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Plant growth regulators and complex fertilizers in sugar beet protection technology

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Abstract

In the protection system of many crops, including sugar beet, along with pesticides, growth regulators and complex fertilizers with anti-stress properties are used. These plant growth regulators include epin extra and zircon, as well as siliplant silicon fertilizer. In field and production experiments carried out in the farms of the Voronezh and Lipetsk regions, it was found that the combined use of herbicides sinbetan expert PF and betanal expert PF in low consumption rates (1.1 and 1.0 l/ha) with expert epin (50 and 100 ml/ha), zircon (30 and 40 ml/ha), siliplant (0.6 l/ha) has a stronger toxic effect on weeds than the recommended one (1.3 l/ha). In addition, these mixtures accelerate the development phases of the beet. They increase the resistance of the culture to diseases. Spraying beet crops with mixtures increases the yield and sugar content in root crops. The most effective is their double use in a mixture with herbicides and fungicides. Such their use provides an increase in yield by 15-25% and sugar content of root crops by 0.2-1.1%, which significantly increases the yield of sugar per hectare. The data of field experiments are confirmed by the results of production tests carried out at the farm in 2020. Spraying beets with a mixture of herbicide with zircon (20 ml/ha) and cytovite (0.5 l/ha) and then in the phase of closing leaves in rows with herbicide together with ecofus (1 l/ha) and fungicide in the phase of closing leaves with zircon (30 ml)/ha) and ecofus (0.8 l/ha) ensured the collection of root crops in the amount of 60.6 t/ha, which is 3.75 t/ha higher than the yield of beets with the use of pesticides alone. The saved harvest provided the farm with additional profit in the amount of 65800 rubles/ha.

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