EROSIVE VELOCITY OF WATER FLOW FOR SODD-PODZOL SOILS WITH DIFFERENT AGRICULTURAL BACKGROUND

M. M. Tsybulka[1], V. B. Tsyribko[2], A. V. Yukhnovets[2], I. I. Zhukova[3], I. A. Logachov[2]

1International Sakharov Environmental Institute of Belarusian State University, 23/1 Dolgobrodskaya str., Minsk, 220070, Belarus, E-mail: nik.nik1966@tut.byЭ
2Institute of Soil Science and Agrochemistry of the National Academy of Sciences of Belarus, 90 Kazinets str., Minsk, 220108, Belarus
3Belarusian State Pedagogical University named after Maxim Tank, 18 Soviet str., Minsk, 220030, Belarus

Soddy-podzolic soils immediately after mechanical treatment are characterized by very low erosion resistance. The erosive velocity of the water flow does not exceed 11.1 cm·s^{-1}. Soil resistance to erosion decreases with increasing degree of erosion degradation. The use of eroded soils in soil-protective grass-grain crop rotations helps improve their resistance to erosion. Medium and highly eroded soils on loess-like loams in the grain crop rotation were characterized by low values of the eroding velocity of the water flow – 16.5–18.5 cm s^{-1}, and in the grass-grain crop rotation – by high and average – 33.1 and 29.8 cm s^{-1}. With the organomineral fertilizer system, an increase in the anti-erosion resistance of the soils was observed compared to the mineral fertilizer system. The eroding velocity of water flow averaged 25.7 cm·s^{-1} on non-eroded soil, 21.8 cm·s^{-1} on moderately eroded soil, and 18.5 cm·s^{-1} on highly eroded soil. Application of lime ameliorants to the soils with the organomineral fertilizer system did not result in any increase in the soil resistance. A close correlation has been found (r=0.76) between the erosive velocity of water flow and the weighted average diameter of water-resistant aggregates in the soil.

Key words: eroded soils, crop rotation, fertilization system, erosion resistance, erosion speed of water flow.