There were no significant differences between the types of differences in the activity of SOD in mollusks from the Gomel and Mozyr regions.

Conclusion. It was found that the activity of SOD in the hepatopancreas of *Planorbarius corneus* is higher than in *Lymnaea stagnalis*, which indicates a higher ability of coils to adapt to adverse stress factors and is associated with different types of oxygen transport (copper-containing hemocyanin and iron-containing hemoglobin).

1. Harutyunyan, A. B. Methods of evaluation of free-radical oxidation and antioxidant system of the organism / A. V. Harutyunyan, E. E. Dubinina, N. N. Zybina. – Ros. Acad. of Medical Sciences. North-West. St.-Petersburg. Int. bioregulation and gerontology. – St. Petersburg, 2000. – 102 p.

2. Abakumov, V.A. Hydrobiological Monitoring of Freshwater Ecosystems and Ways of Its Improvement / V.A. Abakumov, L.M. Suschenya // Ecological Modifications and Criteria of Environmental Norming: The works of the International Symposium. – Moscow. - 1991. – P.41-51.

3. Kostyuk, V.A. Superoxide-driven oxidation of quercetin and a simple assay for determination of superoxide dismutase / V.A. Kostyuk, A.I. Potapovich // Biochem. Int. – 1989. – Vol. 19. – P. 1117-1124.

THE INFLUENCE OF PRE-SEEDING TREATMENT WITH EPIBRASSINOLIDE ON SOME INDICATORS OF *DAUCUS CAROTA* L. UNDER LABORATORY CONDITIONS

Karolina Simakova
Brest State University named after A.S. Pushkin, Brest, Belarus

Steroid compounds are widespread in nature and exhibit a biological activity. Much attention is paid to one of the representatives of phytohormones - 24-epibrassinolide, which performs a regulatory function at various stages of plant ontogenesis: growth, cell division, seed formation, biomass growth, development of protective mechanisms, etc. [2, 3]. The high biological activity of brassinosteroids contributed to the development of new drugs based on them for the needs of agriculture. The most common drug – «Epin-extra», contains 0,025 g/l, and for seed treatment, according to the instructions, it is recommended to use a solution with a concentration of 10^{-6}–10^{-7} %, although modern research shows that this substance exhibits a higher biological activity in lower concentrations [**Ошибка! Источник ссылки не найден.**].

The aim of our study was to study the effect of low-concentration 24-epibrassinolide solutions on some parameters of *Daucus carota* L.

Material and methods. The study was carried out in April 2020 on the basis of the Department of Botany and Ecology of BrSU named of A.S. Pushkin. The object of the study was solutions of 24-epibrassinolide in concentrations of 10^{-9}–10^{-11} %. The subject of the study was the reaction of morphometric parameters of seedlings, as well as indicators of sowing qualities of seeds of *Daucus carota* L. variety Chantenay Royal to the effect of

24-epibrassinolide. *Daucus carota* L. seeds were pre-soaked in solutions for 4 hours. After soaking, the seeds were placed in Petri dishes on a layer of filter paper moistened with distilled water, 30 pcs. each. As a control, we used seeds soaked in distilled water for the same period of time. The experiment was carried out in 3 repetitions. The recorded indicators were: germination energy, germination, stem length, root length. Germination of the culture was carried out according to GOST 12038-84. Registration of morphometric parameters was carried out on the 10th day of the experiment.

Findings and their discussion. As a result of the research, the ambiguous reaction of the recorded parameters to the presowing treatment of carrot seeds with solutions of 24-epibrassinolide of various concentrations is determined.

Presowing treatment of carrot seeds with solutions of the studied steroid compound had practically no effect on the recorded sowing qualities of seeds. Thus, in all variants the proportion of germinated seeds on the 5th day of the experiment was 77,8 %. On the tenth day of the experiment, a change in the number of germinated seeds was noted only in the variant with the highest concentration of epibrassinolide (10^{-9} %) – from 77,8 to 85,6 % or + 10 % relative to the control.

