

## SESSION I – AGRONOMY

### Subsection - 1.1. Agronomy

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#### THE INFLUENCE OF THE COORDINATION COMPOUND OF ZINC ON THE GROWTH AND DEVELOPMENT OF MAIZE PLANTS UNDER MOISTURE DEFICIT CONDITIONS

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The use of physiologically active substances with properties than regulate plant growth and development is an important way to mitigate the impact of drought. Zinc is an essential trace element for most crops. This element regulates the biosynthesis of vitamins as well as the metabolism of proteins, carbohydrates and phosphorus nutrients, it increases the content of ascorbic acid, chlorophyll, dry biomass and has the ability to increase plant resistance to extreme temperatures. Based on the major importance of zinc, the purpose of the research was to study the action of the new coordination compound of zinc (CCZn), with the formula  $\{[Zn_3(HL)_2(H_2O)_6](SO_4)_2 \cdot 1.5dmf \cdot 2.5H_2O\}_n$ , in which  $H_2L = 2.6$ -diacetylpyridine bis (isonicotinoylhydrazone). The tested coordination compound was synthesized and analyzed within the Institute of Chemistry of MSU. Experiences were performed under laboratory conditions, and the results of the study demonstrated at the initial stages of ontogenesis beneficial influence of the CCZn on the growth and development of maize seedlings in optimal conditions and moisture insufficiency.

Following the analysis of the results obtained, it was found that both in optimal and drought conditions, seedlings obtained from seeds treated with CCZn differ in higher values of morphological parameters, compared to untreated seedlings grown under the same conditions. In the early stages of plant development, the zinc coordination compound had a positive impact on the growth and development of maize seedlings in the 0.01-0.0001% concentration range. Maximum beneficial effect was obtained when maize seeds were treated with the CCZn solution of 0.001% concentration. The coordination compound of zinc has properties of biologically active substance, manifested by maintaining a significantly higher level of plant growth and biomass accumulation in optimal conditions and water deficiency, compared to the control variant.

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