

NUTRIENT CONTENTS OF IRRIGATED SANDY DESERT SOILS AND RECOMMENDATIONS TO INCREASE THEM (IN THE CASE OF ZHONDOR DISTRICT)

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This paper presents information on humus and mobile nutrient content of newly reclaimed sandy desert soils used for agriculture.

Almost 70 percent of the land area of our republic is located in the desert zone, which includes Ustyurt, Kyzylkum, Malikchol, Sherabad, Karshi deserts and other areas. Currently, the largest share (more than half) of the agricultural areas of our republic are natural pastures, and about 83% of them belong to arid regions (desert, hills). The area of pastures in our republic is 20.8 mln. hectare, of which 17.4 mln. hectare corresponds to the desert zone.

The zonal soils of the desert zone are yellow-brown soils, barren and barren soils, and sandy desert soils [1, 2, 3, 4].

The soil cover of the desert zone is extremely complex and is characterized by its complexity, complex relief, high temperature (the sum of effective temperatures is 4000-5000 °C), as well as low humus content, high carbonation, widespread salinity, and in some places it is salty and plastered.

Sandy-desert soils are little studied compared to other soils of our republic. Although it has been shown in the nature of the soils of our republic for a long time, due to the fact that they are distributed in the interior of the desert districts, together with sandy accumulations and aeolian deposits, no importance has been attached to their study, and until now no specific recommendations have been given regarding their use in agriculture.

Currently, sandy-desert soils are used in irrigated agriculture in some regions of Kashkadarya, Surkhandarya, Bukhara, Khorezm and other regions. For example, agricultural crops (cotton, grain, alfalfa and other cultivated plants) are

grown in the sandy-desert newly developed soils of Karakol, Olot, Jondor, Romitan, Peshku, Qarovulbazar districts of Bukhara region. It is urgent to study the evolution, genesis, properties and characteristics of these soils used in agriculture.

In order to study the genesis, evolution, mechanical composition, properties, and productivity of sandy desert soils of the Bukhara region, scientific research work is being conducted in 2017-2020 based on the general methods adopted in soil science.

A soil pit (razrez) was dug from 488 contours of Fayoz farm, Jondor district, Bukhara region, samples were taken from the layers, and nutrients were analyzed (Table 1).

Table 1. Amount of nutrients in the sandy steppe soils of fayaz farm of Zhondor district

Contour №	№	Layer, sm	Humus, %	100 g of soil / mg		
				P ₂ O ₅	K ₂ O	N-NO ₃
488	1	0-35	0,631	4,60	16,10	0,36
		35-52	0,564	3,30	4,13	0,46
		53-71	0,271	2,18	3,30	0,41
		71-125	0,150	1,30	4,10	0,24
		126-170	0,150	1,18	6,60	0,20

The analysis of the obtained data shows that the amount of humus in the 0-35 cm layer was 0.631%, while the amount decreased as the layer deepened, and the lowest layer was 0.150% at 126-170 cm. The data on the amount of mobile phosphorus also decreased like humus and amounted to 4.60 and 1.18 mg, respectively. The amount of exchangeable potassium was 16.10 mg in the 0-35 cm layer and decreased to 53-71 cm layer (3.30 mg), and its amount increased as the

layer deepened. It was 6.60 mg in the 126-170 cm layer. The amount of nitrogen in nitrate form was 0.36 mg in the 0-35 cm layer, and the highest amount was 0.46 mg in the 35-52 cm layer.

In conclusion, the fertility of sandy desert soils is very low, and in order to maintain and increase soil fertility, the mechanical composition of the soil, general and physical-mechanical properties, water properties, salinity type, level, the amount of cations and anions in water absorption, environmental reaction (pN) conducting such analyzes and developing ways to improve their properties, as well as requiring the development of agricultural crop fertilization systems.

It is advisable to use organic, organomineral and mineral fertilizers on the basis of cards made up in a stratified manner in lands with reduced humus and nutrients. In this, the main attention should be paid to replacing a number of nutrients that are taken out of the soil with crop yields and other mass of goods every year. Because the amount of substances removed from the soil by crops is a very large indicator.

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