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Biotechnological aspects of the use of complex preparation 1-ethoxysilatrane with crezacin in crop production

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Abstract

Currently, the expansion of research to find new efficient and environmentally friendly plant growth regulators is an urgent task of agricultural biotechnology. One of the main requirements of the modern development of crop production using technologies for the use of new plant growth regulators is, along with the environmental friendliness of new drugs, both at the application stage for foliar feeding of plants and improving the quality of the final product. One of the new drugs that meet these requirements is a complex preparation of 1-ethoxysilatrane with crezacin. The work shows the high efficiency of the use of the new apple growth regulator in the processing of apple leaves. As a result of the studies, a synergism of the joint action of 1-ethoxysilatrane and crezacin as part of a complex preparation was revealed during foliar treatment of apple leaves of 3-4 phases and the beginning of flowering by spraying the drug in doses of 15 g/ha. The total increase in apple harvest during foliar treatment of tree leaves was 8.1% or 7.0 t/ha compared with the control. An increase in the quality indicators of gardening products was revealed when using the drug 1-ethoxysilatran with krezacin in terms of the content of dry substances, total sugar, vitamin C and pectin in the fruits. The content in the fruits of nitrates during foliar treatment with a new preparation of tree leaves is reduced by 17.9% compared with the control. The content in the fruits of apples of nitrates during foliar treatment with a new preparation of tree leaves decreases by 17.9%, the lead content by 44% compared with the control.

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