

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

Chornoliuk M. D.<sup>1</sup>; Dishko V. A.<sup>2</sup>, Strilets O. P.<sup>1</sup>

Scientific supervisor: assoc. prof. Shapovalova O.V.

<sup>1</sup>National University of Pharmacy, Kharkov, Ukraine;

<sup>2</sup>The G. M. Vysotskiy Ukrainian Research Institute of Forestry & Forest Melioration  
marinachornoliuk@gmail.com

**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% KMnO<sub>4</sub> 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**

Danilich K. O., Marchenko A. A., Kalyuzhnaya O. S.

Scientific supervisor: prof. Strelnikov L. S.

National University of Pharmacy, Kharkiv, Ukraine  
karqxa98@gmail.com

**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.