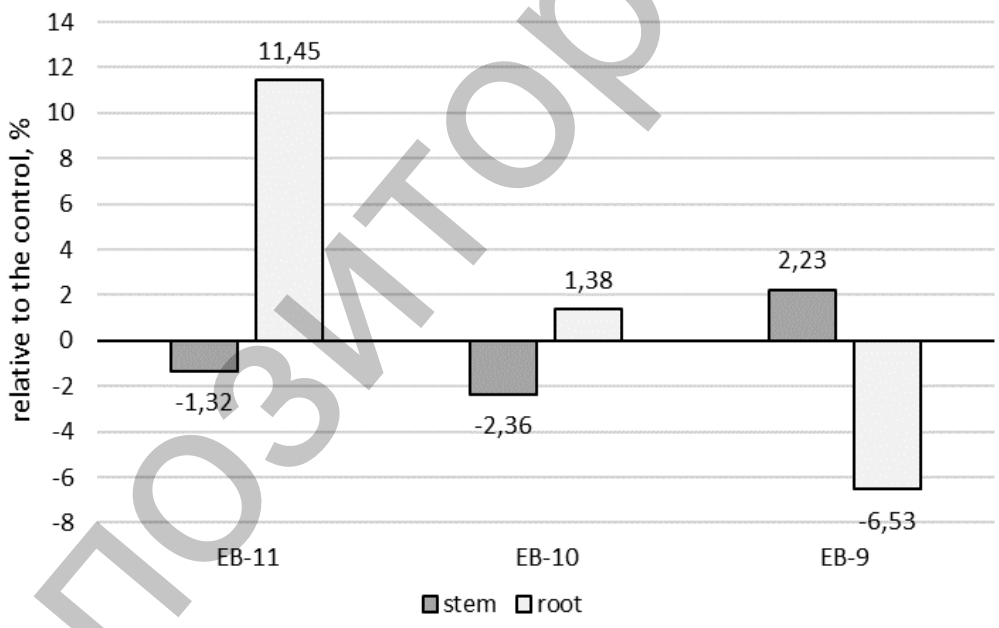

Figure 1 – Change in the length of the root and stem of carrots as a result of presowing treatment with solutions of 24-epibrassinolide

The most sensitive parameter to the action of brassinosteroid is the root length indicator. So, soaking seeds in this substance at the highest concentration (10^{-9} %) led to inhibition of root growth in length. If the average value of this indicator in the control was 31,26 mm, then in the variant after treatment with epibrassinolide at a given concentration – 29,22 mm

(-6,53 %). The use of a lower concentration of the substance (10^{-10} %), on the contrary, had a weak stimulating effect (+1,38 %). The influence of the most diluted solution of a biologically active substance was characterized by the greatest positive effect relative to the index of carrot root length – +11,45 % relative to the control.

The reaction of the stem to the action of the considered biologically active substance was less pronounced, the deviation from the control variant did not exceed 2,5 %. Thus, seedlings from seeds treated with epibrassinolide at a concentration of 10^{-9} % – 47,13 mm were distinguished by the longest stem length, which was more than the value in the control by 1,03 mm or 2,23 %. A decrease in the concentration of a biologically active substance led to a slight inhibition of growth processes in the stem. Thus, when treating seeds with solutions at a concentration of 10^{-10} % and 10^{-11} %, a decrease in the length of the stem by 1,09 mm and 0,61 mm, respectively (-2,36 and -1,32 %) is noted.

Conclusion. In general, 24-epibrassinolide at low concentrations had an insignificant effect on the recorded parameters. In this case, the growth of the root in length was characterized by an inverse correlation on the concentration of the active substance (r = -0.99), and the growth of the stem and the number of germinating seeds was positive (r = 0,74 and r = 0,87, respectively).

1. Bondarenko, V.Yu. Analysis of the effect of brassinosteroids on the growth of wheat roots using phenomenal approaches / V.Yu. Bondarenko [et al.] // Journal of the Belarusian State University. Biology. – 2017. – No. 1. – P. 31–37.

2. Khripach, V.A. Brassinosteroids / V.A. Khripach, F.A. Lakhvich, V.N. Zhabinsky. – Minsk: Science and technology, 1997 . – 287 p.

3. Zullo, M. A. T. Brassinosteroid phytohormones – structure, bioactivity and applications / M. A. T. Zullo, G. Adam // Brazilian Journal of Plant Physiology. – 2002. – Vol. 14, № 3. – P. 26–31.

THE INDICATORS OF LIPID EXCHANGE OF HEMOLIFA OF PULMONARY FRESHWATER MOLLUSCS LIVING IN THE WATER BODIES OF GOMEL REGION

Anastasia Sobolevskaya, Olga Latysheva
VSU named after P.M. Masherov, Vitebsk, Belarus

The need to assess the effects of various environmental factors on the vitality of the body has now increased. Often X two common lung freshwater mollusks *Lymnaea stagnalis* (pond snail) and *Planorbarius corneus* (horn reel) [1] are used. To assess the body's condition, the indicators of carbohydrate, nitrogen and lipid exchanges are determined, and the rate of mobilization and utilization of energy substrates is studied, under the influence of various factors [2].

It is possible to evaluate the activity of lipid exchange when establishing the content of general cholesterol, triacylglycerol, cholesterol of high density lipoproteins. Lipids play an important role in cell metabolism. Cholesterol enters