BUXORO DAVLAT TEXNIKA UNIVERSITETI (BUXORO TABIIY RESURSLARNI BOSHQARISH INSTITUTI) (O‘ZBEKISTON),

BIRLASHGAN MILLATLAR TASHKILOTINING “QISHLOQ XO‘JALIGI VA OZIQ OVQAT” TASHKILOTI (FAO),

GUMBOLT NOMIDAGI BERLIN UNIVERSITETI (GERMANIYA),

PRESOV UNIVERSITETI (SLOVAKIYA),

VALENSIYA POLITEXNIKA UNIVERSITETI (ISPANIYA),

ZALF AGROTEXNOLOGIYALAR ILMIY TADQIQOT MARKAZI (GERMANIYA),

INTI XALQARO UNIVERSITETI (MALAYZIYA),

HERRIOT WATT UNIVERSITETI (MALAYZIYA)

“YASHIL ENERGETIKA VA UNING QISHLOQ VA SUV XO’JALIGIDAGI O’RNI” MAVZUSIDAGI XALQARO ILMIY VA ILMIY-TEXNIKAVIY ANJUMANI

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Elektron pochta manzili: buxtimi@mail.ru

Table 5

The effect of irrigation method on cotton yield.

Variants	Cotton yield by returns, c/ha			Average yield, c/ha	Additional yield, compared to control ± c/ga	Water consumption for 1 c of cotton harvest, m^3/s
	I	II	III			
1	35,5	35,8	36,0	35,8	0,0	133,5
2	44.8	45.0	44.9	44.9	+ 9.1	73,6

The effect of drip irrigation on the weight of cotton per bale is shown in the table, which shows that in fact, when drip irrigation is used, the weight of cotton per bale increases and its quality improves.

Conclusion: Based on the analysis of the scientific research conducted to study the efficient drip irrigation method for cotton cultivation in the Bukhara region, the following conclusions can be drawn:In the experimental field where cotton was cultivated, at the beginning of the vegetation period, the soil water permeability over 6 hours was 960 m^3/ha or 0.27 mm/min. By the end of the vegetation period, in the drip-irrigated 2nd variant, the soil water permeability over 6 hours decreased to 736 m^3/ha or 0.21 mm/min. Compared to the control variant, soil water permeability in the drip-irrigated variant was 88 m^3/ha or 0.06 mm/min higher over 6 hours.At the beginning of the vegetation period, the bulk density of the soil in the 0-30 cm plow layer was 1.24 g/cm^3, and in the 0-100 cm layer, it was 1.34 g/cm^3. By the end of the vegetation period, in the drip-irrigated 2nd variant, the bulk density of the soil in the 0-30 cm plow layer increased to 1.26 g/cm^3, and in the 0-100 cm layer, it increased to 1.35 g/cm^3, showing an increase of 0.02-0.03 g/cm^3.

Since traditional practices such as furrow dragging, furrow breaking, inter-row cultivation, hoeing, and other agro-technical measures were not carried out in the drip-irrigated variant, economic efficiency was achieved.

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IMPACT OF IRRIGATION OF REPEATED CROPS TREATED WITH BIOPRODUCTS WITH LOW-MINERALIZED ROOT WATER ON YIELD

O U Murodov

Bukhara State Technical University E-mail: murodovou@gmail.com

Abstract.*This article presents data on the effect of Nanosilicon, Aminosid universal si, and biopreparations on the yield of sunflower crops grown in the Bukhara oasis on alluvial, moderately saline, medium-sandy soils with a groundwater level of 2.0-2.5 meters and a mineralization of 2.5-3.0 g/l.*

Keywords: *Nanosilicon, Aminocid universal, biological preparation, repeated crops, tarix, sunflower, seasonal irrigation rate, productivity.*

Introduction. In the practice of irrigation agriculture in the world (such as the USA, China, India, Israel and Egypt), in the conditions of water scarcity, the use of low-mineralized well water as an additional source of water for irrigating crops makes it possible to save river water and increase the yield of crops by 10-15%. For this reason, scientific research aimed at the use of low-mineralized ditch waters in irrigated agriculture in order to mitigate its negative consequences in the conditions of increasing water scarcity in our Republic is considered urgent.

As a result of many years of research, scientists have found out that the collector water has a harmful effect on the soil and plants when harvesting agricultural crops, and many scientists have also proven that positive results can be achieved. The effectiveness of using mineralized well water is strongly influenced by such factors as the biological characteristics of the crop and its resistance to salt effects, water-physical properties of the soil and the level of wellness, water mineralization and salt content.

In particular, N.F. Bespalov [1] shows that in years of water shortage, collector-drainage waters can be widely used for cotton irrigation and salting. He recommends that the permissible level of mineralization of water be 3-4 g/l in dry matter on light and medium loamy soils, up to 0.5 g/l in chlorine ions, and 2.0-2.5 and 0.5 g/l on heavy loamy and saline soils, respectively.

Review of the literature on the research topic (analysis). Scientific research on irrigation of repeated crops with rainwater. Field experiments were conducted on the varieties of sunflower "Saratovskoe-853" and sunflower "Dilbar" in 2020-2022 in the conditions of soils with a mechanical composition of medium loamy, meadow-alluvial, moderately saline, with a groundwater level of 2.0-2.5 meters deep and a mineralization of 2.5-3.0 g/l at the "Agrofayz Ziynati" farm in the Vobkent district of the Bukhara region.

Our scientific research work was based on field, laboratory studies and phenological observations. Experiments were conducted based on the methods of the Scientific Research Institute of Cotton Breeding and Agrotechnologies of Seed Production "Methods of Conducting Field Experiments" (UzPITI 2007).

