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INFLUENCE OF WIND EROSION ON THE GENERAL MORPHOGENETIC CHARACTERISTICS OF IRRIGATED SOILS OF THE MIRZACHUL OASIS

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ANNOTATION

This article presents the results of observations of various deflationary processes in irrigated lands in the territory of Mirzachul (Syrdarya and Jizzakh regions).

Keyword. Mirzachul district, wind erosion, deflation, pilot site, backstage crops, soil fertility.

INTRODUCTION

Today, "the total area of fertile land suitable for growing crops in the world is 4.4 billion hectares (excluding 4 billion protected lands), of which 1600 million hectares are cultivated."
According to official data, "from 1991 to 2009, the area of irrigated agricultural land in the world increased by 1.6 percent per year, with more than 2 percent in developing countries. According to forecasts, by 2050 the area of irrigated land will reach 318 million hectares" After our republic gained independence, special attention is paid to the preservation, restoration and improvement of soil fertility, [1]https:// fao.org
which is considered the main tool in the system of all sectors of the national economy and in the production of agricultural products.
The Decree of the President of the Republic dated June 10, 2022 No. 277 "On measures to create an effective system for combating land degradation" identified important tasks to prevent land degradation and eliminate its consequences in Uzbekistan.
In 2022-2025, forecast indicators arebeing prepared aimed at reducing and preventing land degradation processes in our country. By this decision, it is planned to increase the building areaof protected lands on agricultural land from 5.0 thousand. ha up to 10. 2 thousand hectares.
At present, all types of erosion are widespread in our country. More than 2 million. hectares of irrigated land have undergone soil deflation. The study of the state of lands subject to wind erosion, their assessment and the development of anti-deflationary measures is currently one of the topical issues in agriculture.
Mirzachul is one of the largest cotton-growing regions of Uzbekistan. Mirzach near the mountains and plains number about 1 million people. It has an area of about one hectare. There are irrigated lands of the Syrdarya and Jizzakh regions of Uzbekistan (471.2 thousand hectares), the Shymkent region of the Republic of Kazakhstan (122.4 thousand hectares) and

the lands of the Khujand district of the Republic of Tajikistan (14.2 thousand hectares) [9].

The variety of soil and climatic conditions of Mirzachrequires specific agrotechnical and reclamation measures here. It is possible to increase the productivity of deflated lands and the efficiency of their use when creating new technologies and tillage, as well as agromeliorative and agrotechnical measures, as well as cultivating crops that absorb nutrients that create a structure. In recent years, the rapid impact of non-stop activity man, irresponsible attitude to soil protection, soil erosion caused problems on a national scale.

At present, the study and assessment of lands prone to deflation, and the development of measures to combat these processes are one of the most urgent tasks of Mirzachinagricultural farming.

The degree of danger of deflation of irrigated soils of Mirzach, the influence of deflationary processes on morphological characteristics, agrophysical and agrochemical properties of irrigated soils, the influence of intermediate crops against wind erosion on soil fertility and cotton yield are studied. In particular, the description of the morphological features of various levels of erosion-hazardous lands Mirzachulya It is given on the example of the following soil sections.

The research method is based on generally accepted methods in soil science [1, 2, 3, 4, 5, 6].

The results of the study and their analysis.

Section-111 M.I.Umarov.

Cotton field on newly developed gray-meadow soil, sandy loam and sand with a moderate risk of deflation.

0–35 sm Gray, dry, light mechanical composition, weakly concentrated, with clear transitions to the next layer.

35–65 sm Gray, poorly moistened, does not have a solid structure, dense, few roots, there are carbonate spots, sandy. Transition to the next layer with clear features and mechanical composition.

65–103 s mDusty gray, moist, compacted, structureless, with small and large roots, light sand. The transition to the next layer is carried out according to the mechanical composition.

103–154 s m Gray, moist, weakly compacted, structureless, sandy.

Section-101 M.I.Umarov.

The danger of deflation is weak, gray-meadow soil. Cotton field.

0–30 s m Gray, dry, porous, lumpy - with a granular structure, there are diggers' moves, few roots, light sand. Move to the next layer with clear views.

30–52 s m Light gray, moist, not having a strong structure, weakly compacted, salt spots, small roots of plants are clearly visible, black-brown spots are found below. The transition to the next layer is gradual.

52–90 s m The color is darker compared to the upper layers, moist, compacted, without structure, there are small roots, light sand. Move to the next layer with clear views.

90–125 s mGray, with a yellowish sheen, moist, less compacted, structureless, there are traces of small roots and burrowing animals, light sand. The transition to the next layer is carried out by color and mechanical composition.

125–155 s m The color of the field is gray, highly moistened, compacted, finely porous, structureless, sandy. The transition to the next layer is carried out according to the mechanical composition.

155–195 cm There are gray, wet, sometimes roots and yellow spots.

195–215 cm Gray, highly moistened, empty, sandy groundwater is observed.

According to the morphological records of sections carried out on lands with different wind speeds, it can be concluded that the properties of soils deteriorate as the degree of erosion hazard increases. Therefore, on lands with a strong risk of deflation, the humus layer is practically not formed, so the transition between genetic layers occurs gradually. In this case, the characteristics of the strata are secondary genetic properties such as moisture, density, and seepage depth. Compared to highly deflationary lands, genetic layers are more clearly visible in low- and medium-deflationary lands: the boundary of the humus-accumulative layer is clearly visible.

Lands without the risk of deflation differ from lands with a risk of deflation in the thickness of the agro-irrigation layer and well-defined genetic layers, the thickness of the A + B layer is more than 70 cm.

CONCLUSIONS

1. To improve the morphogenetic properties of deflated soils, planting crops (sowing winter wheat and rye) is carried out in the fall, and the row spacing is pre-softened to a depth of 7-9 cm in a softening device. Wheat should be watered 2-3 times before the end of the growing season, and in the spring, to accelerate its growth, it is recommended to apply ammonium nitrate at the rate of 100 kg / ha of pure nitrogen.

2. Due to the fact that there are no measures to combat wind erosion, the soils of the deflationary-dangerous Mirzach regionhavea low level of productivity, and the amount of humus and nutrients in the arable layers is low.

3. Cover crops can be used to create protective crops (winter wheat, sorghum, maize, Sudanese grass and other fast-growing crops). At the same time, the distance between protective crops is 15-25 m, and their width should not exceed 2-2.5 m.

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