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THE INFLUENCE OF APPLICATION OF STRAW ON PARAMETERS FERTILITY OF TYPICAL CHERNOZEM

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A deficit of manure for conservation and restoration of soil fertility should apply straw or other crop by-products. We investigated the effect of different tillage and fertilization on typical chernozem fertility parameters. Established that organic-mineral fertilizer system, which included the introduction of straw, green manure and mineral fertilizer provided increasing humus content and improve the parameters of its structural and physical state. Content humus in arable layer of typical chernozem on the variant of Straw 1.2 t/ha + N_{12} + green manure + $N_{78}P_{68}K_{68}$ was highest under the reduced tillage and was 3.66%, slightly lower values marked by deep reduced tillage and lowest - for plowing.

Organic and mineral fertilization system along with minimization of tillage contributed to an increase of coefficient structuring. The highest yield of corn marked by deep tillage on the variant of Straw 1.2 t/ha + N_{12} + green manure + $N_{78}P_{68}K_{68}$ - 8,11 t/ha, slightly lower - in plowing (7.62 t/ha) and lowest (7,26) for reduced tillage.

Providing sustainability of soil of the degradation processes in the conditions of deficit of manure leads to find the alternative types organic fertilizer, the most accessible of which is crop residues. However, the question of the efficacy of straw as organic fertilizer is controversial and requires careful consideration. That is why the purpose of our research was to study the effect of straw on individual values typical black soil fertility.

Research conducted experiments in a stationary department of soil science and soil protection to them. prof. M.K.Shykuly in EP NUBiP Ukraine "NDH Velykosnitynske them. O.V.Muzychenka "Fastovsky district of Kiev region. Soil research areas - chornozem typical.

In research was carried comparative study of three tillage systems: 1) plowing at 25-27 cm; 2) different deep tillage; 3) minimum tillage on 10-12 cm.

There was 5 variants of fertilization with the introduction on 1 hectare of crop rotation area: 1) control (without fertilizer); 2) straw 1.2 t / ha + N12 + N55P45K45; 3) Straw 1.2 t / ha + N12 + N78P68K68; 4) straw 1.2 t / ha of green manure + N12 + + N55P45K45; 5) Straw 1.2 t / ha of green manure + N12 + + N78P68K68.

In soil samples were tested for total humus method Turina in the modification Simakov; structural-aggregate composition was determined by Savvinov, structuring ratio calculated as the ratio of the content of agronomically valuable aggregates 10-0,25 mm, silty amounts (less than 0.25 mm) and over 10 mm.

The studies found that the system of fertilizer had greater influence on the humus content than the system of cultivation. The lowest humus content seen in variant without fertilizers for the different deep tillage - 3.38% in typical black soil layer 0-30sm.

Aftereffects straw, green manure and mineral fertilizer have positive effects on humus content. The highest humus content in the topsoil seen a variant Straw 1.2 t / ha + N12 + green manure + N78P68K68 for shallow cultivation ploskoriznoho - 3.66%.

With all the options noted higher humus content in the layer 0-15 cm compared with 15-30 cm layer. Reduced tillage depth has caused increasing differentiation in the 0-30 cm layer.

Dynamics of humus content also depended on tilling and fertilizing the soil. More pronounced amplitude set by different deep tillage, especially for shallow cultivation. It is this method of cultivation on straw version 1.2 t / ha + N12 + green manure + N78P68K68 humus fastest restored because flow of fresh organic residues.

Adding straw together with sowing green manure and mineral fertilizer together with a reduction in the intensity of cultivation increases the humus content in the plow layer of black soil model.

Among the options fertilizer best results was making straw 1.2 t / ha + N12 + N78P68K68, and among the most favorable soil was different deep tillage where increasing factor structuring observed in soil layers of 10-20 cm by 22 cm and 20-30% in 11 % to control. With all the choices soil content decreased down the soil profile, only different deep tillage it increased.

The use of organic and mineral fertilizers increased the yield of grain corn 1,34-1,47 t / ha compared to the control. The highest yield obtained using a variant of straw, green manure for the different deep tillage - 8,11 t / ha, while for plowing - 7.62 t / ha, and for shallow cultivation - 7,26 t / ha.

Conclusions. Organo-mineral fertilizer system with the introduction of straw, sowing green manure and mineral fertilizer had positive effects on humus content and the structural and physical state of the soil. The highest content of humus in the plow layer of black soil typical variant seen on Straw 1.2 t / ha + N1 2+ green manure + N78P68K68 for shallow cultivation - 3.66%. In this embodiment, the highest observed values of structuring. However, the yield of corn was highest for deep tillage - 8,11 t / ha.