



## LAZER QURILMASI YORDAMIDA TEKISLANGAN YERLARDA G'O'ZANING O'SIB RIVOJLANISHI VA HOSILDORLIGIGA TA'SIRI

A.K.Juraev  
M R Kudratov

Buxoro tabiiy resurslarni boshqarish instituti dotsenti  
Buxoro tabiiy resurslarni boshqarish instituti assistenti  
<https://doi.org/10.5281/zenodo.8419925>

### ARTICLE INFO

Qabul qilindi: 01-October 2023 yil  
Ma'qullandi: 04- October 2023 yil  
Nashr qilindi: 09- October 2023 yil

### KEY WORDS

lezerli yer tekislagich, g'o'za,  
g'o'zaning o'sib-rivojlanishi,  
hosildorlik..

### ABSTRACT

*Maqolada lezerli yer tekislagich bilan tekislangan yerlarda go'zani o'sib-rivojlanishi va hosildorligi bo'yicha olib borilgan tadqiqotlar natijalari keltirilgan bo'lib, lazerli yer tekislagich bilan tekislangan maydonda tuproqning sug'orish oldi namligi ChDNS ga nisbatan 70-80-65 % bo'lganda, g'o'zaning bo'yi 85,6 sm., hosil shoxlari 10,7 dona, ko'sak soni 11,2 dona va 1-sentyabrda ochilgan ko'saklar soni 7,3 donani tashkil qilib, nazorat variantiga nisbatan hosil shoxlari 0,5 donaga, ko'saklarining soni 0,8 donaga va 1-sentyabrda ochilgan ko'saklar soni 1,1 donaga ko'p bo'lganligi kuzatilgan bo'lsa bir sentner paxta yetishtirish uchun 58,8 m<sup>3</sup>/s suv resurslari sarflanib, 37,8 s/ga paxta hosili olishga erishilganligi haqida ilmiy natijalar keltirilgan.*

O'zbekiston Respublikasida suvni tejaydigan texnologiyalarni joriy qilishdagi mavjud kamchilik va muammolarni bartaraf etish, mintaqada kuzatilayotgan suv tanqisligining salbiy ta'sirini yumshatish, shuningdek, qishloq xo'jaligi ekinlarini yetishtirishda suv resurslaridan yanada samarali foydalanish maqsadida 2022 yilda 230 ming gektar, shu jumladan 160 ming gektar paxta xom ashyosi yetishtiriladigan maydonlarda tomchilatib sug'orish, 28 ming gektar, shu jumladan 25 ming gektar boshqoqli don yetishtiriladigan maydonlarda yomg'irli sug'orish, 2 ming gektar qishloq xo'jaligi ekin maydonlarida diskretli sug'orish tizimlari joriy qilinish, shuningdek, 218 ming gektar ekin maydonlarining lazerli uskuna yordamida tekislanishini tashkil etish rejlashirilgan.

Shuningdek, O'zbekiston Respublikasi Prezidentining 2020-yil 10-iyuldagi PF-6024-son "O'zbekiston Respublikasi suv xo'jaligini rivojlantirishning 2020-2030 yillarga mo'ljallangan kontseptsiyasini tasdiqlash to'g'risida"gi farmoni tasdiqlangan.

Ushbu kontseptsiyaga asosan so'nggi yillarda yer va suv resurslaridan samarali foydalanish, suv resurslarini boshqarish tizimini takomillashtirish, suv xo'jaligi obyektlarini modernizatsiya qilish va rivojlantirish bo'yicha izchil islohotlar amalga oshirilmoqda.

**Tadqiqotning obyekti:** Buxoro viloyati Vobkent tumanida joylashgan – Yangikent

Oltin Zamini fermer xo'jaligi yerlari hamda g'o'zaning "Buxoro-102" navi.

**Tadqiqot natijalari:** Tadqiqotlar davomida g'o'zaning o'sib rivojlanishiga lazerli yer tekislagich bilan tekislanmagan maydoni sug'orishda nazorat 1-variantda meyoridan ortiq sug'orish ishlari olib borilganligi sababli g'o'zaning bo'yi 95,1 sm, hosil shoxlari 10,8 dona, ko'saklarining soni 10,2 dona va 1-sentyabrda ochilgan ko'saklar soni 6,2 donani, o'sishi va rivojlanishi nisbatan jadal bo'ldi.

