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Preliminary Studies On Soils Of The Mirzachul Oasis And Their Classification Into Degrees Of Danger To Deflation

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Annotation

This article presents the results of preliminary studies conducted in the Mirzachul region (late XIX – early XX century), reducing the impact of wind erosion on the soil, monitoring various deflationary processes on irrigated lands in the region, region. The results of field experiments suggest the sowing of industrial crops between agricultural crops to restore, increase and protect the fertility of deflated soils

Key words. Mirzachul oasis, wind erosion, agricultural crops, soil fertility, deflation, experimental site.

Introduction. (Look at history....) Late nineteenth - early twentieth century
The Central Asian region includes several deserts. One of them was Mirzachol. The administration of the Governor-General of Turkestan is primarily aimed at studying Mirzachol1. Therefore, he sent several expeditions to Mirzachol, consisting of scientists of that period.

This work began in the early 1870's (*https://uza.uz/uz/posts/mirzacholni-ozlash*).[1]

These expeditions would conduct topographical surveys of the area and map all parts of the territory. In addition, expeditions gather information about the traces of ancient rivers and canals in the area. There were a number of reasons for determining the lengths of ancient rivers. In the first place, those responsible for the development of Mirzachol aimed to bring water to the region through existing stream basins. This allowed them to reduce the cost of opening a canal.

On the basis of an in-depth analysis of the state of soil degradation in irrigated agricultural regions, in particular, in the Mirzachol basin, which is a historical habitat, under the influence of various natural and anthropogenic factors, effective use of such lands, restoration, preservation and increase of soil fertility, systematic increase in the yield of agricultural crops remains one of the main tasks of today.

We all know that wind erosion is a natural process where the wind moves soil from one place to another. This process is now causing massive economic and environmental damage in all regions.

The Strategy of Action developed on the initiative of the President of the Republic of Uzbekistan Shavkat Mirziyoyev has brought the country's agricultural sector and structural changes in it to a logical new stage [1].

In connection with the rapid development of science and technology in the world, as a result of the increasing use of natural resources for agricultural purposes, there is a deterioration of soil fertility, including soil degradation, the formation of quarries, deforestation, the use of water for the purpose of obtaining higher yields of agricultural crops, the use of shoveling, the disproportionate introduction of heavy machinery in field crops [3].

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According to the International Food and Agriculture Organization (FAO), "Today, one-third of the world's land cover is degraded to varying degrees, with 10 hectares of land degraded every minute and 23 hectares of land becoming desertified".[1]

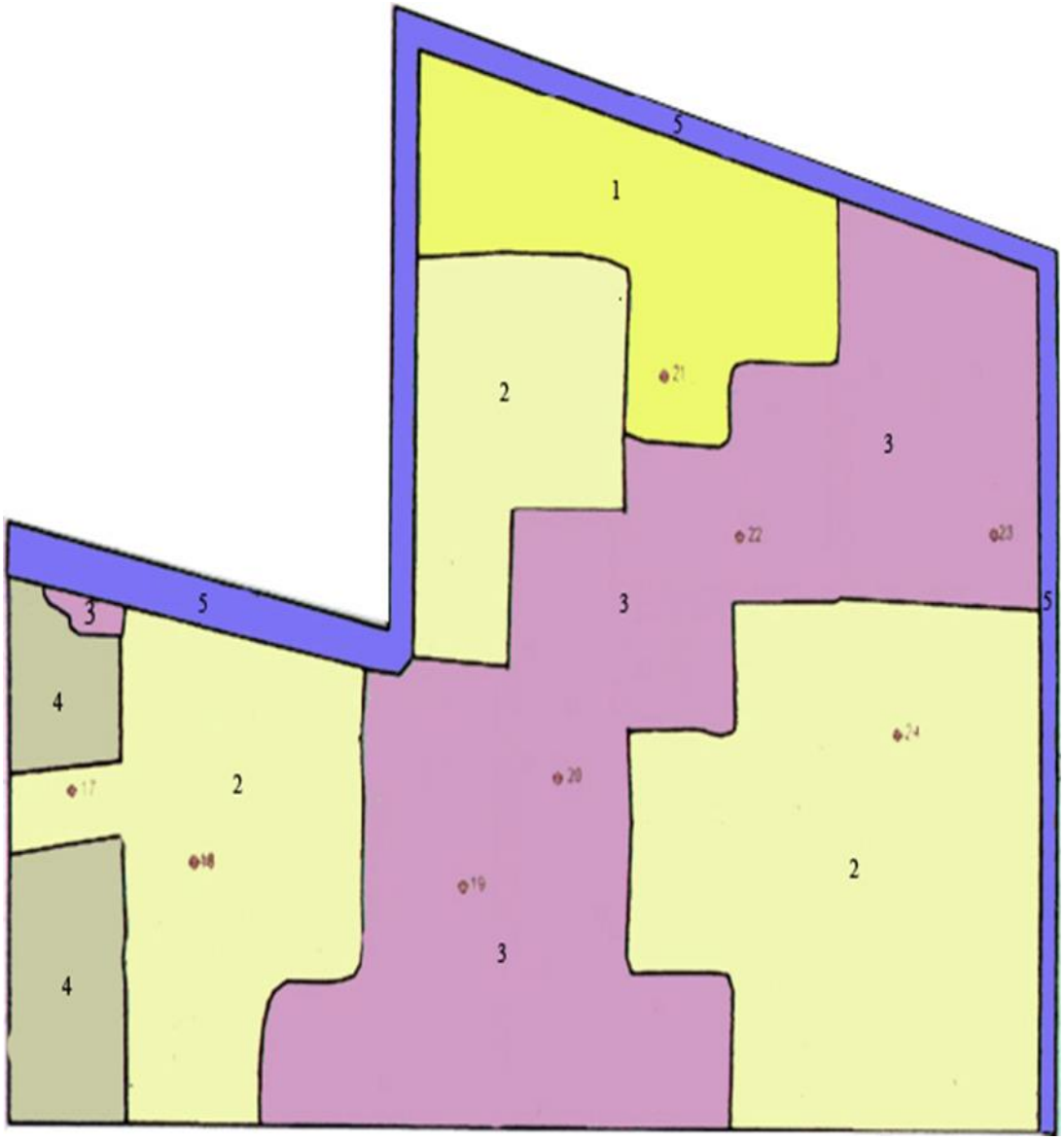
The research methodology. The studies were conducted using generally accepted methods in soil science [1, 2, 3, 4, 5, 6].

