ISSN: 2776-0960 Volume 3, Issue 1 Jan., 2022

PRODUCTIVITY OF IRRIGATED SOILS AND ITS PHYSICAL CHARACTERISTICS OF GIJDUVAN DISTRICT

Hilola Khamroevna Salimova
Senior Lecturer, Department of Soil Science,
Bukhara State University

Annotation

This article discusses the physical properties of the soil in the fertility of irrigated soils, the creation of favorable conditions for the mineralization of plants in the optimal soil fertility.

Keywords: soil density, humus, moisture, nitrogen fixation, nutrient.

Introduction

The physical properties of the soil are of great importance in the fertility of irrigated soils. At the optimal density of the soil, favorable conditions are created for the mineralization of plants. Beneficial aerobic microflora (azotbacter and its development conditions in air-exchange soils are improved, and the pathogenic effect of wilt-forming fungi and other disease-causing microorganisms is reduced.

The soil density indicator shows a certain degree of physical condition. If we take humus as the “organizer” of the whole soil system, the density of the soil determines the general physical state of the whole soil mass.

The irrigation process is usually associated with the mixing of soil densities, especially under the plowed layer, into the lower parts of the soil profile of the sludge material. In addition, the mechanical pressure of wet and many agricultural implements under the influence of irrigation leaves a strong mark. The soil appears to be hard plastered under their weight, as well as disaggregation of the soil mass during irrigation. In this regard, the density of soils is optimally slightly higher and is around 1.4-1.5 g / cm3 instead of 1.2-1.3 g-cm3.

The physical condition of soils is one of the indicators that can be controlled to a certain extent when their density, farming network, components are used correctly. The choice of tillage time for such soils and the conduct of tillage at a certain humidity play a key role. So far, it has not been scientifically proven to the end that fall plowing is preferable to spring plowing everywhere. According to

experts, the local conditions of each place should be addressed taking into account the climatic and soil characteristics.

Soil moisture is one of the most important physical indicators and is directly related to yield in lalmicor farming. In the case of irrigated agriculture, however, the humidity is at a certain level, which provides an increase in yield. Nowadays, many have to deal with excess moisture as a result of excessive watering, rather than moisture deficiency. In the conditions of general shortage of water in the republic, in many places the norms of irrigation are not observed. Excess water is applied to the cotton fields. The period between waterings is prolonged, a surprising situation occurs. On the one hand, if too much water is consumed, on the other hand, the plant feels the need. In addition, excess water makes it even poorer with humus and other nutrients. It leads to the deterioration of the general ecological situation in the country.

Biological and microbiological processes in the soil are closely related to the life activity of microorganisms in the soil. reaches

Among the factors determining soil fertility, bioecological factors play a significant role. Strong changes also occur in the nature of the microbiological activity of soils. The total amount of nitrogen fixing and other beneficial microorganisms decreased, while the amount of denitrifier, oligonitrophil, actonimicet, as well as pathogenic vilt fungi increased. Even the visible earthworms in the soil are reduced. This is a sign that the soil fauna has changed for the worse. Even in well-cultivated soils, their number is very low, probably due to the application of high levels of mineral fertilizers and pesticides.

One of the factors that negatively affects environmental conditions is soil density, as noted above. Residues of various substances, such as pesticides, herbicides, significantly worsen the environmental conditions of the soil. Not only the toxicity of these wastes, but also the violation of the technology of their application leads to the deterioration of the environment, the poisoning of many people.

Fertilizers applied to the soil are subject to its complex effects, and these fertilizers can affect the soil as follows:

1. Changes the acidity or alkalinity of the environment.
2. Improves or worsens the agrochemical and physical properties of the soil.
3. Causes the exchange of absorbed ions and their transfer to the soil solution.
4. May promote or inhibit the chemical absorption of cations (biogenic and toxic elements).

