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SOME FACTORS AFFECTING THE FERTILITY OF IRRIGATED SOILS

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Orazaliyeva Maftuna

Teacher at the Department of Agro-Soil Science and Reclamation at Gulistan State University, Uzbekistan

ABSTRACT

This article provides information on soil fertility, mechanical composition, general physical properties, and classification by erosion level. Erosion processes influence soil fertility and, in turn, soil agronomic properties.

KEYWORDS

Degradation, erosion, mass, volume, ratio, porosity, mechanical composition.

INTRODUCTION

The quality and composition of the fertility of irrigated soils around the world is changing every year, including "1.5 billion in the world. 0.4 billion hectares of arable land. hectare of high quality, 0.8 bln. hectare of good quality and 0.3 bln. hectares are unproductive lands. Soil salinity has a serious effect on the decrease of productivity. Therefore, it is important to identify degradation processes that affect soil productivity, to develop scientific solutions aimed at preventing such negative processes, to increase and protect soil productivity, and to effectively use land resources.

In the world, scientific research is being carried out aimed at finding ways to effectively use lands degraded under the influence of various negative processes, whose productivity and quality indicators have decreased, and to obtain the desired yield from agricultural crops by restoring their productivity. In this regard, special attention is being paid to researches related to the management of land resources by studying the conditions of soils with different levels of erosion, selecting and planting suitable crop types, and constantly monitoring soil fertility. Currently, the productivity level of most of the lands used in agriculture, their ecological and melioration status is

not at the required level, but it is also observed that the fertility of the soils on the lands of farmers and farms is at a high level. . When using soils of any type and type, their productivity is demonstrated in practice, and local agromelioration and agrotechnological measures developed for this climate are used. With the help of the application of such measures, it is often possible to partially achieve the goal of increasing the soil fertility. However, increasing the accumulation of organic matter in the soil is necessary to increase the relatively stable and effective productivity of the soil, which is the main goal for the radical increase of soil fertility. For this, it is necessary to introduce the system of crop rotation, which currently prevails in agricultural practice, based on the soil-climatic conditions. According to the results of many studies, soil humus has a positive effect on its main properties. Determining the fertility of irrigated soils depends on their humus, phosphorus and potassium status. Based on the observations, in the irrigated soils of the gray soil region, especially in their upper layers, the total amount of humus, and accordingly, the reduction of total nitrogen was determined. It should also be noted that the amount of humus in the arable layer of cultured soils when high agrotechnics are used in the old and newly irrigated soils of the republic is 1.18-1.32%, in some cases 1.63-1.78% and more found to be high. By applying more organic fertilizers to the soil, it gives opportunities to maintain and increase their fertility. Another reason for the decrease in the productivity of irrigated soils is the violation of the law of timely return of nutrients and other substances taken from the soil. Cotton, grain plants, fruits, vegetables, and sugarcane crops grown annually on irrigated soils in large quantities remove a certain amount of nutrients, i.e., the crop and vegetative parts. Maintaining and increasing the fertility of soils used in agricultural practice directly depends on their correct and effective use. The rational use of the soil layer, which is an

important part of the earth's resources, preserves and increases its productivity. From this point of view, in some lands, as a result of improper use of the soil, there are cases of its fertility decreasing. One of the important issues in maintaining and protecting soil fertility is the enrichment of the soil with organic matter and the correct placement of crops. According to the results of the analysis of scientific research, even in any type and type of soil, there are opportunities to increase the amount of humus in it by properly organizing the farming system. Recent studies have shown that dehumification of soils leads to a decrease in soil fertility. The reduction of organic matter in soils is accompanied by the loss of many positive agrochemical properties. The decrease of humus in the soil is an example of almost no alternating planting with alfalfa, not planting siderates, and not using organic fertilizers. In order to improve soil humus, it is necessary to apply organic fertilizer (manure) to all lands. As an additional source of such fertilizers, straw, cotton stalks, plant roots, various livestock.

The amount of nutrients in the soil (nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, boron, manganese and other microelements) depends on the composition of the soil, the rocks that form it, and the underlying bedrock, as well as the soil-forming processes. Soil reaction has a great influence on the absorption of microelements by plants. Nutrient reserves in the soil are maintained by applying mineral and organic fertilizers. An important condition for fertility is the absence of excessive amounts of water-soluble salts, mainly sodium, as well as magnesium, calcium and other cations in the soil. Excessive salt content in the soil - soil salinity is mainly caused by improper irrigation, resulting in a sharp decrease in productivity. Saline lands are washed to remove harmful salts from the soil layer (see Salt Leaching). In order to prevent salinity, the watering regime is

determined depending on the nature and composition of the soil. Irrigation in drought areas, including irrigated farming zones, significantly increases soil fertility. Low soil fertility is often due to the presence of pathogenic organisms. Their elimination by means of chemical (sterilization of insects, spraying of fungicides, etc.) and agrotechnical measures (rotation of crops, tillage) dramatically increases the effective fertility of the soil. To preserve soil fertility, the soil is cultivated in ways that do not allow erosion.

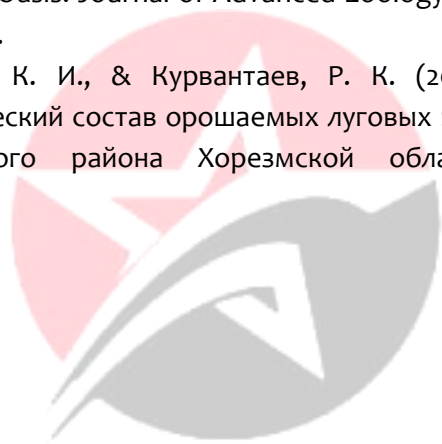
CONCLUSION

Due to the process of erosion, the mechanical composition of the soil has changed. Due to the formation of different conditions of local soil, it is not the same according to its mechanical composition. An increase in fractions from eroded soils to non-eroded soils was observed. It was observed that the general physical properties of soils in the researched area have deteriorated due to erosion processes. It affects soil fertility and, in turn, the agronomic properties of the soil. Depending on the degree of erosion and slope exposure, soil type and grain size, specific gravity varied across soil layers. A change in porosity was observed in accordance with the amount of comparison and bulk density.

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