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IMPACT OF BINARY COMBINATIONS OF COLLOIDAL SOLUTIONS OF NANOPARTICLES OF METALS ON THE GROWTH PROCESSES OF WINTER WHEAT PLANT

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The effect of binary combinations of colloidal solutions of biogenic metals on the growth processes of plant winter wheat depending on sowing seed treatment and foliar treatment plants. Found that more effective revenue nanoparticles of metals through leaf surface, compared with pre-treatment of seeds. Proceeds nanoparticles Cu + Zn induced growth processes aboveground plant parts, whereas the combination of nanoparticles Mn + Fe increased the length of the main root.

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Colloidal nanoparticles solution Mn + Fe, which made spray through the leaf surface, do not promote the growth of the ground and did not affect the growth of the main root. For seed treatment with a mixture of nanoparticles Mn + Fe, height above ground parts of plants has not changed for 10 day exposure. However, the main root length in plants grown from seeds soaked in a mixture of metals Mn + Fe, was 6% greater than control.

Conclusions. So was evaluated stimulatory effects of two combinations of mixtures of nanoparticles Cu + Zn and Mn + Fe on the growth processes of aboveground and underground parts of winter wheat seedlings. Proceeds Cu + Zn nanoparticles induced growth processes aboveground parts of the plant, while the combination of Mn + Fe nanoparticles increased the length of the main root.

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