, flavonoids, organic acids, etc. The raw product in this aspect is cranberry. Using it in the food will increase the protective functions of the body and fight with pathogenic infectious agents.

Aim. Development of the composition and technology of vitaminized beverage for therapeutic and prophylactic nutrition of athletes on the basis of propionic acid bacteria.

Materials and methods. To develop the composition and technology sour milk beverage it was selected the following research materials: milk with a lower fat content (TM (trademark) "Prostokvashino" 1.5%), whey, honey bee (TM "Svoy Med" SSTU 4497: 2005 (state standard of Ukraine)), cranberry usual fresh (Vaccinium oxycoccus, SSTU 5035: 2008) and lyophilized dried ferment of bacteria Propiomibacterium freudenreichii subsp. shermanii.

In the course of the work, modern physicochemical, microbiological and technological methods were administered. Physicochemical methods research: a method for determining titratable acidity (GOST 3624-92), a method for determining the pH of milk and dairy products (GOST 3624-92), the method of titration (GOST 25179-90). Microbiological methods of investigation: Koch's cup method, method coloring on Gram. Technological methods of research: spectrophotometric method, determination of the degree of syneresis, organoleptic methods (GOST ISO (International Organization for Standardizations) 6658-2016, GOST ISO 13299-2015). And, ultimately, process of fermentation.

Results and discussion. Based on the results obtained experimental studies, we can conclude that the optimal parameters of fermentation in the production of a sour milk beverage based on propionic acid bacterium are: the amount of ferment is 3.75%, ripening temperature - 30°C, ripening time - 12 hours, conditions - anaerobic. It was also shown by results that the addition of additional component of honey can significantly reduce the time the process of fermentation - almost 5 hours (with the addition of 15 g), 2 hour (with the addition of 10 g), and increase the biological value fermented beverage. Based on this, the addition of 5% honey in dairy raw materials. In the subsequent tests, such parameters for the preparation of cranberry extract: hydromodule - 1:10; infusion at 45 ° C; the extraction time is 90 minutes.

At the final result was the process itself. It is consisted of the following operations: reception and preparation of raw materials, normalization of fat content; homogenization, pasteurization and cooling of the mixture; fermentation and fermentation; preparation of cranberry extract; cooling and mixing of the bunch; spilling, packaging, labeling and pre-cooling of the product.

Also, normative and analytical documentation was developed and compiled on the finished product, which must correspond to the quality indicators, as shown in table 1 below.

Table 1 - Properties of the fermented beverage with honey and extract of cranberry squeezing

Color	Milk- white
Consistency	Homogeneous, without extraneous inclusions, syneresis absent
Odor Taste	Pleasant, characteristic of sour-milk products, without foreign flavors
Taste	Pleasant, sour, characteristic sour-milk products, without strangers tastes
Titrated acidity, ◦T	Not less than 70
Storage temperature, °C	6 - 8
Shelf life, day	Not more than 5

Conclusions. So, we can conclude that the work was carried out experimental and theoretical justification of development and rational technology of a ferment beverage with honey and extract of cranberry squeezing. Firstly was given the concept of experimental justification of development and rational technology of a fermented with reduced fat beverage milk-based, honey and cranberry extract. Secondly investigated microbiological and technological properties of the leaven of propionic acid microorganisms and use in the quantity of 3.75% to produce a fermented beverage. Thirdly, as a result of the test, the parameters of squeezing cranberry extract to add to the fermented beverage was selected a hydromodule -1:10, the temperature of the infusion was 45°C , the extraction time was 90 min. Consequently, according to these facts, the technological process was developed, the logic diagram of the production of a vitamins fermented milk beverage for curative nutrition for athletes, that cater for the needs for nutritional value and is additional source of bioflavonoids and vitamins, which, under condition in creased exercise and stress, will increase the immune status and ameliorate its general state of health.