MODERN MEDICINE AND PRACTICE
https://inovatus.es/index.php/ejmmp
EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE
Vol. 3 No. 12 (Dec - 2023) EJMMP ISSN: 2795-921X

EFFECT OF SOILS WITH DIFFERENT LEVELS OF SALINITY ON COTTON GERMINATION IN FIELD CONDITIONS

Ostonova Gulnoza Rashidovna
Teacher of Asian International University

Abstract: In this article, the influence of soils with different levels of salinity on cotton fertility was determined in laboratory conditions. In the field experiment, irrigated meadow alluvial soils were selected. As a result, among the variants, the most positive results were observed in the first variant with low salinity soil, and the seed germination after one week of sowing was 80% in the first variant with low salinity control, and 70% in the second variant with medium salinity soil. the third option returned a result of 48% in highly saline soil.

Key words: Bukhara-8 cotton variety, grass, M.K. Firsova's method, fertility.

RESEARCH MATERIALS AND METHODOLOGY.

In the field experiment, irrigated grassland alluvial soils were selected, and soil sections were taken to determine the land reclamation status based on generally accepted methods in soil science before planting crops.

The analysis of soil analyzes shows that the total alkalinity in the 0-30 cm layer of the soil in the plowed layer in the low salinity variant was determined to be 0.007%. These indicators were 0.020% for chlorine content and 0.045% for sulfate content, while these indicators were 0.015% for cations (calcium, magnesium); 0.008%, and the combined share of potassium and sodium was 0.004%. The total alkalinity is 0.05 in the 30-50 cm layer of the soil section taken from the subsoil layer; it was determined that it was a percentage.

Analysis of soils with an average level of salinity shows that the total alkalinity in the 0-30 cm layer of soil layers is 0.015%, chlorine content is 0.141%, and sulfate content is 0.275%. In cations (calcium, magnesium) 0.146; 0.029%, and the combined share of potassium and sodium was 0.006%. The total alkalinity in the 30-50 cm layer of the soil cross-section taken from the subsoil layer was 0.014%.

When highly saline soils were analyzed, the following results were obtained; the total alkalinity was 0.025% in the plowed, i.e., 0-30 cm layer of the soil. The amount of chlorine in the soil was 0.164%, and the amount of sulfate was 0.599%. In cations (calcium, magnesium) 0.221; It was 0.046%. It was found that the total alkalinity in the 30-50 cm layer of the soil cross-section was 0.021%.

The amount of dry residue in the tillage and sub-tillage layers was determined in the 3 studied variants of the soil composition. According to him, according to the average data given in the soil as of April 1, in the control (low salinity) option, the amount of dry residue in the tillage layer (0-30 cm) is 0.099%, in the sub-tillage layer (30 -50 cm) was 0.098%. In moderately saline soils, the amount of dry residue in the driving

layer (0-30 cm) was 0.620%, in the sub-driving layer (30-50 cm) was 0.612%, in highly saline soils, in the driving layer (0- 30 cm) the amount of dry residue was 1.121%, in the subsoil layer (30-50 cm) it was 1.165%.

Fertilization of seeds is one of the most important characteristics that determine their suitability for planting. Fertilization of seeds has a great influence on the thickness of seedlings of the crop, horizontal development of plants and other characteristics.

Seed germination. In cotton, the period of harvesting a single seedling is the most important. Cotton seeds require 23-28% more water than their weight for germination. At this time, they will not need oxygen. Endosperm develops due to anaerobic respiration. Anaerobic respiration accelerates when the seed is planted deep (4-5 cm). As a result, it causes the seed to die. The seed germinates at 10-12 °C, the alternative temperature is 20 °C. It takes 7-15 days from seed germination to sowing. It depends on air temperature, soil moisture, soil salinity and fertility. During the growing season, 3-4 leaves are formed.

During the weeding period, the root complex develops strongly, air passages appear from the roots, and the plant is supplied with oxygen.

Due to favorable conditions in the laboratory, the germination of seeds is always higher than in the field. However, seed germination tests provide a good enough indication of seed quality and fertility. Fertilization of seeds is determined in a thermostat or in a separate clean room that maintains the required temperature.

Seeds whose roots are developing normally, and the length of the main root is equal to the length of the seed, are considered to be fertile. Non-germinating seeds produce only shoots, and the rhizome does not develop until the end of the test. If, even if it develops, the seed will be useless and rotten, even if it has a root, it will be considered a seed that will not germinate. Rotten seeds are considered special if they germinate. Fertilization and germination of seeds are calculated as the average number obtained from four parallel samples.

In order to determine the germination of seeds in soils with different levels of salinity, research was carried out in a clean room, maintaining the same temperature. M.K. Firsova's method is used for quick harvesting of seeds.

RESEARCH RESULTS

In order to carry out *the r*esearch, 50 seeds were planted in 9 cuvettes in each section of the option. So, the research was conducted in 3 variants and 3 repetitions. Sterilized soil of the same mass (100 g) was placed on moistened filter paper in each cuvette. Low salinity control, medium salinity, and strong salinity soils were placed in the first option. 50 seeds of the Bukhara-8 cotton variety were planted in each option, moistened with the same volume of water, filter paper was placed on it, and kept at 26^0 C for 7 days and nights, observation and analysis works were carried out.

