

Project. The effect of increasing cold on the dynamics of polyamine biosynthesis in winter oilseed rape and the scope its control

Adverse environmental factors have a significant impact on the growth and productivity of economically important agricultural crops. One of the main challenges of modern agriculture is to improve plant productivity in adverse environmental conditions, and one of the most important areas of science is research of the mechanism of plant stress and its management. In order to reduce the impact of adverse environmental conditions, much attention is paid to biologically active substances. Polyamines have been shown to be involved in plant response to environmental influences. Studies have shown that intensified polyamine biosynthesis in transgenic plants and exogenous effects of polyamines increase plant tolerance to stress; mutations in polyamine biosynthesis and inhibition of their biosynthesis result in less tolerance to abiotic stress. In this fundamental and applied research, the use of molecular methods will increase the understanding of specific polyamine mechanisms and signal transduction pathways under optimal and stressful conditions in winter oilseed rape and will provide information for the development of biotechnological solutions. In parallel, an analysis of abiotic stress markers and an assessment of biometric characteristics and plant survival will be performed. The results of the study will complement the scientific knowledge about the plant's response to the cold. Based on the results obtained, science-based recommendations will be developed.

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