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ANALYSIS OF MORPHOLOGY, AGROCHEMICAL, CHEMICAL AND PHYSICO-CHEMICAL PROPERTIES OF IRRIGATED SALINE, ARZYK-SHOH MEADOW-SAZ SOILS

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ABSTRACT

Properties of difficult reclamation medium saline manure horny soils, horny manure soils formed in Central Fergana, mostly highly ameliorative, fertility is very low, that is soils with a low to moderate humus content, gross and mobile nitrogen, phosphorus, potassium, deep loosening by means of detonation waves on soils with poor water permeability and air permeability, washing off soil salts and creating relatively favorable conditions for growth, development, increasing the yield of cotton. According to the morphological features of carbonates, calcium and magnesium are present in the middle and lower extremities of the profile of pishchevyx gipsovyx pochv, and gypsum and malorastvorimye soli - in verxnix layers.

KEYWORDS: *Difficult Ameliorative Fertile Soils, Morphology, Agrochemical, Chemical And Physicochemical Properties Irrigated Saline.*

INTRODUCTION

Determine the formation, evolution, change of irrigated soils in the world, especially saline, gypsum soils, optimization of chemical, physical and other properties, development of resource-saving technologies in their morphogenetic structure and their modification, determination and evaluation of productivity, prevention of negative processes affecting it.Research is being carried out on a number of priority areas for mitigation.In order to determine the genesis of fertile and gypsum soils, the laws of geographical distribution, maintain, restore, increase and manage their fertility on irrigated agricultural lands of the country, certain results are achieved to improve agrochemical, agrophysical properties, ameliorative soil conditions and production capacity.

Materials and research methods. The studies used methods of laying soil sections on selected massifs, as well as comparative geographic, comparative geochemical and cameral analytical methods.Soil sampling and laboratory and analytical work were carried out on the basis of methodological guidelines, such as “Methods of agrochemical, agrophysical and microbiological studies in irrigated cotton areas”, E.V. mathematical-statistical analysis of the research results was carried out by the method of B.A. Dospekhov. **[1]**

Research results and discussion. Irrigated meadow-saz soils. July 26, 2017 In the marginal and middle parts, the Big Boltakul massif of the Kushtepa district of the Margilan-Fayziabad distribution is formed, consisting of alluvial-proluvial deposits.Irrigated meadow-saz, vegetable, melon, groundwater 2 m, gravelly and carbonate, there are interlayers of gleying, gypsum interlayers from 95 cm, parent rocks from 2 m, the soil surface is rough and loose.

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

34-56 cm. Gray, slightly moist, slightly sandy, walnut, moderately dense, salts in the form of small crystals, plant roots and underground animals traces are rare, semi-decayed plant remains, the transition to subsequent layers is noticeable by exact density and mechanics;

56-95 cm Gray, wet, sandy, granular, low-density, plant roots and underground animal traces are low, half-decayed plant remains, clear transitions in density to subsequent layers;

95-120 cm. Light gray, with very moist, sandy, lamellar, highly compacted, nutrient layers close to the lower layers. **[2]**

According to the analytical indicators of the mechanical composition of soils, the number of particles of physical clay (<0.01 mm) ranges from 14,6-36,0% in the arable and subsoil layers of the soil, and in the lower horizons – 8,0-12,9%. In these soils, large dust-like particles (0,05-0,01 mm) predominate, the amount of which is observed in the soil profile in the range of 33,7-63,8%, and the amount of soil particles is 0,4-6,2%.It is substantiated that the irrigated saline Arzyk-Shokhov soils formed in Central Fergana are mainly formed on ancient alluvial-proluvial, Neogene-Quaternary deposits, and also that in the middle, namely in the 50–90 cm layer, their morphology, the existence of a mosaic Arzyk-Shokhov , with a dense cemented and poor water and air permeability layer.The structure and morphology of the nutrient soil profile is unique and different from other sloping soils. Soil Nutrient Profile Calcium and magnesium carbonates are in the middle and lower parts, while gypsum and sparingly soluble salts are in the upper layers.On shallow and deep loamy soils, a blib, consisting of a mass of fine-grained soil, can cover up to 10% of gypsum. In the upper layers of the soil, layers of gypsum are used, which make up 20-30% and later dry; water-soluble salts are observed in the sections. As a result of the strengthening of sediments in the soil, the erosion of mountain minerals that help to work with the rear waters of the ep, the intake of this heat is formed in pairs within 3 hours, if you lean on yourself, gypsum is formed.The structure and morphology of the nutrient soil profile is unique and different from other soils in the region. For the purpose of a comprehensive study and increase in fertility, 1243,3 hectares of land with severe reclamation conditions, with a very low level of fertility, namely, with low and medium supply of humus, gross and mobile forms of nitrogen, phosphorus, potassium, were selected for setting up experiments, agrochemical properties are shown in table -1. **[3]**

