
THE EFFECT OF 24-EPICASTASTERONE AND ITS CONJUGATES WITH ACIDS ON THE PHYSIOLOGICAL AND BIOCHEMICAL PARAMETERS OF *TRIFOLIUM PRATENSE* L.

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Brassinosteroids play a significant role in the plant life cycle: from seed germination to natural death. Earlier studies of brassinosteroids describe their effect on increasing the growth, yield and biological value of plants, on the functional state of the photosynthetic apparatus and the amount of pigments, as well as their involvement in the regulation of the formation of plant protective systems¹⁻⁴. Currently, the research of biological activity of brassinosteroids conjugates is of great interest. To study the influence of 24-epicastasterone (EC) and its conjugates on the physiological and biochemical parameters of the meadow clover (*Trifolium Pratense* L.) in the conditions of a vegetative laboratory experiment there were used the most effective concentrations of the substances which in the preliminary laboratory experiment had the greatest effect on the growth of roots and shoots of clover: EC 10^{-10} M and 10^{-8} M, S23 10^{-10} M (2-monosalicylate of 24-epicastasterone) and S31 10^{-8} M (tetraindolyl acetate of 24-epicastasterone).

The effects of EC and its conjugates on the content of the main photosynthetic pigments and protein showed a significant change in parameters depending on the methods of application of the substances. For the pre-sowing processing of clover seeds, negative values of the pigments relative to the control were recorded for all the substances and concentrations. During foliar processing, an increase in the content of chlorophyll *a*, *b* and carotenoids is observed when using EC and its conjugates with acids (the exception is chlorophyll *a* after processing with S23 10^{-10} M where slight decrease is observed compared to the control). The maximum increase of the pigments is observed after using the foliar processing of plants with the conjugate S31 10^{-8} M. Thus, the content of chlorophyll *a*, *b* and carotenoids is 16.5, 18.5 and 17.2% higher than the control. There is an increase in protein content during pre-sowing processing with S23 10^{-10} M and S31 10^{-8} M (8.0 and 6.7%, respectively), as well as during foliar processing with S23 10^{-10} M (12.6%).

Among the tested substances and concentrations for clover tetraindolyl acetate of 24-epicastasterone at concentration 10^{-8} M and 24-epicastasterone at concentrations of 10^{-10} and 10^{-8} M have the maximum effect on the content of photosynthetic pigments after using foliar processing while the accumulation of proteins is observed under exposure to 2-monosalicylate of 24-epicastasterone 10^{-10} M despite the processing method.

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