ISSN 2181-3187

THE EFFECT OF DIFFERENT DEGREES OF SALINITY ON THE ROOT SYSTEM OF COTTON.

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Abstract: Soil salinity has a negative effect on the regime of humus and mobile nutrients in the soil. As the level of salinity increases, the amount of humus and mobile nutrients in the soil decreases. When conducting research on the effect of soils with varying degrees of salinity on the root system of the Bukhara-8 cotton variety in field conditions, it was found that the most positive indicator is observed in non-saline soils.

Key words: Bukhara-8, apical meristem, rhizoderm, endoderm.

RESEARCH MATERIALS AND METHODOLOGY.

For a plant, the root system is important for its growth, development, productivity, and the formation of crop elements. In the development of the root system, the level of salinity of the soil, soil fertility, amelioration condition, physical and mechanical composition play a very important role. The development of the root system of the cotton plant in non-saline and moderately and strongly saline soils, the budding and flowering phases of the cotton plant and the root system at the end of the vegetation period were determined, i.e., The main root length, the number and length of lateral roots were determined and the root system was analyzed. The structure and function of the root system serve to maintain the normal physiological processes in plants.

The most active primary structure of the root includes: root sheath, apical meristem, rhizoderm, primary bark, endoderm, pericycle and conducting tissues.
Due to the continuous division and elongation of the cells in the meristem part of the root, a root hair is formed, which increases the absorption surface of the root. Each actively absorbing rhizome penetrates into the soil capillaries and participates in the course of physiological processes in the root.

In 2022, the effects of different degrees of salinity on the root system of cotton, that is, on the growth, formation and development processes of the main and lateral roots, were conducted under field conditions. (Table 1)

According to the obtained scientific results, the most positive result in the period of 2-4 leaves of cotton in the control variant is the main root length of 10 cm, the length and number of lateral roots, respectively: 3.0 cm; It consisted of 5 pieces (table 1)
In the same period, the length of the main root of cotton growing in moderately saline soil was 7 cm, the number of side roots of cotton was 2 pieces and the length was 1.7

ISSN 2181-3187

cm. The length of the main root of cotton growing in highly saline soils was 4 cm, and the length of the lateral roots was 1 piece and 0.8 cm in length (Table 1).

The conducted studies showed that the length and number of the main and side roots in the control variant during the ginning period of cotton were: 21 cm; 12.0 cm and made 13 pieces. The length of the main root of cotton grown in moderately saline soils was 16 cm, the number of side roots of cotton was 8 pieces and the length was 8.4 cm. In cotton growing on highly saline soils, these indicators are lower than the control, proportionally: 10 cm; 4 pieces; It was found to be 3.4 cm. These indicators differed sharply during the ripening period from the results of research conducted in non-saline, strongly saline and moderately saline soils (Table 1).

According to the conducted experiments, during the ripening period of cotton, the length of the main root in the control variant is 38.2 cm, the length and number of side roots are: 14.9 cm, respectively; It consisted of 16 pieces. In cotton growing in moderately saline soils, these indicators are lower than the control, proportionally: 34.5 cm; 14 pieces; It was found to be 12.8 cm. The length of the main root of cotton grown in highly saline soils was 23.0 cm, the number of side roots of cotton was 9 pieces and the length was 8.8 cm (Table 1).

Table 1

The effect of soils with different levels of salinity on the development and formation of the cotton root system (2022)

№ №	Options	Root system of Bukhara-8 cotton variety in one plant								
		The age of vindictiveness			Period of worship			Ripening period		
		Main root length, cm	Lateral roots		Main root length, cm	Lateral roots		Main root length, cm	Lateral roots	
			Number, unit	Length, cm		Number, unit	Length, cm		Number, unit	Length, cm
1	Control	10	5	3,0	21	13	12,0	38,2	16	14,9
2	Medium salted	7	2	1,7	16	8	8,4	34,5	14	12,8
3	Strongly salted	4	1	0,8	10	4	3,4	23,0	9	8,8

ISSN 2181-3187

We can also see with the size of the cotton root system that the development of the plant root system depends on the amount of nutrients and microorganisms in the soil, and that these parameters are negatively affected by the average salinity level. Highly saline soils have a very negative effect on plant growth. This also had an effect on the development of the root system.

CONCLUSIONS

Thus, it can be seen from the research results of the studied 3 different soil variants that the processes of growth and development (formation of root hairs in the rhizoderm) in hypocotyls are at different speeds depending on the salinity level of the soil in field conditions. Among the options tested, the most optimal option for the formation and development of the root system is the control, i.e. low salinity soil, in which the number of active roots absorbing nutrients and the length of the main root and the seed are greater than the highly saline option. It was shown that the formation of root parts was accelerated

LIST OF REFERENCES.

