

**MICROAGGREGATE COMPOSITION OF KRASNOYARSK FOREST-STEPPE AGROCHERNOZEMS
UNDER DIFFERENT TILLAGE**

N. L. Kurachenko, A. A. Kolesnik, E. S. Parchenko

*Krasnoyarsk State Agrarian University,
90 Mira pr., Krasnoyarsk, 660049
E-mail: kurachenko@mail.ru*

In the field experiment, the influence of the main tillage methods on the content and spatial distribution of microaggregates in agrochernozezes of the Krasnoyarsk forest-steppe was studied. The study was conducted in a grain-crop rotation in the agrocenosis of wheat with conventional ploughing, minimum and zero tillage. It was established, that light-clay agrochernozezes with physical clay content of 60-65% were characterized by the stability of the mineral mass. The composition of the differently tilled soils was dominated by microaggregates with the size > 0.01 mm (84–89%). Conventional ploughing resulted in the dominance of large microaggregates 0.25–0.05 mm (53–51%), in the differentiation of the tilled layer in the content of microaggregates of coarse and medium dust, and in a very high variability in microstructural aggregates with the size of 1–0.25 mm ($C_v = 70–100$ %). Energy-saving minimum and zero tillage resulted in the uniformity of the 0–20 cm soil layer in microaggregate composition and in an increase in the spatial variability of microaggregates with their size decreasing. Minimum tillage resulted mainly in formation of coarse dust microaggregates (44–45%) while zero tillage – of fine sand (48%). It was revealed that the potential ability to form structure particles was determined by the content of microaggregates > 0.05 mm and was decreasing from conventional ploughing (46–47%) and zero tillage (41–44%) to minimum tillage (31–32%).

Key words: agrochernozeze, conventional ploughing, minimum tillage, zero tillage, texture, microaggregate composition.

