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Research Article

TYPES OF SOILS COMMON IN UZBEKISTAN AND THEIR CHARACTERISTICS

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ABSTRACT

This article contains a lot of information about the types of soil distributed in the territory of Uzbekistan and their morphological, anatomical, physiological characteristics. Soil is formed from various rocks on the surface of the earth as a result of the interaction of various natural factors and living organisms under certain conditions.

KEYWORDS

A - with humus; V - passer; S - the mother rock is divided into horizons. Later, Glinka, Zakharov designated genetic layers with different letters. A - humus accumulative layer, V - transitional layer; G - gley; C - illuvial; D - mother rock.

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INTRODUCTION

Soil is formed from various rocks on the surface of the earth as a result of the interaction of various natural factors and living organisms under certain conditions. We understand bedrock as a natural historical body of soil, which differs in its fertility from bedrock that has undergone profound changes under the influence of various natural factors. Soil cover is studied in two ways, using historical geomorphological and geochemical methods. In field and laboratory conditions, the genetic layer of the soil is determined using the method of morphological, cartographic, stationary, experimental, vegetation, and models. Therefore, the soil is a multi-component, complex multi-functional, multi-phase open system, which is formed by the interaction of living organisms and inorganic rocks and minerals, and forms an independent natural body. V.V. Dokuchaev was the first to create a scientific theory of soil formation factors and processes. V.V. According to Dokuchaev's definition, "Soil refers to rocks naturally changed under the influence of water, air, and various living and dead organisms." V.V. Dokuchaev's instructions are reflected in the definition of soil by modern soil scientists: "Earth formed in different climatic and relief conditions under the influence of 5 living and dead organisms and natural waters in the upper horizons of rocks. the natural historical organo-mineral body on the surface is called soil". N.M. Sibirsev, one of the founders of soil science, further developed the ideas of his teacher V.V. Dokuchaev about soil, and his Russian scientist P.A. Kostichev paid attention to the role of biological factors in the formation of soil, especially the world of plants, and so on. ra defines soil as follows: "Soil should be understood as the upper layer of the earth's surface, where the roots of plants penetrate deeply."

Soil fertility

The property of providing plants with water and nutrients, as well as necessary conditions, is one of the different qualities and properties of the basic soil and rock. The main and important task is to fully and comprehensively study soil fertility, increase it, and develop measures aimed at increasing and improving productivity using the achievements of agricultural science. So, soil differs from rock by its fertility. There are several categories of soil fertility. It is divided into medicinal, artificial, potential, effective and relative productivity. Depending on the level of nutrients, water, air and heat necessary for plant life, fertility varies in different soils. For example: in loose, granular structured soils, due to the ease of conditions necessary for plant life, its productivity is good. Thorough study of soils, methods of their use, correct application of various fertilizers, land reclamation and implementation of agrotechnical activities such as irrigation, solving problems such as getting more crops from crops by increasing soil fertility are the most important tasks of soil science.

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Soil-forming parent rocks

Parent rocks are the mineral base of the soil, and the mechanical, mineralogical and chemical composition, physical and chemical physical properties of the rocks forming the soil directly affect the soil formed in it. The composition, structure, and properties of the parent soil differ dramatically. Therefore, the soil will not have the same fertility. The porous rocks that are scattered on the surface of the earth mainly in the plains and can form soil are called soil parent rocks. The formation of soil is related to the removal and redeposition of rock products. On the surface of the earth, there are many processes of erosion, disintegration, displacement, and displacement of rocks. The force of gravity on the Earth's surface mainly depends on the density of the Earth's interior, the weight of the mass, and the shape of the Earth's surface. Any rock in the lithosphere cannot be a parent rock, when only the porous rocks - ruchlyaks - formed in the process of weathering have the characteristic of being a parent rock. All soil-forming or parent rocks are divided into the following groups according to their origin: eluvial, deluvial, proluvial, alluvial, marine, lake, ice, eolian and loess deposits. Alluvial deposits are deposits formed by the accumulation of weathering products in their place in the weathering crust. Basically, these deposits are found in different thicknesses in high plains in mountainous regions. The chemical and mineralogical composition remains almost unchanged. Alluvial deposits are formed by the accumulation of weathering products in the lower parts of the slopes under the influence of the movement of rain and melted snow. Alluvial rocks are well-sorted and flat-layered, usually lying parallel to the slopes. The mechanical composition will be different. It consists of sand, sand, loam and silt. Proluvial alluvial deposits are a mixture of various mechanical materials, such as