1. Tuyg'unovna, S. S. (2023). DORIVORNA'MATAKNINGFOYDALIXUSUSIYATLARIVATIBBIYOTDA QO'LLANILISHI. *TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI*, *3*(9), 11-13.
2. Shukurova, S. (2023). DORIVOR ACHCHIQ BODOM URUG'INING SHIFOBAXSHLIGI, DORI TAYYORLASH USULLARI. *Центральноазиатскийжурналобразованияиинноваций*, *2*(10 Part 3), 116-120.
3. Tuyg'unovna, S. S. (2023). USEFUL PROPERTIES OF THE MEDICINAL PRODUCT AND USE IN MEDICINE. *GospodarkaiInnowacje.*, *40*, 179-181.
4. Shukurova, S. (2023). DORIVOR O'SIMLIKLARNING KIMYOVIY TARKIBI VA TASNIFI. *Центральноазиатскийжурналобразованияиинноваций*, *2*(11), 5-10.
5. Tuyg'unovna, S. S. (2023). CHEMICAL COMPOSITION OF MEDICINAL PLANTS AND CLASSIFICATION. *EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE*, *3*(11), 33-35.
6. Shukurova, S. (2023). KIYIKO'T VA YALPIZDAN FOYDALANISH USULLARI. *Центральноазиатскийжурналобразованияиинноваций*, *2*(12), 171-177.
7. Shukurova, S. (2024). TARKIBIDA GLIKOZIDLAR BO'LGAN DORIVOR O'SIMLIKLAR. *Центральноазиатскийжурналобразованияиинноваций*, *3*(1), 217-222.
8. Tuygunovna, S. S. (2023). Ways to Use Mint and Peppermint. *EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY*, *3*(12), 20-23.

9. Tuygunovna, S. S. (2023). Medicinal Plants Containing Glycosides. *EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY*, *3*(12), 24-27.
10. Mukhriddin, T. (2023). XENOBIOTICS AND THEIR TYPES. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 3(10), 14-17.
11. Mukhriddin, T. (2023). A LARGE-SCALE ANALYSIS OF RARE PLANTS DISTRIBUTED IN THE NUROTA RESIDUE MOUNTAINS. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 3(12), 111-1
12. Muxriddin, T. (2023). KSENOBIOTIKLAR VA ULARNING TURLARI. TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI, 3(11), 220-223.
13. Mukhriddin, T. (2023). DEMOGRAPHIC INDICATORS OF XENOPOPULATIONS AND XENOPOPULATION. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 3(11), 69-71.
14. Тешаев, М. (2023). ЦЕНОПОПУЛЯЦИЯЛАРНИНГ ДЕМОГРАФИК КЎРСАТКИЧЛАРИ ВА ЦЕНОПОПУЛЯЦИЯ. TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI, 3(9), 134-140.
15. *Rahimova, G. (2024). G'O'ZA HOSIL ELEMENTLARINING SHAKLLANISHI. Центральноазиатский журнал образования и инноваций, 3(1), 212-216.*
16. *Yomgirovna, R. G. (2023). SCIENTIFIC ASPECTS AND EFFICACY OF BENTONITE USE IN AGRICULTURE. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 3(11), 116-120.*
17. *Rahimova, G. (2023). SHO'RLANGAN TUPROQLAR SHAROITIDA G'O'ZANING MORFOLOGIK BELGILARI VA RIVOJLANISHIGA BENTONITNING TA'SIRI. B CENTRAL ASIAN JOURNAL OF EDUCATION AND INNOVATION (T. 2, Выпуск 12, сс. 141–145). Zenodo.*
18. *Yomgirovna, R. G. (2023). FORMATION OF COTTON CROP ELEMENTS. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 3(12), 113-115.*
19. *Yomgirovna, R. G. (2023). EFFECT OF SEED ENCAPSULATION ON COTTON YIELD. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 3(12), 42-44.*
20. *Rahimova, G. (2023). MAKTABLARDA BIOLOGIYA FANINI O'QITISHDA ZAMONAVIY INTERFAOL METODLARDAN FOYDALANISH. B CENTRAL ASIAN JOURNAL OF EDUCATION AND INNOVATION (T. 2, Выпуск 10, сс. 103–109). Zenodo.*
21. *Yomgirovna, R. G. (2023). AGROBIOLOGICAL PROPERTIES OF BENTONITE IN AGRICULTURE. TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI, 3(9), 126-130.*