In laboratory conditions in soils with different degrees of salinity Determination of seed germination of the Bukhara-8 variety.

№	Options	Seed in cuvette, grain	Tracking dates, days					Sleeplessness	
			03.05	05.05	07.05	08.05	09 .05	% as a percentage	Difference compared to control
			The average of the number of sprouts from flour by repetitions, pcs						
1	Control	50	-	3	9	28	41	80	
2	Medium salted	50	-	0	3	17	35	70	-10
3	Strongly salted	50	-	0	1	11	24	48	-32

An increase in the amount of harmful salts in the soil causes a decrease in the reactions of division, elongation and growth in the seed cells, and the seed stops bulging and forming a tumor. Based on this, it can be said that as the salinity level of the soil increases, the growth processes of the soil, i.e. the fertility, decrease.

On the 4th day of the study, out of 50 seeds planted in cuvettes, the first option was the non-saline control, the second option was moderately saline, and the third option was strongly saline, respectively: 9;3;1; it was observed that the seeds bulged out of the grain.

The swelling process in seeds depends on the increase in the amount of growth hormones and the activation of enzymatic processes.

When the results of the study were analyzed after one week, 41 out of 50 seeds germinated in the low salinity control option, 35 in the second option medium salinity soil, and 24 in the third option high salinity soil. it was found out. Among the options, the most positive results were observed in the first option in low salinity soil, the seed germination one week after planting was 80% in the first option in low salinity control, in the second option 70% in medium salinity soil, and in the third option 48% was returned in highly saline soil.

The conducted experiment showed that when we scientifically interpreted the results of the research carried out in laboratory conditions, when we studied the effect of different degrees of salinity on the Bukhara-8 variety, it was found that the Bukhara-8 cotton variety was also resistant to salinity.

Summary

Seed germination in laboratory conditions differs from seed germination in field conditions. This should be taken into account when planting seeds in field conditions. High and low temperatures in the field,

weeds, pests, lack of moisture, planting seeds too deep or shallow, and soil compaction also reduce seed germination. Field fertility can vary from 20% to 80% of laboratory fertility, depending on environmental and agrotechnical factors.

However, if the growth energy, laboratory fertility, and growth strength of the seeds are high, the field fertility of the seeds will be high. Field fertility is high in large seeds. If there is not enough moisture in the soil, if planting is done too early or late, the field fertility of seeds will decrease. Field fertility also decreases when seeds are mechanically injured. To eliminate these defects, it is necessary to treat the seeds. (eliminates infection)

BOOKS

1. Rashidovna, O. G. (2023). PHYSIOLOGY OF THE ENDOCRINE GLANDS. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 3(11), 1-2. 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.
2. 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.
3. Ostonova, G. (2023). ICHKI SEKRETSIYA BEZLARI FIZIOLOGIYASI. Центральноазиатский журнал образования и инноваций, 2(10 Part 3), 110-115.
4. Ataullayeva, M. (2023). COMMUNICATIVE COMPETENCE AS A FACTOR OF PERSONAL AND PROFESSIONAL DEVELOPMENT OF A FUTURE SPECIALIST. International Bulletin of Medical Sciences and Clinical Research, 3(10), 109-114.
5. Narzulaeva Umida Rakhmatulloevna, Samieva Gulnoza Utkurovna, & Ismatova Marguba Shaukatovna (2020). SPECIFICITY OF THE CLINICAL COURSE OF THE INITIAL STAGES OF HYPERTENSION IN ARID ZONES OF UZBEKISTAN AND NON-DRUG APPROACHES TO TREATMENT. Кронос, (4 (43)), 15-17.
6. Axmedova, M. (2023). THE IMPACT OF SOCIOCULTURAL
7. PERVASIVENESS OF DENTAL CARIES AS A COMPLEX HEALTH CONDITION IN CONTEMPORARY SOCIETY. International Bulletin of Medical Sciences and Clinical Research, 3(9), 24-28.
8. Djalilova, Z. (2023). THE USE OF LATIN TERMINOLOGY IN MEDICAL CASE. Академические исследования в современной науке, 2(14), 9-15.
9. Obidovna, D. Z., & Sulaymonovich, D. S. (2022). Physical activity and its impact on human health and longevity. Достижения науки и образования, (2 (82)), 120-126.
10. Караматовна, М. А. (2023). ФОРМИРОВАНИЕ В ЯЗЫКОЗНАНИИ ТЕОРИИ СЕМАНТИЧЕСКОГО ПОЛЯ. Мусаева, А. (2023). РУССКИЙ ЯЗЫК В МЕЖКУЛЬТУРНОЙ СРЕДЕ. Современная наука и исследования, 2 (4), 182–186.
11. Ergasheva, G. (2023). METHODS TO PREVENT SIDE EFFECTS OF DIABETES MELLITUS IN SICK PATIENTS WITH TYPE 2 DIABETES. *InternationalBulletinofMedicalSciencesandClinicalResearch*, *3*(10), 104-108.