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stones, gravel, and sand of different sizes, collected by floodwaters on foothills and hills. If this deposit is mainly influenced by flood waters, it is also called flood deposits. For example: rocks in Ferghana are proluvial deposits. Often, these parent rocks are the parent rocks of barren soils. Alluvial deposits consist of layered deposits of different thicknesses that have been drained and sorted by flowing river waters and are widely distributed in river valleys. These deposits are the mother rock of the fertile soils spread on the river banks, valleys and deltas, which have a unique hydrogeological condition and chemical composition of different thicknesses, formed during floods. (Amudarya, Syrdarya, Kashkadarya, Surkhondarya, Zarafshan, Chirchik, Ohangaron) Marine deposits - mechanical structures of various sizes found on the seabed and on the shores consist of collection remains. Large mechanical elements such as small gravel, large sand and sand are mainly collected on the sea coast, and small particles similar to physical mud and turbidity accumulate as you move away from the coast. These deposits contain a large amount of chemical compounds, including water-soluble salts consisting of chlorides and sulfates, and they are somewhat saline. These deposits are distinguished from other deposits by being usually layered, well stratified and containing a lot of salts. Sometimes these deposits reach 2-3 m. (Khorazm, Fergana and Zarafshan). The role of igneous, metamorphic and sedimentary rocks in the formation of minerals and chemical substances in the soil is huge.

Desert sand soils

Common in Kyzylkum and other sandy deserts. The upper layer is not dense, in some places it forms a thin layer. The thickness of the surface layer is about 5 cm. In this layer, the temperature rises to 70-800 degrees in summer and changes sharply during the day. The surface layer acts as a protective layer and keeps the moisture in the lower layer. Humus content in desert sandy soils is very low - not more than 0.2-0.5%. The characteristic of the mechanical composition of desert sandy soils is that these soils contain a large fraction of fine dust (0.25-0.05 mm) and large dust (0.05-0.01 mm). These soils have almost no salinity.

Barren soils

It is found in the desert part of Uzbekistan, in the ancient alluvial plains of the Amudarya, Kashkadarya, Sherobodarya and other rivers, in the valleys of Zarafshan and Surkhandarya. Salted to varying degrees. It contains a lot of carbonates (8-10%). Humus 0.3-0.8%. The existing agro-irrigation layer on irrigated barren soil varies from 30-40 cm to 1-2 m in thickness, depending on agricultural agro-techniques, local fertilizer applied to the ground, as well as water turbidity. The agroirrigated layer forms a uniform horizon with the same color, mechanical composition, viscosity and chemical properties. Such soils are found in Bukhara region, Karshi and Sherabad deserts. The formation of barren soils is the first stage in the transformation of alluvial plains into deserts.

Barren soils

It is distributed in the low plains of the sandy deserts of the country, in ancient alluvial and prouvial-alluvial plains. It is composed of clay soil, it is periodically flooded, and there is almost no vegetation cover. After the water evaporates, the baldness cracks and turns into a rough crust where the plant does not grow. Barren areas are found among alluvial soils, and in ancient alluvial plains, barrens are one of the main parts of the soil complex. The amount of humus in barren soil is higher than in barren soil (up to 0.5-1.0%), its biological activity is weaker, and it is on the border between soil and geological structures.

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Meadow soils

In the desert zone, gourd waters are developed in places with a depth of 1-3 m (in the lower terraces of Amudarya, Syrdarya, Zarafshan, and Amudarya delta). Similar to meadow alluvial deposits. However, it is often covered with turf. Meadow soils are divided into meadow alluvial soils (along the river valleys) and meadow soils (in the foothill plains formed from prouvial soil) depending on the amount of moisture. Humus content is often more than 2%. Grassland soils are sometimes saline.

