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ISOLATION OF AN ENDOGENOUS GROWTH REGULATOR FROM AGRICULTURAL CROPS

АУЫЛ ШАРУАШЫЛЫҚ ДАҚЫЛДАРЫНАН ЭНДОГЕНДІ ӨСҮ ПЕТТЕУІШІН БӨЛІП АЛУ

ANNOTATION

This article explores the use of biological products with growth-stimulating and immunomodulatory effects in agricultural practice, focusing on the production and influence of growth regulators on grain crops, specifically the high-grade winter wheat variety Steklovidnaya-24 from KazNIIZIR. The study aims to develop an endogenous growth regulator and assess its impact on grain crops. Phytohormones, as endogenous growth regulators, play a crucial role in plant growth and development, controlling various physiological and morphogenetic programs. The research involves obtaining growth regulators from cereal crops, with a particular focus on the cytokinin N6-benzylaminopurine (6-BAP). The experiments, conducted under hydroponic conditions, reveal the positive influence of growth regulators on seed germination and biometric indicators, such as increased linear dimensions and root system volume. The results demonstrate that the 1% concentrated solution of wheat extract with 6-BAP exhibited the highest germination rate, showcasing its potential as an effective growth regulator for winter wheat seeds. Overall, the study emphasizes the importance of natural growth regulators for sustainable agricultural practices and highlights the specific impact of cytokinins on seed germination and plant growth.

Key words: Phytohormone, 6-BAP, auxin, gibberellin, cytokinin, ethylene, photosynthesis.

Introduction. In recent years, considerable attention has been devoted to the development of plant protection techniques in agriculture, emphasizing the utilization of biological products with growth-stimulating and immunomodulatory effects. A diverse range of bioregulators has been formulated for major crops, reflecting the ongoing efforts to enhance agricultural practices.

The modification of proteins through ubiquitination is crucial for both human health and the regulation of plant growth, development, and their responses to different environmental stresses [1-5].

The data presented in tables 1, 2 allow us to judge the positive impact of the studied plant growth regulators on seed germination and biometric indicators: the linear dimensions of plants and the volume of the root system increase. Shoots from seeds treated with Rostock and Epin-extra appeared earlier than the control by 7 -10 days, Kemiro-Hydro – for 4 days. The best percentage of seed germination was found when treated with Rostock 99.26% compared to the control 75.7%.

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