



THE INFLUENCE OF THE DIRECTION AND ACTIVITY OF MICROBIOLOGICAL PROCESSES ON THE FORMATION OF AGROCHEMICAL PROPERTIES OF SOILS OF VOBKENT DISTRICT

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Abstract: *One of the most pressing issues today is to improve soil properties on earth. The soils of Bukhara region differ sharply from the natural soil properties. The direction and activity of microbiological processes in them play an important role in shaping the agrophysical, especially agrochemical properties of the soil. It is therefore important to study the water-physical properties of the soil and these issues will be discussed in the next article.*

Keywords: *Soil salinization, irrigated land, intensive farming, meadow soils.*

The soils of Bukhara region differ sharply from the natural soil properties. The direction and activity of microbiological processes in them play an important role in the formation of agrophysical, especially agrochemical properties of soil. However, the type and degree of salinity significantly affect the amount and activity of microorganisms. This changes the properties and fertility of saline soils at different levels, which in turn affects crop growth, development, productivity and product quality. Therefore, it is important to determine the effect of different levels of salinity on the microbiological activity of soils, to assess the effect of salts on microorganisms. Finding solutions to these problems will help to develop measures to direct the microbiological activity of saline soils in the future. However, the identification of the mechanism of influence of natural and anthropogenic factors on the microbiological activity of the plant in different saline soils allows to control these processes in order to increase soil fertility and crop yields, which is a topical issue.

Under conditions of intensive agriculture, soil fertility varies depending on space and time, which is characterized by a score relative to the most fertile soils of a species or region, which is a relative indicator of soil fertility.

Information about soil formation, its composition, some properties and characteristics, classification of soils can be found in many scientific studies.

The Soil Quality Index (SQI) is a degree of degradation that takes into account approximately 25 soil properties when assessing soil quality. This does not take into account the land use system of the region.

In Australia, a separate site on soil quality has been created, which is connected to geographic information systems, soil fertility, chemical and physical properties are entered into a database and constantly monitored, and the negative processes occur are analyzed on the basis of space images. , the necessary measures will be developed.

At present, these operations can be performed quickly and efficiently on special computers. One such program is the Bonitirovka program, which is designed for correlation coefficients, arithmetic mean, coefficient of variation, and more.



Soil microbiological activity in Uzbekistan, including Vobkent district, plays an important role in increasing its fertility. In recent years, soils have been under constant anthropogenic influences. This, in turn, leads to changes in the complex of soil microorganisms, reducing the taxonomic diversity and biological activity of microorganisms (according to many authors, the amount of free nitrogen-fixing bacteria *Azotobacter* plays an important role in assessing soil fertility. and the number of *Azotobacter* decreases in soils with low organic matter, salinity, heavy metals accumulation and compaction. Microorganisms play an important role in the immobilization of nitrogen in the soil. This also has a significant impact on soil fertility. is the sum of the processes within the soil that lead to its retention in shape.

The most important factor controlling the microbial transformation of nitrogen and carbon in grassland soils is moisture, which is determined by the state of plant cenosis in the biogeochemical catenary. For example, the highest activity of nitrogen fixation, which contributes significantly to soil nitrogen balance, has been reported for grasslands that retain sufficient moisture and occupy a transit-accumulating position. Alpine "carpets" that accumulate moisture and mineral nitrogen have the highest activity of denitrification and methane formation.

The rate of humus accumulation is much lower than when using peat or manure at a dose of 8-16 t / ha. Siderate as an organic fertilizer is mineralized during the growing season and the humus balance is negative. In the case of peat, humus reserves increased by 10.7-17.7%, in the case of manure - by 9.8-16.4%, in the case of straw - by 3.7-5.2%. The amount of mobile humus is directly related to the number and activity of microorganisms.

With increasing doses of nitrogen fertilizers, denitrification increases and emissions of nitric oxide increase. Nitrogen loss peaks in the middle of the growing season. In the variants with high doses of nitrogen fertilizers (210 kg N / ha) nitrogen fixation is significantly lower than in the control without fertilizers and in the variants with small doses of nitrogen fertilizers (90 kg N / ha). 'Idi. This pattern has been observed throughout the growing season. The highest activity of the nitrogen fixation process took place in late June, and by the end of the growing season, this activity decreased. The highest activity of the nitrogen fixation process was in the nitrogen-free variant, ie only in the phosphorus and potassium fertilizers. Subsequent exposure to nitrogen fertilizers applied over many years has increased the biodiversity and flattening of microorganisms and the stability of the microbial system.