TABLE -1 AGROCHEMICAL PROPERTIES OF DIFFICULTLY RECLAIMED IRRIGATED MEADOW-SAZ SOILS (N-5)

№ incision	Depthcm	Humus,%	C:N	Nutrient content					
				Gross, %			Mobile, mg/kg		
				Азот	Фосфор	Калий	NO_3	P_2O_5	K_2O
1	0–32	1,060	6,9	0,091	0,24	1,471	6,20	18,0	187,1
	32–51	0,875	7,6	0,079	0,26	1,570	6,10	10,20	105,1
	51–90	0,590	8,6	0,047	0,23	1,430	5,90	10,1	85,1
	90–110	0,257	7,3	0,024	0,23	1,620	2,50	3,90	58,2

Regarding calcium and magnesium salts of these soils, the studied soils are not differentiated evenly. In particular, the maximum of total carbonates and carbonates of Ca++ and Mg++, gypsum, and salts of myrobilite falls on the 51–90 cm layer, namely, on the Arzyk-shoch layer of the soil section.The total content of carbonates in this horizon is 12,20%, and sulfates 17,8% and 10,3%. The content of water-soluble salts in the soil horizon, in November 2015varied within 1,538–1,687%. The absorption capacity is also not large, and the amounts of calcium and magnesium dominate in the soil section. Not alkaline, namely the amount of absorbed sodium is below 5% relative to the absorption capacity. **[4]**

Volumetric and specific gravity, porosity on these soils are the corresponding values (table 2).

TABLE 2 GENERAL PHYSICAL PROPERTIES OF IRRIGATED ARZYK-SHOKHOV MEADOW-SAZ SOILS

№ incision	Depthcm	Weight, g/cm3		Total porosity, %
		Volumetric	Specific	
1	0–32	1,23	2,48	50,20
	32–51	1,35	2,46	45,12
	51–90	1,45	2,43	40,33
	90–110	1,39	2,50	44,40
	110–130	1,38	2,49	44,57
	130–180	1,54	2,53	40,32

As you can see, at a depth of 51–90 cm, with a bulk density of 1,45 the specific gravity is 2,43 and the total porosity, respectively, is 40,33%.According to the data given in the literature (O.K. Komilov, V.Yu. Isakov), the porosity of these soils is low, there is a cemented layer, and for this reason the water permeability is very slow, namely, in 5 hours it was 9,48 mm / h .According to the mechanical composition, the upper plow and sub plow horizons of these soils are heavy loamy (45,4–60,11%), and the remaining horizons are medium loamy (32,4–40,2%) soils. According to the data given above, these soils belong to the group of irrigated, saline, arzyk-shoch soils and are considered difficult to reclaim. **[5]**

CONCLUSIONS

According to mathematical statistical analysis, the upper layer of irrigated meadow-saz soils is rich in gross phosphorus relative to the lower horizons, which is at least slightly associated with the anthropogenic factor in the process of forming a kind of soil, and occurs in the process of partial accumulation of phosphorus introduced into soils. There is practically no significant difference between the variants in the accumulation of mobile and gross potassium. **[6]** However,

there is a slight increase in the concentration of mobile phosphorus under the influence of CO2 gas.On soils with poor water and air permeability, under conditions of irrigated agriculture, deep loosening with the help of detonation waves, washing of soil salts create relatively favorable conditions for the growth, development, and increase in the yield of cotton. As a result of processing with the help of detonation waves, in the volumetric and specific masses, the mechanical composition of soils, slight changes occur in accordance with the variants of the experiment, from the 1st variant to the 4th variant, there is a slight decrease in the bulk density and an increase in porosity. At the same time, there are practically no changes in the specific gravity, mechanical composition, and agrochemical properties of soils. **[7]**

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