Results and Discussion. During scientific research, initially in 2020-2022, when cultivating the Saratovskoe-853 variety in a repeated way, the soil moisture before irrigation was 70–75−65% relative to the NDMS, the mineral fertilizer rate was N150; P100; K60 kg/ha (based on the recommendations of the Bukhara Grain Research Institute), and all variants were irrigated at a rate of 858 m^3/ha as a pre-sowing irrigation on the field area to be initially cultivated. In variant 1, which was irrigated with Zavur water, the number of irrigations was 2 times, with 969-783 m^3/ha of water being used for each irrigation, and the seasonal irrigation rate was 1752 m^3/ha.

In variant 2, which was irrigated with sewage water and irrigated using the Nanosilicon biopreparation, the field was irrigated twice, and the irrigation rate was 826-625 m^3/ha, and the seasonal irrigation rate was 1451 m^3/ha. In variant 3, i.e., the field was irrigated with sewage water and irrigated using the AMINOSID Universal Si biopreparation, the irrigation rate was 845-641 m^3/ha, and the seasonal irrigation rate was 1486 m^3/ha. In the variants where biopreparations were used, 301-266 m^3/ha less water was consumed than in the control variant.

During the experiments conducted on the cultivation of the sunflower variety "Dilbar" in the experimental field, it was determined that the pre-irrigation soil moisture content was 70–70–65% relative to the NDMS, the mineral fertilizer rate was N200; P140; K100 kg/ha, and the number of irrigations in the 4th control option was 2 times, and the seasonal water consumption was 1755 m^3/ha. In the 5th variant of the experiments, which used the nanosilicon biopreparation, the seasonal water consumption was equal to 1464 m^3/ha, and compared to the control variant 4, 291 m3/ha less water was consumed. In the 6th option treated with the last AMINOSID Universal Si biopreparation of the experiment, the seasonal water consumption was equal to 1511 m^3/ha, and 244 m^3/ha less water was consumed compared to the control 4th option. This, in turn, created favorable conditions for the economy of water resources used for irrigation and the normal growth and development of plants.

Conclusions. In the conditions of alluvial, moderately saline, moderately humus soils of the Bukhara region, the repeated application of the "Saratovskoe - 853" variety at the rate of N150,

P105, K75 kg / ha and maintaining the soil moisture before irrigation at 70-75-65% relative to the CHDNS, and the variants using Nanosilicon and AMINOSID Universal Si biopreparations, compared to the control, ensured a reduction in the amount of chlorine in the soil by 0.004% in the 0-30 cm layer and up to 0.003% in the 0-100 cm layer, a decrease in the amount of dry residue in the 0-30 cm, 0.385, 0.358% in the 0-100 cm layers, and a grain yield of 29.0-30.7 c/ha, which was 3.2-4.9 c/ha higher than the control. was determined. In the cultivation of sunflower as a repeated crop, at the rate of N200, P140, K100 kg/ha and maintaining the soil moisture before irrigation at 70-70-65% relative to the CHDNS, in variant 5, which used the Nanosilicon biopreparation, the amount of chlorine ions in the soil composition was reduced by 0.018% in the 0-30 cm layer and 0.016% in the 0-100 cm layer, respectively, compared to the control. In this variant, the amount of dry residue was 0.71%; 0.72% less than in the control variant, and was equal to 0.392; 0.351%. In variant 6, when the AMINOSID Universal Si biopreparation was used during irrigation with sewage water, the amount of chlorine ions in the soil was reduced by 0.002% in the 0-30 cm layer and 0.003% in the 0-100 cm layer compared to the control. The amount of dry residue in the soil decreased by 0.055-0.046% compared to the control, and was 0.408% in the arable layer and 0.377% in the 0-100 cm layer. This is explained by the accumulation of salts dissolved in water in the active soil layer as a result of irrigation with sewage water. The grain yield was increased by 2.0-3.9 c/ha compared to the control.

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TUPROQLARNING SHO‘RLANISHI VA UNI BARTARAF ETISHNING INOVATSION CHORA-TADBIRLARI

Atamurodov B.N.
“TIQXMMI” Milliy tadqiqot universitetining
Buxoro tabiiy resurslarni boshqarish institut assistenti.
Rustamova K.B.
“TIQXMMI” Milliy tadqiqot universitetining
Buxoro tabiiy resurslarni boshqarish instituti assistenti.

Annotatsiya. *Ushbu maqolada tuproqlarning sho‘rlanish darajalari, sabablari va tuproqlar sho‘rlanishining ortishiga ta’sir ko‘rsatuvchi omillar hamda tuproqlarning sho‘rlanishini oldini olishga qaratilgan chora-tadbirlar keltirilgan.*

Kalit so‘zlar: *sho‘rlanish, sho‘rlanish darajalari, ona jins, sho‘r yuvish, sho‘r yuvish, fiziologik quruqlik.*

Abstract. *This article presents the levels of soil salinity, causes and factors affecting the increase in soil salinity, as well as measures aimed at preventing soil salinity.*

Key words: *salinity, levels of salinity, parent rock, saline leaching, saline leaching, physiological dryness.*

Kirish: Tuproq tugaydigan va tiklanadigan resurslarga kiradi. Tuzilishiga ko‘ra tuproqda 3 asosiy qatlam ajratiladi: A-eng ustki gumus (chirindi)li qatlam; B-yuqori qatlamdan mineral va organik birikmalar to‘planadigan qatlam. C-tuproq vujudga keladigan ona jins qatlami. Tuproqning har bir gorizonti organik va mineral birikmalar aralashmasidan iborat. Tuproq tarixiy tarkib topgan