

INFLUENCE OF CROP ROTATIONS AND FERTILIZER SYSTEMS ON STRUCTURAL STATE OF SODDY-PODZOLIC SOILS WITH DIFFERENT EROSION LEVELS

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Soddy-podzolic non-eroded and eroded soils on loess-like loams in grain and grass-grain crop rotations were characterized by an excellent and good state of aggregation. The structural coefficients of non-eroded soils were 2.4–3.2, of moderately eroded – 1.4–1.8, of strongly eroded – 1.2–1.4. Soddy-podzolic non-eroded and slightly eroded soils on moraine loams had an excellent structural state in the grass-grain crop rotation, moderately eroded soils were good, and strongly eroded soils were unsatisfactory in both grain-grass and grass-grain crop rotations.

The structural composition of soddy-podzolic soils on loess-like loams in the grain crop rotation worsened by the end of the rotation, while in the grass-grain crop rotation, on the contrary, it improved. Soddy-podzolic soils on moraine loams in the grass-grain crop rotation had a better structural and aggregate composition than in the grain-grass crop rotation.

The organo-mineral fertilizer system with liming ensured the best structural condition of the soils. The average for the crop rotation content of agronomically valuable aggregates during the growing season of agricultural crops was 76.8% in non-eroded soil, 65.3 in moderately eroded soil, and 59.2% in highly eroded soil, and the structural coefficients were 3.6, 2.1 and 1, 7, respectively.

Keywords: eroded soils, soil structure, structure factor, crop rotation, fertilization system.