ResearchJet Journal of Analysis and Inventions
https://reserchjet.academiascience.org

5. Can provide mineralization or synthesis of humus.
6. May reduce or increase the effect of other fertilizers and nutrients on the soil.
7. May increase or decrease the mobility of nutrients.
8. Causes ontogism or synergism of nutrient elements and thereby affects their absorption and metabolism by plants.

In addition to the effects listed here, there may be exceptions. In irrigated soils, a significant portion of the high often excess mineral fertilizers are transferred to the lower part of the soil by irrigation water and accumulate there. They also pass into groundwater. As a result, they are contaminated with nitrogen, phosphorus and the elements that accompany them. This, in turn, worsens the overall environmental condition of the biocomplex.

Soil fertility is strongly related to genetic and geographical conditions, ie factors that determine soil types, the nature of the parent rock, the environment of the area where the soil is formed and the characteristics that determine the methods of agricultural use. This allows them to be widely used in agriculture. Also, their general use is possible only as a result of artificial irrigation. The role of irrigation here is so great that it radically changes soils, creating new anthropogenic landscapes.

In summary, the origin and distribution of such soils indicate that these soils are evolving under favorable bioclimatic conditions, leading to the emergence of anthropogenic soils in these areas. In addition to soil fertility, soil fertility is also related to a number of factors that are not related to soil quality. One of the most important of these factors is the agroclimatic factor. If the climatic conditions differ from the norm in one way or another, the harvest will be less in the same year. In addition, the cultivated plant varieties are related to the state of beneficial and harmful organisms in the agro-system. None of these components can be ignored. For example, no matter how fertile the soil is, no matter how good the biota is in it, if the land is not planted with a variety suitable for the soil and climatic conditions, the harvest will be almost non-existent.

Thus, the above data, the indicator obtained, and the characteristics are one of the characteristics of productivity.

ResearchJet Journal of Analysis and Inventions
https://reserchjet.academiascience.org

Literature

1. Artikova, H. T., & Salimova, H. H. (2021). Morphological Condition of Irrigated Soils of Gijduvan District of Bukhara Oasis, Salinity Levels and Increase of Their Fertility. *Annals of the Romanian Society for Cell Biology*, 3214-3223.
2. Salimova, H. (2021). BUXORO VILOYATI SUG 'ORILADIGAN TUPROQLARNING MELIORATIV-EKOLOGIK-HOLATINI YAXSHILASH VA TUPROQ UNUMDORLIGINI OSHIRISH OMILLARI. *ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz)*, *7*(7).
3. Salimova, H. (2020). English Bukhara oasis physical and chemical soil: Irrigated soils of Gijduvan District of Bukhara Region. *ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz)*, *2*(2).
4. Salimova, H. (2021). AG 'IJDUVON TUMANI "OMAD" FERMER XO 'JALIGIDA TARQALGAN SUG 'ORILADIGAN TUPROQLARNINGXOSSA-XUSUSIYATLARI: мақола. *ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz)*, *7*(7).
5. Салимова, Хилола Хамроевна. "GIJDUVON TUMAN "MIRZO O'RIN OMADI" FERMER XO'JALIGIDA TARQALGAN TUPROQLARNING TAVSIFI." *ЖУРНАЛ АГРО ПРОЦЕССИНГ* 2.3 (2020).
6. Hamroyevna, Salimova Hilola. "DESCRIPTION OF THE LANDS DISTRIBUTED ON THE FARM "MIRZO URIN OMADI" IN GIJDUVAN DISTRICT." *Агропроцессинг* 3.2 (2020).
7. Hamroyevna, S. H. (2020). CONDITION OF SOILS OF BUKHARA OASIS (ON THE EXAMPLE OF GIJDUVAN DISTRICT). *Агропроцессинг*, *3*(2).
8. Таджиев, У., Артикова, Х. Т., Нафетдинов, Ш. Ш., & Салимова, Х. Х. (2019). Определение степени смытости горных коричневых типичных почв. *Вестник науки и образования*, (20-2 (74)).
9. Салимова, Х. Х. (2016). ПОЧВЫ ПОДВЕРГШИЕСЯ ЭРОЗИИ И УВЕЛИЧЕНИЕ ИХ ПЛОДОРОДИЯ. *Ученый XXI века*, (5-1), 11.
10. Юнусов, Р., & Салимова, Х. Х. (2016). Будущее селекции хлопчатника в Бухаре. *Ученый XXI века*, (5-1), 14.
11. Салимова, Х. Х. (2020). БУХОРО ВОҲАСИ ТУПРОҚЛАРИНИНГ ҲОЛАТИ (ҒИЖДУВОН ТУМАНИ МИСОЛИДА). *ЖУРНАЛ АГРО ПРОЦЕССИНГ*, *2*(3).
12. Артикова, Х. Т., Юнусов, Р. Ю., & Салимова, Х. Х. (2015). КЛИМАТИЧЕСКИЕ УСЛОВИЯ И РАСТИТЕЛЬНОСТЬ СУБТРОПИЧЕСКОЙ ТЕПЛОЙ И ЖАРКОЙ ПУСТЫНИ. In *Проблемы рекультивации отходов быта, промышленного и сельскохозяйственного производства* (pp. 273-275).