Tajribaning lazerli yer tekislagich bilan tekislangan maydonda tuproqning sug'orish oldi namligi ChDNS ga nisbatan 70-80-65 % bo'lganda, g'o'zaning bo'yi 85,6 sm., hosil shoxlari 10,7 dona, ko'sak soni 11,2 dona va 1-sentyabrda ochilgan ko'saklar soni 7,3 donani tashkil qilib, nazorat variantiga nisbatan hosil shoxlari 0,5 donaga, ko'saklarining soni 0,8 donaga va 1-sentyabrda ochilgan ko'saklar soni 1,1 donaga ko'p bo'lganligi kuzatildi.



**1-rasm** lazerli yer tekislagich bilan tekislangan maydonda g'o'zaning o'sib-rivojlanishi bo'yicha fenologik tuzatuvlar olib boorish jarayoni

Kuzatuvlar davomida 1 sentner paxta hosili yetishtirish uchun eng ko'p miqdorda sarflangan suv resurslari tadqiqotlarning 1- variantida, ya'ni 150,8 m<sup>3</sup>/s ga teng bo'di. Ushbu variantda paxta hosildorligi 27,1 s/ga teng bo'ldi. Tajribalarning ikkinchi variantida, ya'ni lazerli bilan tekislangan variantda tuproqning sug'orish oldi namligi ChDNS ga nisbatan 70-75-65 % bo'lganda, bir sentner paxta yetishtirish uchun 58,8 m<sup>3</sup>/s suv resurslari sarflanib, 2-variantimizda 37,8 s/ga paxta hosili olishga erishildi. Bu esa o'z navbatida nazorat variantiga nisbatan 10,7 s/ga ko'p hosil olishga erishildi. Hosil ko'rsatgichlari Vobkent tumani "Yangikent Oltin Zamini" fermer xo'jaligi katta trassa asfalt yo'l bo'yidagi konturda amalga oshirildi.

### 1-jadval

Lazerli yer tekislangan maydoning g'o'za hosildorligiga ta'siri.

№	Sug'orish usuli	Qaytariqlar bo'yicha paxta hosili, s/ga			O'rtacha hosil s/ga	Qo'shimcha hosil nazoratga nisbatan ± s/ga	1 s paxta hosiliga ketgan suv sarfi
		I	II	III			
1	Ishlab chiqarish nazorati	29,5	30,4	28,9	29,5	-0,0	192,8 m <sup>3</sup>
2	Lazerli yer tekislangan maydon	42,9	42,5	43,1	42,7	+12,6	60,5 m <sup>3</sup>

Tadqiqot natijalari, sug'orishning ilmiy asoslangan tizimida amalga oshirilishi «Buxoro-102» g'oz'a navlari parvarishida eng yuqori hosilni ta'minlanishi mavsumda odatdagi beriladigan suv miqdorini iqtisod qilish imkoniyatini yaratdi.

Buxoro viloyatining hududi turli ob-havo, tuproq-sharoiti bilan ajralib turadi, shuni inobatga olib turli tuproq iqlim sharoitlarda tadqiqotlar o'tkazildi, jumladan Vabkent tumani Yangikent QFY hududidagi "Yangikent Oltin Zamini" fermer xo'jaligi dalalarida ham sinovdan o'tkazildi. Paxta hosildorligi ma'lumki, tuproq ball boniteti, strukturasi, o'tmishdosh ekin turi, suv ta'minoti va olib boriladigan agrotexnika tadbirlar majmui turi va sifatiga bevosita bog'liq. Shu sababli "Yangikent Oltin Zamini" fermer xo'jaligida tejamkor sug'orish usuli yuqori samara berdi va hosildorlik gektaridan 20.7 sentrerga oshishi kuzatildi.

