THE INFLUENCE OF SOIL EROSION DEGREE ON TYPICAL CHERNOZEM MACROSTRUCTURE

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At the experimental lands of All-Russia Research Institute of Arable Farming and Soil Erosion Control (Kursk Region, Medvensky District) located on the slopes of northern and southern exposure and on the watershed plateau, the influence of the slope exposure and the soil erosion degree on the size of dry soil aggregates (Dc), the size of the aggregates remaining after aggregate moistening (Dm) and their distribution entropy (Hc) have been studied. It was found that the Dc and Hc on the southern slope were increasing along with the increasing soil erosion degree. Dm on polar slopes was increasing, but more uniform distribution of Dm, which was characterized by Hm, was found in the soil of the southern slope. With increasing erosion degree, the diameter of soil particles (D^-) remaining after disintegration of larger aggregates (D^+) is increasing while the uniformity of the particle distribution is decreasing because of the decreasing entropy (H^+) of content distribution of the aggregates with the weighted average diameter (D^+). The entropy (H^-) of content distribution of the aggregate with the weighted average diameter (D^-) was related to the slope exposure. Decrease of the aggregates (D^+) which could be disintegrated after moistening was found on the polar slopes and the increase in "stable" (Ss) and water resistant aggregates (Sm) was observed only on the southern slope. It could be concluded that the soil structure of typical chernozem on the slope of southern exposure and on the watershed plateau is of good quality and belongs to the quality classes IVa and IVb, while the weakly and mildly eroded soil on the northern slope are characterized by unsatisfactory soil structure and belongs to the quality class Ir.

Key words: typical chernozem, slope exposure, soil structure, erosiveness.