13. Artikova, H. T., & Salimova, H. (2021). The Factors of Formation of Soil in Gijduvan District of Bukhara Oasis, Climate, Physical-Mechanical Properties of Irrigated Soils. *CENTRAL ASIAN JOURNAL OF LITERATURE, PHILOSOPHY AND CULTURE*, *2*(6), 94-99.
14. Юнусов, Р., & Салимова, Х. Х. (2016). ПРИМЕНЕНИЕ ВОДОСБЕРЕГАЮЩЕГО ПРЕПАРАТА" ГИДРОГЕЛЬ" В УСЛОВИЯХ НЕХВАТКИ ВОДЫ В БУХАРСКОМ ОАЗИСЕ. *Учёный XXI века*, (9 (22)), 17-19.
15. Egamberdiev, S. K., Salimova, H. H., Bobekov, I. N., Nafetdinov, S. S., & Sattorova, M. M. (2020). Effect OfSiderates On Soil Agrochemical Properties. *International Journal of Advanced Science and Technology*, *29*(8), 3337-3341.
16. VitalyIgorevichSavich, H., & ShavkatulloShukurovichNafetdinov, K. Optimization Of Plant Development In Case Of Soil Salinization. *The American Journal of Agriculture and Boimedical Engineering.(ISSN-2689-1018). Pages*, 24-29.
17. Artikova H. T., Sattorova M. M., Jumaev J. J. O. Prevent Salinization And Increase The Fertility Of Irrigated Sandy And Loamy Soils //The American Journal of Agriculture and Boimedical Engineering (ISSN–2689-1018) Published: March. – 2021. – Т. 11. – С. 1-6.
18. Artikova, H. T., & Salimova, H. (2021). The Factors of Formation of Soil in Gijduvan District of Bukhara Oasis, Climate, Physical-Mechanical Properties of Irrigated Soils. *CENTRAL ASIAN JOURNAL OF LITERATURE, PHILOSOPHY AND CULTURE*, *2*(6), 94-99.
19. Savich, Vitaly Igorevich, et al. "ASSESSMENT OF SOIL SALINITY USING THE VERTICAL ELECTRIC SOUNDING METHOD." (2021).
20. Artikova, Hafiza Tuymurodovna, and Hilola Hamroevna Salimova. "Morphological Condition of Irrigated Soils of Gijduvan District of Bukhara Oasis, Salinity Levels and Increase of Their Fertility." *Annals of the Romanian Society for Cell Biology* (2021): 3214-3223.
21. Артикова, Х. Т. "МОРФОЛОГИЧЕСКОЕ СТРОЕНИЕ ПОЧВ БУХАРСКОГО ОАЗИСА И ИХ РАЗЛИЧИЯ." *Путь науки* 2 (2017): 22-24.