Suv taqchilligining salbiy oqibatlarini kamaytirish maqsadida suv tejoychi usullar va texnologiyalarni qo'llash muhim ahamiyat kasb etadi. Hududimizda asosiy maydonlarda g'oz'a an'anaviy usulda ya'ni egat orqali bostirib sug'orilada. Ananaviy usulda sug'orishda suvning bir qismi o'qariqlarda bug'lanishi va tuproqning pastki qismlariga shimilib ketishi natijasida suv behuda sarflanmoqda. Suvning bug'lanishi va shimilishi tufayli gektariga 2.0-2.5 ming/m<sup>3</sup> suv bekorga sarf bo'lishi tadqiqotlarda aniqlangan. Bundan tashqari g'oz'a qator orasiga ishlov berishni muddatidan kechikishi ham suvdan foydalanish samaradorligini pasaytiradi. Shu bilan birga qator orasiga ishlov berilgan g'ozaning ildiz tizimi ma'lum darajada shikastlanishi evaziga o'simlikning o'sish va rivojlanishiga salbiy ta'sir ko'rsatadi. Yuqorida bayyon etilgan salbiy holatlarning oldini olish maqsadida g'oz'a va boshqa qator orasiga ishlov beriladigan ekinlarni sug'orishning zamonaviy agrotexnik usullarini ishlab chiqish hamda intensiv usulni fermer va dehqon xo'jaliklari amaliyotiga keng tadbiiq etish dolzarb masalalardan hisoblanadi. Maydonlarni lazerli yer tekislash texnologiyasi sug'orish suviga bo'lgan talabni va barcha xarajatlarni kamaytiruvchi va tuproq unumdorligini oshirish imkonini beruvchi haqiqiy texnologik va texnik yechimdir.

Vobkent tumani "Yangikent Oltin Zamini" fermer xo'jaligi dalalarida o'tkazilgan tadqiqot natijalari ko'rsatishicha, lazerli yer tekislash texnologiyasi orqali sug'orish suvining sarfi 42.8 % tashkil etdi, usuldan foydalanib sug'orishlar amalga oshirilgan holatda qo'shimcha paxta hosili 13.1 s/ga teng bo'ldi.

Resurstejamkor sug'orish texnologiyasida uzun egatlarda tuproqning bir tekis namlanishi, sug'orishdan keyin tuproq namligining bug'lanishining kamayishi, plynka ostiga quyosh nuri tushmasligi tufayli begona o'tlarning nobud bo'lishi, qator orasiga kultivator bilan ishlov berilmasligi sababli tuproqning zichlanmasligi hamda kam me'yordagi sug'orish natijasida tuproqning unumdor qatlamining sifatli namlanishi hisobiga ildiz tizimi jadal rivojlanishi uchun qulay sharoit yaratilishi va hosildorlikni oshishi aniqlandi.

**Xulosa:** Lezerli yer tekislagich bilan tekislangan yerlarda go'zani o'sib-rivojlanishi va hosildorligi bo'yicha olib borilgan tadqiqotlarda lazerli yer tekislagich bilan tekislangan maydonda tuproqning sug'orish oldi namligi ChDNS ga nisbatan 70-80-65 % bo'lganda, g'ozaning bo'yi 85,6 sm., hosil shoxlari 10,7 dona, ko'sak soni 11,2 dona va 1-sentyabrda ochilgan ko'saklar soni 7,3 donani tashkil qilib, nazorat variantiga nisbatan hosil shoxlari 0,5 donaga, ko'saklarining soni 0,8 donaga va 1-sentyabrda ochilgan ko'saklar soni 1,1 donaga ko'p bo'lganligi kuzatilgan bo'lsa bir sentner paxta yetishtirish uchun 58,8 m<sup>3</sup>/s suv resurslari sarflanib, 37,8 s/ga paxta hosili olishga erishildi. Bu esa o'z navbatida nazorat variantiga nisbatan 10,7 s/ga ko'p hosil olishga erishildi.

