

## Morphogenetic Properties Of Grass-Gray Soils

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**Abstract:** Origin, distribution, relief of gray oasis soils in the territory of Surkhandarya region, lithological-geomorphological, hydrogeological conditions of the studied area and soil-forming factors and morphological features of soils, mechanical composition, nutrient supply.

**Keywords:** meadow-gray soils, morphology, mechanical composition, relief, geomorphology, nutrient elements.

Surkhandarya region is located in the southern part of Uzbekistan, 180-200 km from north to south and 70-140 km from west to east. The region includes the river valleys of Surkhandarya, Sherabaddarya, Sangardak, Khojaipok, Kofirnikhan, Topalang, the right bank of the Amu Darya. It is bordered by Gissar in the north, Boysun and Kohitang in the west, Babatag in the east, and the Amudarya valley in the south, forming the whole Surkhan-Sherabad oasis.

Surkhandarya region differs from other regions with its unique natural and climatic conditions. The role of natural climatic conditions in the formation of soil fertility in the region is of great importance.

In the southern Surkhandarya region, the weather is almost drier than in other regions, the average annual relative humidity is 43-54%, in July it decreases to 24-32%, in winter it increases to 62-66%, during the growing season it averages 41-44 % is observed.

Evaporation of moisture from the soil surface is 1956-2091 mm in the desert zone, 1860-2000 mm in the foothills, and the moisture deficit (evaporation-atmospheric precipitation) is 1823-1958 and 1555-1640 mm, respectively.

One of the peculiarities of the area is that from time to time the Afghan wind blows along the southwestern direction, and from time to time a dusty wind rises, leaving its effect on the plant and the soil. This region belongs to the hot and dry climate zone.

The geomorphological structure of the Surkhan Sherabad valley has been studied by several researchers. A.Z.Zaychikov [1., 2; 47-p.] 4 ta, S.A.Azimbaev [2; 178 p.] 9, scientists of the Research Institute of Soil Science and Agrochemistry studied 13 geomorphological regions and sub-regions [1; 251-b.].

In the Surkhan-Sherabad valley, the increase in the amount of water-soluble salts and gypsum in the hydromorphic and semi-hydromorphic irrigated soils along the lower zone means that the soil cover of the region is deteriorating. Desertification, humus and nutrient depletion are observed in the region as a result of human exposure.

Under the influence of human factors, the thickness of soils increases with the increase of the irrigation period and the development of tillage. Due to the application of mineral and organic fertilizers, crop rotation, humus reserves also increase, and humus reserves in irrigated soils that are washed away and wind eroded decrease. Water-soluble additives rarely change the chemical composition of irrigated soils. Humans make great changes in the soil in order to grow and harvest crops.

One of the measures taken by people is the application of local organic fertilizers to the lands on irrigated soils, such an event is aimed at increasing soil fertility. In addition to the application of local fertilizers to irrigated lands, the activity of microorganisms is enhanced, which also has a significant effect on soil formation.

In the formation of aggregates in the soil, when the soil is cultivated by humans, the process of decomposition of plant and animal remains in the soil accelerates, in which case the drive layers thicken and lead to the improvement of the aggregates. As a result of periodic irrigation, moisture is retained in the soil,

physicochemical processes take place under the direct influence of moisture, internal erosion and leaching take place in the soil profile, the movement of substances changes.

Under the influence of lithological-geomorphological, hydrogeological conditions and soil-forming factors of the studied area, there are soils of different origin, fertility, salinity, erosion and other degradation processes, reclamation and ecological status.

### **Object and methods of research**

Irrigated meadow-gray soils of Shurchi district of Surkhandarya valley were selected. Profile-genetic, comparative-geographical and chemical-analytical methods were used in the study of gray-oasis soil cover.

The gray soils of Surkhandarya region are radically different from other regions with their unique natural and climatic conditions. The role of natural climatic conditions in the formation of soil fertility in the region is of great importance.

Under the influence of lithological-geomorphological, hydrogeological conditions and soil-forming factors of the studied area, there are soils of different origin, fertility, salinity, erosion and other degradation processes, reclamation and ecological status.

Irrigated grassland-gray soils were observed and samples were taken for chemical analysis at Shermuhammad bobo farm of Shurchi district of the region, where our field-observation areas are located.

Meadow, meadow-gray, gray soils from irrigated semi-hydromorphic and hydromorphic soils in the gray soils of the study area are common and will be considered in the following cross-sectional example.

Irrigated meadow-gray soils are formed in № 1-section alluvial-proluvial deposits, in the zone of gray soils the groundwater level is located at a depth of 2.5-3 meters and consists of proluvial-alluvial deposits as soil-forming rocks.

According to its mechanical composition, it consists mainly of heavy, medium and light sandy soils, weak and moderately saline, low humus and nutrient content. As a result of improved and increased attention to the use of organic fertilizers, an increase in cotton and grain yields is observed in some areas.

0-34 cm. Gray, the soil surface is slightly moist, slightly sandy, fine-grained, low-density, in the form of fine crystals of solitary (10% of the layer) salts, plant roots are medium and underground animal traces are low, semi-rotten plant and straw remains, according to the exact density of transition to subsequent layers significantly;

34-56 cm. Gray, low-moisture, lightly sandy, walnut, moderately dense, salts in the form of fine crystals, plant roots and underground animal traces are rare, half-rotten plant remains, the transition to subsequent layers is noticeable in terms of exact density and mechanics;

56-95 cm. Gray, moist, sandy, grainy, poorly compacted, plant roots and underground animal traces rare, half-rotten plant remains.

95-120 cm. Light gray, very wet sandy towards the lower layers.

The groundwater table is 1,5 m deep.

Irrigated meadow-gray soils are lightly sandy and loamy in mechanical composition, mainly moderately saline in terms of salinity.

The region of the old alluvial plains, consisting of alluvial deposits, is irrigated meadow soils, lightly sandy and sandy in mechanical composition, weak in salinity, moderately saline soils.

The basic laws of soil-geography in the evolutionary development and distribution of the soils of the Surkhan-Sherabad oasis are complex, the land fund of the region is three: the desert zone - lowland and foothill plains, residual plateaus and low mountains; altitude zone - foothill plains, foothills and low mountains; the region of the middle and high mountains is composed of soils [123-; 24-b .; ].

In short, the region of ancient alluvial plains, consisting of alluvial deposits, irrigated meadows - gray soils, light sandy and sandy and medium sandy loam in terms of mechanical composition, weak, moderate and strongly saline soils.

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