Volume 2, Issue 11, November - 2024 **ISSN (E):** 2938-379X

INFLUENCE OF DEFLATION ON THE MORPHOGENETIC PROPERTIES OF IRRIGATED SOILS (On the example of Mirzachul soils)

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Abstract
Particular attention is paid to soil, which is considered the main tool in the system of all countries for the conservation, restoration and enhancement of its productivity.
In this regard, a number of regulatory documents are adopted in our country, the main purpose of which is to protect the soil, which is the main means of production.

Introduction

The Resolution of the President of the Republic of Uzbekistan dated June 10, 2022 No 277 "On measures to create an effective system to combat land degradation" defines important tasks to prevent land degradation and eliminate its consequences in Uzbekistan.
Also, the Government Decree of February 2, 2023 approved the Regulation "On the Procedure for Monitoring, Assessing and Developing Reporting Forms and Publishing Their Results".
According to it, under the influence of the anthropogenic factor, the deterioration of the reclamation state of the soil, monitoring of the state of the degraded soil is provided.
In 2022-2025, forecast indicators are planned aimed at reducing and preventing land degradation processes in our country.

The zones of development of natural areas protected by this decision on agricultural lands are planned to increase the area from 5.0 thousand hectares 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 suffered from soil deflation. Studying the state of lands subject to wind erosion, assessing them and developing measures against deflation is one of the urgent problems of agriculture today. The degree of danger of deflation of irrigated soils in Mirzachul, the influence of deflationary processes on the 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 morphological features of various levels of erosion-hazardous lands of Mirzachul 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].

Results of the study and their analysis.

Section-35. The Zaminsky district "Chilanzar" of the ACM consists of a subtropical piedmont desert region, the Central Asian province, an area of pale gray soils, a geomorphological area of the foothill slope consisting of deluvial, alluvial-proluvial deposits (skeletal-stony).

Low risk of deflation, newly irrigated pasture soil, moderate salinity, Cistern Depression plain. Cotton field.

0–25 cm. The color is gray, moist, slightly sandy, fine-grained, moderately compacted, there are many small roots of plants, (there are many traces of caprolite and molehill), the transition to the next layer is slow due to density and mechanical composition.

25–40 cm. Color is gray, moist, medium-sandy, fine-grained, dense, root and salt spots are common. The transition to the next layer is sharp in color and mechanical composition.

40–72 cm. Light gray, moist, light sandy, granular, moderately dense, the transition to the next layer is sharp from moisture.

72–96 cm. Gray, wet, light sandy, dense seeping waters were observed.

Section-19.

Moderate risk of deflation, gray-meadow freshly irrigated soil, field of grain crops.

0–25 cm. Light gray, poorly moistened, sandy loam, moderately compacted, plant roots are small, (*traces of molehills are rare*), salt spots are found. Gradually, we move from density to the next layer.

25–45 cm. Light gray, moderately moist, sandy, compacted, few small plant roots, traces of insects, salt crystals (*nodules*) are common. Gradually, we move from density to the next layer.

45–85 cm. Light gray, moist, sandy, dense, compacted gypsum layer. The transition to the next layer is noticeable in density.

85–120 cm. Light gray, moist, sandy, moderately dense, salt crystals (*nodules*) are found.

Based on the morphological records of sections made on lands with different wind speeds, it can be concluded that soil properties deteriorate as the degree of erosion hazard increases. Therefore, on lands with a high 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 depth of seepage. In comparison with highly deflationary hazardous lands, genetic

layers are more clearly visible in low- and moderately deflationary lands: the boundary of the humus-accumulative layer is clearly visible.

Lands without the risk of deflation differ from lands with the risk of deflation in the thickness of the agroirrigation layer and well-defined genetic layers, the thickness of the A+B layer is more than 70 cm (Table 1.1.1).

Table 1.1.1 Influence of wind erosion on morphological parameters of newly irrigated pasture soils.

Number of sections and degree of erosion	Thickness of the humus layer, cm (A+B1+B2)	Upper limit of carbonates, cm		The border of gypsum horizons, cm	Colors of the arable horizon
		Pseudomycelium, in the form of white mold	Concreteness in the form of		
Section 35 Risk of deflation is low	70	40	-	No	Dark Grey
Section 19-Section The risk of deflation is moderate	56	25	25 - 45	-	grey

Conclusions and Recommendations

1. To improve the morphogenetic properties of deflated soils, winter wheat and rye are sown in autumn, after loosening the row spacing to a depth of 7-9 cm. Wheat should be watered 2-3 times before the end of the growing season, and in spring, to accelerate its growth, it is recommended to apply ammonium nitrate at the rate of 100 kg/ha of pure nitrogen.
2. Winter wheat, sorghum, corn, Sudan grass and other fast-growing crops can be used to create cover 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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