22. *Yomgirovna, R. G. (2023). AGROBIOLOGICAL PROPERTIES OF BENTONITE IN AGRICULTURE. Gospodarka i Innowacje., 40, 179-183.*
23. *Rahimova, G. (2023). QISHLOQ XO'JALIGIDA BENTONITDAN FOYDALANISHNING ILMIY JIHATLARI VA SAMARADORLIGI. B CENTRAL ASIAN JOURNAL OF EDUCATION AND INNOVATION (T. 2, Выпуск 11, сс. 189–196). Zenodo.*
24. Ostonova, G. (2023). ICHKI SEKRETSIYA BEZLARI FIZIOLOGIYASI. *Центральноазиатскийжурналобразованияиинноваций*, *2*(10 Part 3), 110-115.
25. Rashidovna, O. G. (2023). PHYSIOLOGY OF THE ENDOCRINE GLANDS. *EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE*, *3*(11),
26. Ostonova, G. (2023). TURLI XIL STRESS OMILLARDAN GARMSEL OMILINING G ‘O ‘ZA BARG SATHIGA TA’SIRI. *Центральноазиатский журнал образования и инноваций*, *2*(11 Part 2), 107-111.
27. Rashidovna, O. G. (2023). EFFECT OF SOILS WITH DIFFERENT LEVELS OF SALINITY ON COTTON GERMINATION IN FIELD CONDITIONS. *EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE*, *3*(12), 116-119.
28. Rashidovna, O. G. (2023). THE EFFECT OF THE HARMSEL FACTOR ON THE LEVEL OF COTTON LEAVES FROM VARIOUS STRESSORS. *EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE*, *3*(12), 105-107.
29. Ostonova, G. (2023). DALA SHAROITIDA TURLI DARAJADA SHO ‘RLANGAN TUPROQLARNING G ‘O ‘ZA UNUVCHANLIGIGA TA’SIRI. *Центральноазиатскийжурналобразованияиинноваций*, *2*(12), 206-211.
30. Ostonova, G. (2024). TURLI DARAJADA SHO ‘RLANGAN TUPROQLARNING G ‘O ‘ZANING O’SISH VA RIVOJLANISH DINAMIKASIGA TA’SIRI. *Центральноазиатскийжурналобразованияиинноваций*, *3*(1 Part 2), 73-80.
31. Akbar, A. (2023). DORI MODDALARINING KVANT KIMYOVIY HISOBLASHLARI VA ELEKTRONLARINING TABIATI. *TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI*, *3*(11), 100-104.
32. Azamatogli, A. A. (2023). PIRATSETAM MONOSULAFAT TUZILISHINI VA ELEKTRONLARINI KVANT KIMYOVIY USULDA ORGANISH. *TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI*, *3*(12), 286-288.

33. Azamato‘g‘li, A. A. (2023). KANAKUNJUT O ‘SIMLIGINING DORIVOR XUSUSIYATLARI. *TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI*, *3*(5), 200-202.
34. Azamatogli, A. A. (2023). The Effect of Using Interactive Methods in Teaching Chemistry to School Students on Educational Efficiency. *CentralAsianJournalofMedicalandNaturalScience*, *4*(5), 771-774.
35. Azamato‘g‘li, A. A. (2023). QUANTUM CHEMICAL CALCULATIONS AND ELECTRON NATURE OF DRUG SUBSTANCES. *EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE*, *3*(11), 64-68.
36. Azamatogli, A. A., &Shahribonu, B. (2023). BOIKIMYO FANIDA CHEM OFFICE DASTURLARIDAN FOYDALANISH. *TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI*, *3*(3), 272-274.
37. Azamato‘g‘li, A. A. (2023). ROLLI O ‘YINLARNI KIMYO FANI MASHG ‘ULOTLARINING SIFATIGA TA’SIRI. *TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI*, *3*(9), 131-133.
38. Azamatogli, A. A. (2023). VANADIY (IV) IONI BILAN HOSIL QILINGAN MODDALARNING XOSSALARINI ORGANISH. *TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI*, *3*(10), 305-308.
39. Azamatogli, A. A. (2023). STUDYING THE STRUCTURE AND ELECTRONS OF PIRACETAM MONOSULFATE BY QUANTUM CHEMICAL METHOD. *EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE*, *3*(12), 108-110.
40. Rashitova, S. (2023). BENTONIT GIL KUKUNINI SORBSION XOSSASINI KIMYOVIY USULDA FAOLASHTIRISH. *Центральноазиатский журнал образования и инноваций*, *2*(10 Part 3), 98-102.
41. Tokhirovna, E. G. (2024). RISK FACTORS FOR DEVELOPING TYPE 2 DIABETES MELLITUS. *ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ*, *36*(5), 64-69.
42. Shukhrat, R. S. (2023). PROCUREMENT OF SORBENTS WITH HIGH SORPTION PROPERTIES AND WASTEWATER TREATMENT ON THEIR BASIS. *EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE*, *3*(12), 75-76.
43. Boltayeva,S. (2023).PREPARATION OF EMULSIONS FROM OIL EXTRACTS AND EVALUATION OF QUALITY INDICATORS.B CENTRAL ASIAN JOURNAL OF EDUCATION AND INNOVATION (T.2 Выпуск 10, cc. 93-97).
44. BoltayevaShahribonu Ahmad qizi. MEDICINAL PROPERTIES OF CLOVE PLANT ANDMEDICINE PREPARATION METHODS. (2023) LaboratoriumWiedzyArturBorcuch (182-185)