**FOYDALANILGAN ADABIYOTLAR:**

1. Khamidov, M., Juraev, A., Juraev, U., Atamurodov, B., Rustamova, K., Najmiddinov, A., & Nurbekov, A. (2022, July). Effects of deep softener and chemical compounds on mechanical compositions in heavy, difficult-to-ameliorate soils. In IOP Conference Series: Earth and Environmental Science (Vol. 1068, No. 1, p. 012017). IOP Publishing.
2. Atamurodov, B. N., Sobirov, K. S., & Najmiddinov, M. M. (2022). Rational Use of Water in Agricultural Regions. *Miasto Przyszłości*, 25, 88-89.
3. Rustamova, K. B., Najmiddinov, M. M., & Sobirov, K. S. (2022). Economical Use of Water Resources and Fertilizers in Irrigation of Crops. *Miasto Przyszłości*, 25, 84-87.
4. Jurayev, A. Q., Ro'Ziyeva, Q. U., & Najmiddinov, M. M. (2022). CHO 'L YAYLOVLARDA LAZERLI TEKISLASH ORQALI CHORVA OZUQABOB EKINLARDAN YUQORI VA SIFATLI HOSIL OLISH. *Oriental renaissance: Innovative, educational, natural and social sciences*, 2(6), 513-519.
5. Atamurodov, B. N., Najmiddinov, M. M., & Sobirov, K. S. (2022). INTENSIV BOG'LAR TASHKIL QILISH-YAXSHI DAROMAD OLISH GAROVI. *Oriental renaissance: Innovative, educational, natural and social sciences*, 2(7), 205-211.
6. Rustamova, K. B., Najmiddinov, M. M., & Sobirov, K. S. (2022). INTENSIV BOG'LARNI SUG'ORISHDA TEJOVCHI USULLAR. *Oriental renaissance: Innovative, educational, natural and social sciences*, 2(7), 294-300.
7. Atamurodov, B. N., & Najmiddinov, M. M. (2022). The Effectiveness of Farming in Greenhouses Drip Irrigation Method. *Journal of Intellectual Property and Human Rights*, 1(1), 14-18.
8. Jurayev, A. K., Jurayev, U. A., Atamurodov, B. N., Sobirov, K. S., & Najmiddinov, M. M. (2022). IRRIGATION OF COTTON BY WATER-SAVING.
9. Jurayev, A. K., Jurayev, U. A., Atamurodov, B. N., Sobirov, K. S., & Najmiddinov, M. M. (2022). WATERING THEIR CROPS WITH WATER OF DIFFERENT QUALITY. *Oriental renaissance: Innovative, educational, natural and social sciences*, 2(6), 1251-1257.
10. Jurayev, A. K., Jurayev, U. A., Atamurodov, B. N., Sobirov, K. S., & Najmiddinov, M. M. (2022). The effectiveness of intensive cultivation of potatoes in conditions of saline soils. *Web of Scientist: International Scientific Research Journal*, 3(6), 1853-1859.
11. Atamurodov, B. N., Sobirov, K. S., & Najmiddinov, M. M. (2022). Development of Irrigation Procedures by the Method of Hydroponics. *American Journal of Social and Humanitarian Research*, 3(7), 40-44.
12. Jurayev, U. A., Atamurodov, B. N., Sobirov, K. S., & Najmiddinov, M. M. (2022). Technology of Irrigation of Agricultural Crops with Water of Different Quality. *American Journal of Social and Humanitarian Research*, 3(7), 45-49.
13. Jurayev, A. K., Jurayev, U. A., Atamurodov, B. N., Sobirov, K. S., & Najmiddinov, M. M. (2022). SCIENTIFIC AND PRACTICAL IMPORTANCE OF EFFICIENT USE OF WATER IN IRRIGATED LAND.
14. Jurayev, A. K., Jurayev, U. A., Atamurodov, B. N., Sobirov, K. S., & Najmiddinov, M. M. (2022). SOYBEANS ARE TRANSPLANTED INTO SALINE AND SALINE SOILS TO JUSTIFY THE EFFECTIVENESS OF DRIP IRRIGATION.
15. Atamurodov, B. N., Sobirov, K. S., & Najmiddinov, M. M. (2022). USE OF RESOURCE-EFFICIENT IRRIGATION TECHNOLOGY IN THE REPUBLIC OF UZBEKISTAN. *Science and*

innovation, 1(D2), 96-100.

