STRUCTURAL - FUNCTIONAL PARAMETERS OF ARABLE CHERNOZEMS IN THE NISTRU - PRUT AREA

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Within the contemporary stage of anthropo-natural pedogenesis, the evolutionary trend of arable chernozems is determined by interdetermined and interdependent processes of physical degradation accompanied by various negative ecological-genetic and agroproductive effects materialized in changing the direction and intensity of typogenetic processes.

An integrative index of these changes is the structural - aggregate composition of chernozems characterized by micro - and macrostructural parameters.

The generalization of research in the field showed that in the composition of the microstructure of arable chernozems (<0.25 mm) microaggregates predominate > 0.01 mm (68 - 84%). From which, about 40 - 60%

belong to the fraction 0.05 - 0.01 mm. The content of microaggregate clay (<0.001 mm) makes up < 3%. At the same time, however, the indices of aggregate instability show that within the current humus contents the degree of vulnerability of the soils to disaggregation increases. As a result, a stable tendency to increase the content of aggregates > 5 mm of agrogenic origin is established in the arable layer. In their composition predominate formations > 10 mm. Instead, the content of the 5-1 mm aggregates, responsible for the ecological functions of the soils, is reduced. In their composition the content of aggregates 3 - 1 mm is about 1.7 times lower than in non-arable chernozems. The content of hydrostable aggregates > 0.25 mm is less than 50%, and the 1 - 0.25 mm. aggregates predominate in their composition.

The specified changes lead to a reduction in the sequestration-stabilization capacity of carbon in the structural aggregates and an increased vulnerability of soils to more severe climate phenomena. The reduction of the content of aggregates 5 - 1 mm is the main cause that leads to the increase of the degree of vulnerability of the soils to drought, while the increase of the content of > 1 mm causes the reduction of the anti-erosion resistance of the soils.