

PLANT COVER DIVERSITY OF TECHNOZEMES OF RECLAMATION LAND AT THE NIKOPOL MANGANESE ORE BASIN

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The study of the disturbed natural complexes evolution processes is important for the development of the most effective and rational methods of reclamation. The restoration of vegetation is one of the most informative components of ecosystems. Plant complexes, which have been formed during self-establishment, are an integral indicator of the dumps suitability degree for biological reclamation.

The objective of the work is to study the plants species composition on different variants of technozems and the natural steppe area. Species composition of plants have been studied on sod-lithogenic soils, on loess loams, on gray-green and red-brown clays, and on technozem with a chernozem bulk layer of the reclamation site of the Nikopol manganese ore basin (Pokrov, Dnipropetrovsk region). The study site in natural conditions is situated on the slope of the Kamenistaya gully (the eastern outskirts of Dnipro, 48°23'11"N, 48°23'11"E), the slope of the south-eastern exposure with a slope of 13°. The size of the test plots were 21 m × 45 m.

The vegetation of the study site on sod-lithogenic soils on loess loams is represented by 26 species of higher vascular plants that belong to 8 families. On the study site on sod-lithogenic soils on red-brown clays species richness is somewhat smaller (25 species from 9 families). At the study site on gray-green clays 22 species from 7 families have been detected. The smallest number of plant species (17 species from 8 families) has been found on the test site with a bulk layer of chernozem. Unlike plant communities on technozems, the species richness of the steppe area was much higher. At the study site on the steppe slope of the ravine has been found 51 species from 18 families.

Among the leading families on sod-lithogenic soils on loess were Asteraceae Bercht. & J. Presl (10 species), Fabaceae Lindl. and Poaceae Barnhart (in 5 species). In total, 57.69 % of the highest vascular plants from the total species richness belong to the dominating families. Family Apiaceae Lindl. was represented by 2 species; families Brassicaceae Burnett, Convolvulaceae Juss., Ranunculaceae Juss., Resedaceae Bercht. & J. Presl. were represented by one species of each.

The dominating family on the study site on sod-lithogenic soils on red-brown clays is the family Asteraceae (11 species). The subordinate positions are occupied by the families Poaceae (4 species), Fabaceae (3 species), Apiaceae (2 species), Convolvulaceae, Ranunculaceae, Resedaceae, Rosaceae Juss., Hypericaceae Juss. – for 1 species of each.

At the study site on a bulk layer of chernozem vegetation has been represented by families Asteraceae (5 species), Poaceae (4 species), Apiaceae and Fabaceae – for 2 species of each; Convolvulaceae, Ranunculaceae, Resedaceae, Rosaceae – for 1 species.

The dominating families at the study site on gray-green clays are the Asteraceae (9 species). The subordinate positions are occupied by Fabaceae (4 species), Poaceae (3 species), Apiaceae (2 species), Convolvulaceae, Ranunculaceae, Resedaceae, Rosaceae – for 1 species of each.

The basis of the systematic spectrum of vegetation cover of the study site on the steppe slope of the ravine is the Asteraceae family (16 species). Less abundant are the families of Lamiaceae Martinov (5 species), Fabaceae and Rosaceae (4 species each), Apiaceae and Euphorbiaceae Juss. (3 species each), Caryophyllaceae Juss. (2 species), Aceraceae Juss., Brassicaceae, Convolvulaceae, Resedaceae, Rubiaceae Juss., Boraginaceae Juss., Caesalpinaceae R. Brown, Campanulaceae Juss., Moraceae Link., Violaceae Batsch (for 1 species each).

Representation of families on technozems is much less than in the virgin steppe area, which is associated with a relatively small ecological capacity of the habitat. It is a complex of unfavorable conditions for settlement and coexistence of the maximum possible number of species. Also, the limiting factor may be the variability of environmental habitat regimes.

Key words: Plant Cover, Vegetation, Recultivation, Reclamation