INFLUENCE OF BIVALENT METAL SULFATES ON CUCUMBER GROWTH (*CUCUMIS SATIVUS* L.) ON THE SOUTHERN BLACKSOIL

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Low availability of some nutrients caused by high pH, carbonates and organic matter in the fertile southern blacksoil may limitate growth and production of agricultural plants. That's why seed treatment and foliar application of some bivalent metals may be used for improvement of yield and quality of vegetables. The research is required to estimate response of plants to Mn, Fe and Mg, applied with sulfate solution seed treatment. It would help to uncover physiological mechanisms of influence of the metals mentioned on plant metabolism.

During summer 2006 plants of cucumber were grown in field conditions without irrigation from the seeds, treated with Mn, Fe (II) and Mg sulfates (control seeds treated with water). Application of metals resulted in increasing biometrical parameters (leaf size, sprout length, amount of leaves and flowers), chlorophyll content, and occurred bigger yield: 30 % from Fe (II) and Mg - treated plants and 38 % from Mn - treated. Positive effect (assessing the mentioned physiological changes) of each metal differed in dynamics during ontogenesis of plants. In the conditions of year 2006 Fe (II) stimulated growth and yield production of cucumber in the first and second quarters of the vegetation, Mg - during second and third quarters and Mn - during third and fourth quarters. The observed dynamics may be the result of co-action between (1) specific biochemical processes activated by each metal in seeds and (2) influence of the environment, which was changing from favorable in the beginning of vegetation to stressful - in the end. Further research of the notified phenomenon is needed.

ВПЛИВ СУЛЬФАТІВ ДВОВАЛЕНТНИХ МЕТАЛІВ НА РІСТ ОГІРКА *(CUCUMIS SATIVUS* L.) НА ПІВДЕННОМУ ЧОРНОЗЕМІ

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В умовах 2006 року на богарі дослідили вилив передпосівної обробки насіння сульфатами Mn, Fe (II) and Mg на ріст та врожайність огірка. Відмічено стимулюючий вплив обробки, який за динамікою протягом онтогенезу відрізнявся для кожного металу: для заліза спостерігався на початку вегетації, для магнію - в середині, для марганцю - у другій половині.