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TRANSFORMATION OF THE SOIL-ABSORBING COMPLEX OF THE CHERNOZEM SOILS IN THE KAMENNAYA STEPPE UNDER PROLONGED ANTHROPOGENIC AND POST-RECLAMATION INFLUENCE

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Intensive anthropogenic and long-term post-reclamation influence on soil cover leads to appreciable changes in the structure of the soil-absorbing complex (SAC). The main reasons of the changes are intensive tillage, application of mineral fertilizers and seasonal changes in groundwater level. The purpose of this experiment was to study the various anthropogenic influences on the transformation of the soil-absorbing complex of the chernozem soil in the Kamennaya Steppe.

The paper presents the results on the distribution of the physical and chemical indicators of the chernozem both in the topsoil and the soil profile. The diversity of the soil on the content of exchange bases on the flat key site, typical for the central part of the chernozem zone of Russia, was revealed. It was found that in recent decades there was a redistribution of the exchange bases composition in the soil-absorbing complex of the chernozem, as a result of intensive anthropogenic impact. Water reclamation is a powerful factor and can change the qualitative composition of the soil-absorbing complex. A regular decrease in the share of exchange-absorbed calcium and a simultaneous increase in the share of exchange-absorbed magnesium and especially sodium (up to 7% of the amount of cations in the soil-absorbing complex) were revealed. This pattern was most clearly observed in the carbonate-accumulative horizon.

Key words: chernozem, the exchange bases, soil-absorbing complex, the environment reaction, anthropogenic influence, Kamennaya Steppe.