Swamp and swamp-meadow soils

It is distributed in the gray soil region and desert zone of Uzbekistan. It is found in the valleys of Syrdarya, Amudarya, Zarafshan, Chirchik, Surkhondarya and other rivers, as well as in the lowlands of the terraces of streams such as Sokh, Isfara, Margilonsoy, Aravonsoy, Akbora, dried up lakes and residual riverbeds. In these places, the ground water is located on the surface (less than 1 m), so there is a lot of moisture in the soil, and the upper layer of the soil is glaciated. The amount of humus is 2-3%. Shorhoks are common among the soils of the desert zone and in the lower part of the gray soil region, in the plumes of river

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valleys or foothill plains, often in present-day oases. It contains various salts (chloride, sulfate, carbonate, etc.) that are easily soluble in water. Most of the salts are in the upper layer of the soil. They accumulate as a result of rising and evaporation of seepage waters. Salty soils are rough, soft and black in terms of their morphological appearance. Crops can be planted after the improvement of the reclamation condition of salty soils.

Meadow-oasis (irrigated) soils

It occupies the main area in irrigated oases in the desert zone (Bukhara, Khorezm, Central Fergana, Karakalpakstan and other places). They are found together with barren oases and swamp-oase soils. Large oases have existed in Zarafshan and Amudarya valleys for 2-3 thousand years. During this period, an agro-irrigation horizon with a thickness of 2-3 m was formed here and buried the natural soil. The agro-irrigation horizon of meadow-oasis alluvial soils is of the same bluish-gray color, mixed with anthropogenic additives. The arable layer is quite dense. Contains 1-1.3% humus. In the conditions of the desert climate and according to the moisture regime, meadow-oasis soils are more prone to salinity. The soil is regularly washed with saline drainage.

Morphological characteristics of the soil

As a result of the processes of soil formation, a number of components, properties and characteristics of the soil that differ from the parent rock appear, and the changes are reflected in the profile of the soil. The soil differs from the parent rock not only by its fertility, but also by its external structure (morphology). The soil profile is the appearance of the genetic horizons of the soil as a result of a certain change in the vertical direction. The genetic horizons that make up the soil profile are distinguished by their unique external morphological features. Based on these signs, it is possible to distinguish soils from parent rocks and from each other, as well as to have a general idea of the progress and speed of soil formation processes. V.V. was the first to point out the need to study the morphological characteristics of the soil in natural conditions and the methods of this approach. Dokuchaev developed and made a proposal. Later S.A. Zakharov, V.V. He perfected Dokuchaev's style. The most important morphological features of soil layers are genetic horizons of the soil, thickness of the layer, color, mechanical composition, structure, joint, new wound and joint. In the process of soil formation, its granulometric, mineralogical, chemical composition, physical, chemical and biological properties of the soil change legally. The appearance of the soil section and the method of digging Soil horizons. Soil horizons are soil layers formed during soil formation, which form a uniform soil profile, usually developed parallel to the surface of the earth, and are distinguished from each other by their morphological characteristics. It is formed during the formation of soil. In Russia at the beginning of the 19th century, according to Dokuchaev's nomenclature, there are mainly 3 types: A - with humus; V - passer; S - the mother rock is divided into horizons. Later, Glinka, Zakharov designated genetic layers with different letters. A - humus accumulative layer, V - transitional layer; G - gley; C - illuvial; D - mother rock. D.G. Vilensky (1927) proposed different naming of genetic layers: A- accumulative; E- eluvial; I- illuvial; G- gleyy; M- parent rock. In addition, he introduced symbols related to soil horizons. For example, Achchimli, Acho-chim sub-layer, Ic-illuvial layer shows carbonates and hakozos. Later A.N. Sokolovskyi in his book "Soil Science" introduces the designation of genetic layers with new symbols.

SUMMARY

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