It should also be noted that in recent years a lot of research has been conducted to assess soil fertility. The growing demand for information on agricultural lands and the use of transparent mechanisms in the assessment of soils have become a requirement of the times and are of great benefit. In view of the above, it is necessary to improve the assessment of soil quality by better organizing the study of existing methodological scientific works.

List of used literature

1. Ortiqova X.T. General physical and some water-physical properties of irrigated meadow-alluvial soils in Bukhara oasis, their importance. // Journal. National University of Uzbekistan News. №3/1. 2018. –B. 47-51.
2. Axmedov A.U. Osenka sovremennogo sostoyaniya oroshaemix gipsonosnix pochv Golodnoy stepi //Jurn. "Pochvovedenie i agroximiya". –Almati, 2009. -№2. –S. 48-58
3. Gafurova L.A. Izmenenie klimata i problemi soxraneniya i vosproizvodstva plodorodiya pochv Uzbekistana: realii, tendensiya i perspektivi// Pochvovedenie v Rossii: vizovi sovremennosti, osnovnie napravleniya razvitiya: Materiali Vserossiyskoy nauchno-prakticheskoy konferensii. -Rossiya, 2012,-S.104-109.



4. Gafurov K. G., Abdullaev S. Characteristics of the soil cover of irrigated zones of the Bukhar region. – 1982.
5. Kurilova N.I. Water-salt regime and ego regulation in the conditions of the Bukhara region // Abstract k.sel.–xoz.n. - Ashgabat, 1963. - P.5–17
6. Felitsiant I.N., Konobeeva G.M., Gorbunov B.V., Abdullaev M.A. Почвы Узбекистана (Бухарская и Навоискская области) .– Tashkent: Fan, 1984. - P.3-60
7. G’afurova L.A., Abdurahmonov, Jabborov Z.A, Saidova M.A. Soil degradation (textbook). - Tashkent, 2012. - pp. 10-218
8. G’afurova L.A. Soils, s for mirovannyenatretichnyxkrasnotsvetnyxotlojeniyax, ix ekologicheskoesostoyanieiplodorodie // Diss. ... d.b.n. - Tashkent, 1995. - P.331–351.
9. Rustam Yunusov, Makhbuba Latipovna Ikramova, Feruza Amrilloevna Ganieva, Sayyora Sadulloevna Shadiyeva. THE EFFECT OF CUTTING (PRUNING) METHODS AND LEVELS IN INTENSIVE GARDENS ON THE FORMATION OF APPLE TREES. ResearchJet Journal of Anaysis and Inventions. ISSN: 2776-0960 Volume 3, Issue 1 Jan., 2022. P. 128-137 <https://reserchjet.academiascience.org/index.php/rjai/article/view/412/379>
10. Yunusov, R., Ganieva, F. A., Artikova, M. I., & Atayeva, Z. A. (2022). THE DEPENDENCE OF THE GROWTH, DEVELOPMENT AND PRODUCTIVITY OF APPLE TREES ON THE FACTORS OF CARE ON LOW-SALINE SOILS OF THE BUKHARA REGION. *Web of Scientist: International Scientific Research Journal*, 3(02), 773-781.
11. Tukhtaev, S. H., Ganieva, F. A., & qizi Artikova, K. S. (2022). MEASURES TO CONTROL THE HARMFUL HARMFUL WHEAT TURTLE IN THE CONDITIONS OF BUKHARA REGION.
12. Tukhtaev, S. H., Ganieva, F. A., & Artikova, K. S. (2021). Application of carbophos in the control of plant spiders in Bukhara region. *Asian Journal of Multidimensional Research*, 10(10), 1282-1285.
13. Ganieva, F. (2021). Kotoran 80% SP Against Turnip Moths. *ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz)*, 6(6).
14. Ganieva, F. (2021). Influence Of Cotton Cultivation Techniques In Bukhara Region On Reduction Of Damage To Plants By Turnip Moth. *ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz)*, 6(6).
15. Ganieva, F. (2021). РОСТ И ПЛОДОНОШЕНИЕ ДЕРЕВЬЕВ ПЕРСИКА В ОРОШАЕМЫХ САДАХ В ЗАВИСИМОСТИ ОТ КОНСТРУКЦИИ КРОНЫ. *ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz)*, 6(6).
16. Ganieva, F. (2021). РОСТ И РАЗВИТИЯ ВЕГЕТАТИВНО-РАЗМНОЖАЕМЫХ ПОДВОЕВ ЯБЛОНИ В ЗАВИСИМОСТИ ОТ ПЛОТНОСТИ ПОСАДКИ. *ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz)*, 6(6).
17. Ganieva, F. (2020). ПАКАНА НОК ДАРАХТЛАРИНИНГ ЎСИШИ, РИВОЖЛАНИШИ ВА ҲОСИЛДОРЛИГИНИНГ КЎПАЙИШИГА ВЕГЕТАТИВ ПАЙВАНДТАГ ҲАМДА ИНТЕНСИВ НАВЛАРНИНГ ТАЪСИРИ. *ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz)*, 6(2).
18. Р.Юнусов, Ф.А.Ганиева, М.А.Раҳимова, Д.И.Бўриева, ЎЎТ.634.11.630 Влияние