16. Jurayev, A. K., Jurayev, U. A., Atamurodov, B. N., Sobirov, K. S., & Najmiddinov, M. M. (2022). GROWING TOMATOES HYDROPONICALLY IN GREENHOUSES. *Science and innovation*, 1(D2), 87-90.
17. Jurayev, A. K., Jurayev, U. A., Atamurodov, B. N., Najmiddinov, M. M., & Sobirov, K. S. (2022). Effective Use of Water in Irrigated Areas. *Oriental renaissance: Innovative, educational, natural and social sciences*, 2(6), 810-815.
18. Atamurodov, B. N., Sobirov, K. S., & Najmiddinov, M. M. (2022). BASICS OF FARMING ON SALINE AND SALINE-PRONE SOILS. *Oriental renaissance: Innovative, educational, natural and social sciences*, 2(6), 725-730.
19. Xamidova, S. M., Juraev, U. A., & Atamurodov, B. N. (2022). Evaluation of the effectiveness of phytomeliorative measures in the treatment of reclamation of saline soils. *Web of Scientist: International Scientific Research Journal*, 3(6), 835-841.
20. Jurayev, A. Q., Jurayev, U. A., Atamurodov, B. N., & Najmiddinov, M. M. (2021). Cultivation of Corn as a Repeated Crop. *European Journal of Life Safety and Stability (2660-9630)*, 10, 49-51.
21. Rustamova, K. B., Sobirov, K. S., & Najmiddinov, M. M. (2022). Agriculture feed chapter the basics of crop irrigation. *Academicia Globe: Inderscience Research*, 3(6), 1-6.
22. Rustamova, K. B., Sobirov, K. S., & Najmiddinov, M. M. (2022). Cultivation of Fast-Growing Crops on Strong and Moderately Saline Soils. *Miasto Przyszłości*, 25, 94-97.
23. Rustamova, K. B., Najmiddinov, M. M., & Sobirov, K. S. (2022). Economical Use of Water Resources and Fertilizers in Irrigation of Crops. *Miasto Przyszłości*, 25, 84-87.
24. Rustamova, K. B., Najmiddinov, M. M., & Sobirov, K. S. (2022). The Effectiveness of Intensive Cultivation of Root Fruit Crops in Conditions of Saline Soils. *Miasto Przyszłości*, 25, 80-83.
25. Rustamova, K. B., Sobirov, K. S., & Najmiddinov, M. M. (2022). Norms of Irrigation and Fertilization of Grain Crops with Spike. *Miasto Przyszłości*, 25, 77-79.
26. Rustamova, K. B., Sobirov, K. S., & Najmiddinov, M. M. (2022). Basics of farming on strongly saline soils. *Web of Scientist: International Scientific Research Journal*, 3(6), 1902-1907.
27. Rustamova, K. B., Sobirov, K. S., & Najmiddinov, M. M. (2022). Economical use of water resources in irrigation in the republic of uzbekistan. *Web of Scientist: International Scientific Research Journal*, 3(6), 1860-1865.
28. Jurayev, A. K., Rustamova, K. B., Sobirov, K. S., & Najmiddinov, M. M. (2022). WATERING THE COTTON BY DRIP IRRIGATION METHOD. *Spectrum Journal of Innovation, Reforms and Development*, 4, 605-610.
29. Rustamova, K. B., Sobirov, K. S., & Najmiddinov, M. M. (2022). G 'O 'ZANI TOMCHILATIB SUG 'ORISHDA SUG 'ORISH ME'YORI VA SUG 'ORISH MUDDATLARI. *Oriental renaissance: Innovative, educational, natural and social sciences*, 2(7), 301-307.
30. Rustamova, K. B., Najmiddinov, M. M., & Sobirov, K. S. (2022). INTENSIV BOG'LARNI SUG'ORISHDA TEJOVCHI USULLAR. *Oriental renaissance: Innovative, educational, natural and social sciences*, 2(7), 294-300.
31. Khamidova, S. M., Juraev, U. A., Juraev, A. K., & Khamidov, M. K. (2023, February). Evaluating the effect of phytoameliorative measures on the land reclamation status. In IOP

Conference Series: Earth and Environmental Science (Vol. 1138, No. 1, p. 012022). IOP Publishing.

32. Xamidova, S. M., Juraev, U. A., & Sadullayev, A. N. (2022). THE EFFECT OF PHYTOMELIORANT CROPS ON THE ACCUMULATION OF SALT IN THE SOIL, NORMS FOR WASHING SOIL BRINE. Spectrum Journal of Innovation, Reforms and Development, 5, 78-82.

33. Juraev, U. A., & Nafiddinovich, S. A. (2022, July). APPLICATION OF RESOURCE-EFFICIENT IRRIGATION TECHNOLOGIES IN BUKHARA OASIS. In INTERNATIONAL CONFERENCE: PROBLEMS AND SCIENTIFIC SOLUTIONS. (Vol. 1, No. 2, pp. 176-185).

34. Xamidova, S. M., Juraev, U. A., & Sadullaev, A. N. (2022). The effectiveness of phytomeliorative measures in conditions of saline soils. Academicia Globe: Inderscience Research, 3(7), 1-5.

35. Khamidov, M. K., Balla, D., Hamidov, A. M., & Juraev, U. A. (2020). Using collector-drainage water in saline and arid irrigation areas for adaptation to climate change. In IOP Conference Series: Earth and Environmental Science (Vol. 422, No. 1, p. 012121). IOP Publishing.