45. BoltayevaShahribonu Ahmad qizi. Tirnoqgulo'simligiiningdorivorlikxususiyatlarivadoritayyorlashusullari.Analytical Journal of Education and Development. (14-17)
46. Boltayeva, S. (2023). PREPARATION OF EMULSIONS FROM OIL EXTRACTS AND EVALUATION OF QUALITY INDICATORS. Центральноазиатскийжурналобразованияиинноваций, 2(10 Part 3), 93-97.
47. Boltayeva, S. (2023). GIDROLIZLANGAN POLIAKRILONITRILNING EPIXLORGIDRIN BILAN O'ZARO TA'SIRI JARAYONINI O'RGANISH, OLINGAN BIRIKMALARNING TUZILISHINI ANIQLASH. Центральноазиатскийжурналобразования и инноваций, 2(11), 71-76.
48. Boltayeva, S. (2023). O'ZARO BOG'LANGAN POLIMERLAR ASOSIDA YANGI GIDROGELLAR SINTEZI, VA NATIJALARINI O'RGANISH. Центральноазиатскийжурналобразования и инноваций, 2(12), 146-151.
49. Boltayeva, S. (2024). KIMYO FANINI O 'QITISHDA INNOVATSION TA'LIM TEXNOLOGIYALARDAN FOYDALANISHNING AFZALLIKLARI. Центральноазиатский журнал образования и инноваций, 3(1 Part 2), 69-72.
50. Azamatogli, A. A., &Shahribonu, B. (2023). BOIKIMYO FANIDA CHEM OFFICE DASTURLARIDAN FOYDALANISH. TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI, 3(3), 272-274.
51. Sh, B. (2023). PREPARATION OF EMULSIONS FROM OIL EXTRACTS AND EVALUATION OF QUALITY INDICATORS. TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI, 3(6), 215-218.
52. Bakhshullayevich, T. B., &Shaxina, S. (2022). Classification of Enzymes. *EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY*, *2*(5), 37-39.
53. Toxirov, B. B., Tagaeva, M. B., &Shukurova, S. (2023). Obtaining stabilized enzymes and their application in the food industry. Science and Education, 4(4), 529–537. Retrieved from https://openscience.uz/index.php/sciedu/article/view/5560
54. *Yomgirovna, R. G. (2023). EFFECT OF SEED ENCAPSULATION ON COTTON YIELD. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 3(12), 42-44.*
55. *Yomgirovna, R. G. (2023). FORMATION OF COTTON CROP ELEMENTS. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 3(12), 113-115.*
56. Atoyeva, R. O., Xanjanova, M. P., Sharipova, S. M., Ostonova, G., &G'apurova, U. O. (2023). TURLI XIL STRESS OMILLARIDAN SHO 'RLANISHNI G 'O 'ZANING UNUVCHANLIGIGA TA'SIRINI LABARATORIYA SHAROITIDA O 'RGANISH. *EducationalResearchinUniversalSciences*, *2*(4), 298-301.

ISSN 2181-3187

57. Qobilovna, A. M. (2022). BOSHLANG ‘ICH SINF O ‘QITUVCHILARIDA KOMMUNIKATIV KOMPITENTLIK SHAKLLANISHINING IJTIMOIY-PSIXOLOGIK DETERMINANTLARI. Central Asian Research Journal for Interdisciplinary Studies (CARJIS), (Special Issue 1), 102-105.
58. Qobilovna, A. M. (2023). PROGRAM FOR THE DEVELOPMENT OF FACTORS OF COMMUNICATIVE COMPETENCE OF PRIMARY SCHOOL TEACHERS. International Journal of Pedagogics, 3(11), 131-137.
59. Эргашева, Г. Т. (2024). ФАКТОРЫ РИСКА РАЗВИТИЯ САХАРНОГО ДИАБЕТА 2 ТИПА. *ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ*, *36*(5), 70-74.