In experiments, it was planted as an agrotechnical measure to protect maize. In order to determine the effectiveness of corn planting as a deflation resistance tool, field experiments were conducted on the following 4 variants (in the case of wheat).

Based on the above, it's possible that in the context of the study, In 2003-2006, key areas were selected from the “Paxtakor” cooperative farm located in the south of Mirzachol from the districts covering the Mirzachol voivodeship.

In particular, the card-scheme of deflationary hazard of soils of “Paxtakor” cooperative (Mehnatabad district)

Scale of 1: 5 000
The year 2008



4/7 Soil separations and their boundaries
The point where the cut is located

[1] [1]https://fao.org

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4/7 Soil segments and their boundaries

Colors	Degree of deflation	Per square foot
	weak	97
	average	430
	strong	338
	uncomfortable areas	56
	water basin	88

Classification of Experimental Field Soils: Data from field experiments carried out in Mirzachal have important diagnostic significance in determining the morphological characteristics and types of soils, in describing soil properties, as well as in determining the levels of deflation hazards. Based on the studies, the Mirzachol region was divided into areas with a low, medium and high risk of deflation. Therefore, field experiments were conducted to develop measures to protect areas with a high risk of deflation from wind erosion processes. Field experiments were conducted on newly irrigated light mechanical soils.

More than 30% of the irrigated land area of the Mirzachol plain of Jizzakh region and 31.5% of the irrigated land area of the Sirdarya region are composed of light-mechanical compounds. The total irrigated land area of Mirzachol is about 530428 hectares, of which 31.2% of the land area is of light mechanical composition, V.E. I am very pleased with the results. Ismanov [95].

The results of the study and their analysis. In the study of the morphological characteristics of the soil, the effect of deflationary processes and measures against them, special attention was paid to the thickness of the sedimentary layer, the granularity and the mechanical composition of the soil of each section. Here, we're going to sample morphological records from a second sample of soil from a field experiment.

2 - The cut M.I. Umerov (born on October 25, 2004) It is a light sandy, moderately salted, broad-leaved soil that is moderately deflated and freshly irrigated. Cotton field, 600 m north of the main road.

0-30cm - Gray in colour, the layer is slightly dry on top, moist on the bottom, light sandy, fine-grained, moderately dense, scattered and rooted with salt flakes, with fine roots, in the transition colour to the next layer.

30-57 cm - It is a light gray, moderately moist, light sandy, fine-grained, very dense, spotted with roots and salty spots. Move to the next layer slowly.

57-104 cm - There are light gray, wet, light sandy, fine-grained, undensified, roots and insect traces, and decaying roots, as well as a transition to the next layer of mechanical composition.

104-129 cm - It's grey, wet, heavy sand, layered maple, very dense, roots are less common, there's a little bit of insect moisture, the color of the transition to the next layer.

129-145 cm - There are light gray and dark gray stains, where new carbonate lesions and gypsum fragments have formed, and there are wet, heavy sandy, chalky, compacted, rust stains, where the transition to the next layer is in color and mechanical composition.

Practical studies have shown that under wheat or rye, the soil holds dust very well and protects the soil from deflation. During the cotton sowing season (early April), the height of beans

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and wheat reaches 40-50 cm, and in May it reaches 90-100 cm. Sown beds protect the soil from wind erosion and increase the fertility of deflated soils. Soil protectors have been studied and implemented as a cotton-to-cotton swap, while using cotton as an anti-erosion agent.

Conclusion, suggestions and recommendations.

1. For the production of protective crops, field crops can be used, such as autumn wheat, maize, corn (60-day-old), water herbs, and other fast-growing crops. Here, the distance between the protective crops, they should be 15-25 m, and their width should not exceed 2-2.5 m.
2. Winter wheat and rye are sown in the autumn, and the rows are pre-softened at a depth of 7-9 cm in a softener. Wheat should be watered 2-3 times until the end of the growing season, and in the spring it is recommended to apply mineral fertilizers in the amount of 100 kg / ha of pure nitrogen to accelerate its growth.

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