AGROCHEMICAL PROPERTIES OF IRRIGATED SOILS OF KHAVOS DISTRICT.

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Abstract: The article describes the agrochemical properties of irrigated meadow soils in the Khavas district. The amount of humus in irrigated meadow soils distributed in the Khavas district was 0.47% at the plowing level of the first section, and 0.555% at the plowing level of the second section, decreasing towards the soil layers. The amount of phosphorus and potassium in the soil was also higher in the upper layers and decreased towards the target.

Keywords: irrigated gray-meadow soil, agrochemical properties, humus, nutrients, phosphorus, potassium, nitrogen, gypsum, carbonate.

Most scientific studies conducted on the properties and characteristics of the soils of the Mirzachul oasis have noted that irrigation has resulted in significant changes in the properties of the soils.

Although the soils of the Mirzachul oasis have favorable natural and climatic conditions, there are factors that negatively affect soil fertility, indicating the need for research in these areas.

The soils of the Khavos district massifs differ in their properties and characteristics, which indicates the need to work with each soil type separately.

The low humus content of natural gray soils is associated with the low productivity of plants growing on these soils and their thermal-water regimes. The total organic mass in typical gray soils is about 20 tons per hectare, of which only 1.5 tons is the above-ground part of the plants. The mass of biological products in irrigated gray soils reaches 10 tons. However, this does not lead to a sharp increase in the amount of humus in them. This is due to the strong acceleration of the mineralization process in irrigated soils, an increase in the number of microflora, and a long duration of biological activity.

The amount of humus and nitrogen in the soil depends on the degree of soil salinity. This can be seen from the following data obtained in the Mirzachul oasis (Turdimetov, 1999).

Table 1 presents the agrochemical characteristics of the soils of the research object. The amount of humus in the soil was 0.47% in the arable layer of section 1, up to 0.55% in the arable layer of section 2, decreasing towards the lower layers of the soil. The amount of total phosphorus and potassium in the soil was also higher in the upper layers and decreased downwards according to the law.

Table 1

Agrochemical characteristics of irrigated soils of Khavos district

Section	Depth, cm	Hummus %	Nitrogen, %	S:N	Gross, %	$CaSO_4 \cdot H_2O$, gypsum	CO_2

No.					P_2O_5	K_2O		carbonate, %
Grassland soils								
	0-18	0,472	0,051	5,4	0,106	1,02	7,62	5,21
	18-45	0,327	0,019	10,8	0,092	0,91	8,12	4,43
	45-68	0,194	0,016	7,6	0,066	0,65	8,31	5,25
	68-109	0,081	0,011	4,6	0,072	0,67	9,12	4,22
1	109-118	0,056	0,013	2,4	0,052	0,033	9,34	4,83
	0-22	0,554	0,042	8,6	0,251	1,83	6,02	5,05
	22-46	0,369	0,029	8,0	0.128	1,09	6,66	5,21
	46-73	0,088	0,023	2,4	0,102	0,81	7,81	4,92
	73-114	0,068	0,007	6,1	0,085	0,65	9,06	4,65
2	114-121	0,039	0,007	3,5	0,069	0,041	9,71	4,28

Among the indicators that determine the physical condition of irrigated soils in Uzbekistan, the following should be highlighted first: soil aggregation, density, and water permeability.

During irrigation, desert-oasis soils acquire a number of agrophysical properties that are unique to this soil.

During irrigation, the amount of microaggregates in soils decreases to a certain extent, the dispersion of soils increases, and the composition coefficient in irrigated soil layers decreases compared to gray soils. In contrast, the composition coefficient in relatively recently developed gray soils is close to that of protected gray soils. The degree of aggregation of soils in many cases determines their physical state.

The irrigation process leads to a certain change in the density of soils. In many cases, the density of irrigated soils distributed in the region of gray soils increases somewhat as a result of intensive tillage. If the density of the soil plow layer is maintained at a certain level as a result of successive tillage, a layer called the “plough subsoil” is formed under the plow layer. The degree of development of this layer depends on the productivity of the work being done on the soil, the depth of plowing, and the conditions under which the work is carried out.

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