- обрезки в интенсивных яблоневых садах на фитометрические показатели роста и плодоношения. file:///C:/Users/PC/Downloads/xorazm+ma'mun.pdf
19. Burieva Dilorom Isroilovna «Dependence of microbiological activity of irrigated meadow alluvial soils of Bukhara oasis on soil salinity levels». MIDDLE EUROPEAN SCIENTIFIC BULLETIN ISSN 2694-9970 11.04 (2021).
 20. Rahimova M. Influence of various factors on microbiological and enzymatic activity of alluvial soils of Bukhara oasis meadow //ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz). – 2021. – Т. 8. – №. 8.
 21. Rahimova, Mahliyo. "The Importance of Agricultural Mapping in Soil Science." ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz) 8.8 (2021).
 22. Shadieva, S. S., Borieva, D. I., & Rakhimova, M. A. (2022). The Importance of Agricultural Mapping in Soil Science. *EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION*, 2(3), 5-8.
 23. Yunusov R. THE EFFECT OF CUTTING (PRUNING) METHODS AND LEVELS IN INTENSIVE GARDENS ON THE FORMATION OF APPLE TREES //ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz). – 2021. – Т. 8. – №. 8.
 24. https://scholar.google.com/scholar?hl=ru&as_sdt=0%2C5&q=Dependence+of+microbiological+activity+of+irrigated+meadow+alluvial+soils+of+Bukhara+oasis+on+soil+salinity+levels&btnG
 25. Шарипов О.Б., Шадиева С.С. Study of the main properties of irrigated soils of the Bukhara oasis. Bulletin of the Khorezm Academy of Mamun. Bulletin of Khorezm Mamun Academy: scientific journal. - №9 (80), Khorezm Mamun Academy, 2021 й. – 344 б. – Electronic version of the print edition
 26. <http://mamun.uz/uz/page56> ISSN 2091-573 X2021-9
 27. Sayyora Sadulloyevna Shadieva, Dilorom Isroilovna Borieva, Mahliyo Akramovna Rakhimova. The Importance of Agricultural Mapping in Soil Science.
 28. European Journal of Innovation in Nonformal Education (EJINE)
 29. Volume 2 | Issue 3 | ISSN: 2795-8612. Hosting by Innovatus Publishing Co. All rights reserved. © 2022
 30. <http://innovatus.es/index.php/ejine/article/view/459/406>
 31. Hafiza Toymurodovna Artikova, Mahfuza Muhiddinova Sattorova, Javokhir Jahon Oglu Jumaev. Prevent Salinization and Increase the Fertility Of Irrigated Sandy And Loamy Soils <https://doi.org/10.37547/tajabe/Volume03Issue03-01>.