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The nature of changes of biometric indexes and the maintenance of photosynthesizing pigments in sprouts after complex impact of physical factors and synthetic regulators of body height on seeds of barley of ordinary (*Hordeum vulgare*)

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Abstract

The present article is devoted to the study of the complex influence of physical effects (ultraviolet radiation, ozone and a constant magnetic field (MP) with induction of 300 Gs) and chemicals (potassium humate, growth stimulator "Epin-estra" and starch) as factors of presowing treatment of barley seeds on the growth and biochemical parameters of seedlings (the content of photosynthetic pigments: chlorophylls a and b, carotenoids).

Common barley seeds of (*Hordeum vulgare*) were pre-sowed in a magnetic-plasma plant under the influence of UV radiation, magnetic field and ozone in a complex for one minute.

The seeds after a complex of physical factors were divided into groups and additionally treated with chemicals. The obtained seed samples were germinated and examined. The technique of carrying out the experiments is presented, the results obtained are graphically obtained with respect to the control.

The most effective was the complex treatment of physical influences and the "Epin-extra" preparation for barley seeds, which resulted in increased activation of seedling growth, an increase in the content of chlorophylls a and b compared to controls and seeds treated with "Epin-extra" alone throughout the germination period.

Under the influence of a complex of physical factors, together with treatment with potassium humate, as well as starch, a decrease in the growth of seedlings and a decrease in the concentration of photosynthesizing pigments with respect to the control group were observed.

The described method of presowing treatment of plant seeds can be applied in modern plant growing to increase the yield of agricultural crops and the effectiveness of the application of mineral fertilizers.

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