PP11. DEPENDENCE OF THE GROWTH-STIMULATING ACTIVITY OF CYCLOARTANES ON THEIR CHEMICAL STRUCTURE

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Triterpene glycosides play a crucial role in the regulatory systems of plant organisms. Studying the effects of glycosides on plant growth and metabolic processes, as well as establishing the relationships between chemical structure and biological activity, is necessary not only to understand their bioregulatory functions but also for practical applications.

In this study, we conducted a comparative analysis of the growth-stimulating activityof cycloartane triterpene glycosides - cyclosieversiosides A, E, F and astragaloside VII - based on their chemical structure. The compounds, were examined under laboratory conditions using wheat and cucumber plants. Auxin activity was determined by the ability of these substances, at a concentration of $1x10^{-5}$ %, to induce root formation in mung bean cuttings.

The results indicated that cyclosieversioside A exhibited high activity in wheat culture, with growth indicators almost on par with the growth regulator Floroxan. The lengthof wheat roots increased by 12.7%, and stems by 6.3%. In cucumber culture, the highest indicators, were observed when exposed to a solution of astragaloside VII, with root length exceeding the control variant by 36.9% and stem length by 9.6%.

These findings suggest that the substances demonstrate auxin-like activity, predominantly promoting the growth of seedling roots.

Additionally, studies on the activation of root formation through the influence of cycloartanes confirmed the ability of these substances to stimulate the root system. Root formation was observed after 10-14 days, with a high percentage of rooted cuttings observed at a concentration of $1x10^{-5}$ %. Cyclosieversioside A and astragaloside VII demonstrated significant activity, with the number of roots per cutting surpassing the control variant by 15.5% and 13.9%, respectively.

In conclusion, the comparative analysis of the growth-stimulating activity of cycloartane triterpene glycosides - cyclosieversiosides A, E, F and astragaloside VII - based on their chemical structure revealed that cyclosieversioside A and astragaloside VII exhibited high growth-regulating activity.