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THE CHANGE OF THE STRUCTURAL COMPOSITION OF THE ORDINARY CHERNOZEMS FOR DIFFERENTS TYPES OF USE

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Formulation of the problem. The study of soil structure is a key issue, especially in a time when the question is quite acute physical degradation result in excessive pressure on the ground heavyagri-business technology, which reduces crop yield and deterioration of its structures and. There is a need to study the structural and aggregate composition of chernozem soils to solve the above-mentioned problems.

Soil samples were selected on the heavy-gravel ordinary chernozem on Erastivska experimental station during the summer period in four repetitions from each monitoring site, depending on the type of use (fallow, forest belt, fertilizer option and control). The age of the fallow and forest belt are 50 and 70 years respectively, fertilizers were applied for 26 years. During this period, the $N_{1305}P_{1250}K_{1050}$ was introduced at the experimental site. Soil samples were taken within the humus horizon (0–10, 10–20 and 20–40 cm).

The largest number of lump (> 7 mm) fractions on NPK and control, 2 times less in the forest belt and the fallow, whereby this tendency is observed in all studied layers of soil. The fraction content of 7–5 mm, as well as the fraction 2–1 mm, is almost the same for all types of use. As far as the amount of the fraction is 5–2 mm, it is the largest in the fallow and forest belt, and the least in the agricultural use soils. The number of fractions 1-0.5 mm is greatest on NPK and control, and the smallest - in the fallow and forest belt. The highest content of a dusty (<0.25 mm) fraction is observed in the fertilized variant, somewhat less in the control. Different trends in the distribution of the number of fractions between the arable soils and the fallow and forest belt are explained not using in agriculture and, as a result, they are less degraded by the influence of physical processes.

According to the results of dry sieving, it was found that there was a decrease in the number of fractions > 7,7–5, 5–2 and 2–1 mm at the fallow, forest belt and at the fertilized chernozem common, and in the shallow fractions <1 mm - their number is increases. It should be noted that on control there is a decrease in the number of aggregates with depth in fractions 7–5, 5–2, 2–1 mm and <0,5 mm, and as a tendency, their increase in the fraction> 7 mm, that is, increase in lump.

When wet sieving it is determined that there is an increase in the number of aggregates with depth in fractions> 7 mm and <0,5 mm, in others - their decrease

for all types of use. Quantity fraction <0.25 mm decreases with depth for all types of uses, except NPK, where it grows, and in the largest fraction> 7 mm, there is a decrease in the number of aggregates in all types except for the flood.

As a result of the research, a water resistance coefficient was determined. The highest water resistance of the aggregates was noted on the fallow, the smallest on the control, while for all types of use there was an increase in the number of waterproof aggregates with depth, except for the type of use of NPK which can be explained by different levels of moisture.

Conclusions. As a result of the research the regularities of the distribution of the number of aggregates in different fractions of structural- aggregate composition depending on the type of use are established. It was established that for dry sieving, the largest content of lump (> 7 mm) and dusty (<0,25 mm) fractions at all depths is noted on the fertilized type and control, the number of the most valuable structural aggregates – in the fallow and in the forest belt. Percentage of the total number of fractions >7 mm and 5–2 mm are the highest on all types of use. In wet sieving, a similar tendency is observed regarding the distribution of structural aggregates by soil layers and types of use. The largest number of agronomically valuable structural units is observed at the fallow, the smallest - in the fertilized variant.

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