

Annotation

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Effect of fertilizers and pre preceding crops on the productivity of sugar beet in the podzolized chernozem of Right-bank Forest-Steppe

Results of studies on the influence of different fertilizer systems and pre preceding crops in the crop rotation on the productivity of sugar beet in the podzolized chernozem of Right-bank Forest-Steppe are given.

Studies have shown that on average for 5 years the productivity of sugar beet root crops-to-clover at saturation of the crop rotation with nitrogen at rates of 45 and 90 kg/ hectare in grounds $P_{45}K_{45}$ and $P_{90}K_{90}$ was 44.6 and 49.9 kg/ hectare, respectively, and the productivity of sugar beet root crops-to-corn for silage was 43.4 and 49.5 kg/ hectare. For saturation of the crop rotation with manure at rates of 9 and 18 t/ hectare, the productivity of sugar beet roots-to-clover was 42.7 and 49.7 t/ hectare and the productivity of sugar beet root crops-to-corn for silage was 41.6 and 48.6 t/ hectare. Higher yield of sugar beet roots-to-clover and sugar beet root crops-to-corn for silage (51.7 and 50.7 t/ hectare, respectively) was obtained by the joint application of manure and mineral fertilizers at the rate of 30 t/ hectare + $N_{60}P_{135}K_{30}$.

The sugar content in root crops depended on the dosage of fertilizer application and sugar beet pre preceding crops. In the mineral fertilizer system a significant decrease in the sugar content of root crops by 0.3-0.5% compared to the check variant was of sugar beet root crops-to-clover and by 0.2-0.4% of sugar beet root crops-to-corn for silage. In the organic fertilizer system the application of 60 t/ ha of manure for sugar beet reduced the sugar content by 0.4% and the sugar content of root crops-to-corn for silage decreased by 0.2%. For the joint application of organic and mineral fertilizers (30 t/ hectare + $N_{60}P_{135}K_{30}$) the decrease in the sugar content of root crops-to-clover was 0.4% and the decrease in the sugar content of root crops-to-corn for silage was 0.3%.

In both parts of the crop rotation the higher productivity of sugar beet in the podzolized chernozem of Right-bank Forest-Steppe was obtained after the joint application of manure and mineral fertilizers. For saturation of the crop rotation with manure at the rate of 9 t/ hectare and mineral fertilizers at the rate of $N_{45}P_{67.5}K_{36}$ with a direct application of 30 t/ hectare of manure + $N_{60}P_{135}K_{30}$ the sugar yield of root crops-to-clover was 9.07 t/ hectare and the sugar yield of root crops-to-corn for silage was 8.84 t/ hectare.

Key words: *sugar beet, manure, mineral fertilizers, pre preceding crops, crop rotation.*