SALINITY AND SOME PHYSIOLOGICAL FEATURES OF WINTER WHEAT VARIETIES

Zoirova Shakhnoza Umarovna
Master's degree student, Bukhara State University, Bukhara, Uzbekistan

Teshaeva Dilfuza Umarova
Teacher, Bukhara State University, Bukhara, Uzbekistan

Globally observed stress factors - have a serious negative impact on living organisms, including the world of plants. As a result, the productivity indicators of plants and the harvest and its quality are decreasing. The deepening of scientific research aimed at reducing the negative effects of such stress factors and the development of measures to save the lost crop, the evaluation and justification of the physiological aspects of the effects of adverse stress factors are considered the most important tasks [1-5].

Studying the mechanisms of resistance of plants to salt stress and revealing it is one of the urgent theoretical and scientific problems in the world, by deepening scientific research in this field, creating methods of using exogenous and endogenous substances to increase the resistance of wheat to stress factors, wide use of the existing gene pool of crops in genetic-selection research and great attention is paid to wide application to agricultural production. The need for conducting such research is explained by the fact that it requires the activation of various physiological and biochemical mechanisms to overcome the stress caused by salinity in plants [6-11].

Grain crops are one of the important technical crops that provide raw materials for various branches of production. Optimum factors aimed at maintaining the crop are required when growing products at the level of demand. Improving the agro-melioration condition of the irrigated lands of our republic, improving the ecophysiological and agrotechnical measures used in the prevention of soil salinization, identifying, creating and putting into practice the varieties of agricultural crops adapted to stress factors, the physiological and biochemical characteristics of wheat varieties that express the level of resistance and productivity in stressful conditions, and the adaptation of varieties certain results were achieved in the evaluation and scientific justification of reactions [12-17].

The purpose of the study is to determine the physiological characteristics of the effect of salt stress on the physiological and productivity indicators of winter wheat varieties in the conditions of the Bukhara region and to develop physiological methods for determining the resistance of wheat to this factor and increasing it.

As the object of the study, the varieties Grom, Pervisa, Starshina, Alekseevich, Krasnodarskaya-99, Vassa, asr and Antonina, belonging to the group of winter wheat varieties, were used.

To determine the level of physiological resistance of wheat varieties to salt stress, the density of cell sap, the number of chloroplast pigments, the rate of photosynthesis and the rate of respiration were comparatively analyzed, and to determine the physiological effect of salt stress on the water exchange of wheat varieties, the rate of transpiration, the water content in leaves, water deficit in leaves, the amount of bound water, leaf water retention and cell turgor were evaluated in cultivar sections.

By studying the effect of soil salinity on the productivity of wheat varieties, the growth rate of the varieties, the expansion of the leaf surface of the varieties, the net photosynthetic productivity, the yield indicators are scientifically based, and the mechanisms of the physiological effect of salt stress on wheat have been developed, and the varieties that are resistant to soil salinity and have high productivity indicators are scientifically based. It was recommended to produce it in areas with high salinity.

For the first time, in the conditions of saline soils, physiological methods have been developed for determining the degree of resistance of varieties to salt stress by determining the content of bound water in the leaves of winter wheat varieties (ABW), the degree of cell turgosence (CTL), indicators, and increasing the level of resistance to salt stress in exchange for pre-sowing

Based on the resistance characteristics of the varieties, practical recommendations were developed for their placement in the areas of the Bukhara oasis with different degrees of salinity and the areas with a strong effect of salt stress.

Autumn in the ontogeny of wheat cultivars, determination of the degree of resistance to salt stress of the cultivars by determining the bound water content (ABW), cell turgor level (CTL), and Physiological methods have been developed to increase resistance to salt stress by pre-sowing treatment.

The practical significance of the results of the study is determined by the possibility of obtaining a high and high-quality harvest by planting starshina, Krasnodarskaya-99 and Grom, varieties with medium-strong saline soils, varieties Antonina, Alekseevich, Vassa with an average level of endurance, and relatively weak regions with the influence of stress factors.

The introduction of recommendations into practice serves to improve The Agrotechnology of growing autumn wheat in regions where salinity is observed.

Based on the results obtained during the research, the following winter wheat varieties can be recommended for planting:

1. It is recommended to plant Starshina, Grom, and Krasnodar-99, which are resistant to stress factors and salt, in medium-high salinity areas of the Bukhara region, and Antonina, Alekseevich, and Vassa varieties in medium salinity areas.
2. Due to the low level of resistance to stress factors and soil salinity, it is recommended to plant Pervitsa and Asr varieties of winter wheat in non-saline or weak soil salinity areas.

3. In order to increase the yield of winter wheat varieties, it is proposed to use physiological methods to quickly determine the level of salt tolerance and increase resistance to salt stress.

References

1. Kholliyev A. E., Teshaeva D. R. **(**2022). Adaptation Characteristics of Autumn Wheat Varieties to Salinity Stresses. *Ra journal of applied research*. 8(3). 209-213.
2. Kholliyev, A., & Teshaeva, D. (2021). Soil salinity and water exchange of autumn wheat varieties. *Збірник наукових праць ΛΟΓΟΣ*.
3. Teshayeva D. R. (2022). Kuzgi bug'doy navlari va sho'r stressi. *Zamonaviy biologik ta'limni rivojlantirishda fan, ta'lim va ishlab chiqarishning integratsiyasi. Respublika ilmiy - amaliy anjuman materiallari*. Jizzax, 30-33.
4. Norboyeva, U. T. (2017). Kholliyev AE Salinification influence on physiology of water exchange in cotton plant varieties (Gossypiym HirsutumL.). *The Way of Science. International scientific jornal.–Volgograd*, (7), 41.
5. Norboyeva, U. T. (2018). Kholliyev AE soil salinity and saline tolerance of the sorts of cotton. *Mechanisms of resistance of plants and microorganisms to unfavourable environmental. Irkutsk*, 567-570.
6. Norboyeva, U. T. (2018). Kholliyev AE water interchange and saline tolerance of the sorts of cotton. *Mechanisms of resistance of plants and microorganisms to unfavourable environmental. Irkutsk*, 563-566.
7. Toshtemirovna, N. U., & Ergashovich, K. A. (2019). Physiology, productivity and cotton plant adaptation under the conditions of soil salinity. *International Journal of Recent Technology and Engineering*, *8*(2 S3), 1611-1613.
8. Toshtemirovna, N. U., & Ergashovich, K. A. (2019). Regulation of the water balance of the cotton varieties under salting conditions. *ACADEMICIA: An International Multidisciplinary Research Journal*, *9*(8), 5-9.
9. Ergashovich, K. A., Toshtemirovna, N. U., Rakhimovna, A. K., & Abdullayevna, F. F. (2020). Effects of microelements on drought resistance of cotton plant. *International Journal of Psychosocial Rehabilitation*, *24*(2), 643-648.
10. Ergashovich, K. A., Azamatovna, B. Z., Toshtemirovna, N. U., & Rakhimovna, A. K. (2020). Ecophysiological effects of water deficiency on cotton varieties. *Journal of Critical Reviews*, *7*(9), 244-246.
11. Kholliyev, A. E., Norboyeva, U. T., Kholov, Y. D., & Boltayeva, Z. A. (2020). Productivity of cotton varieties in soil salinity and water deficiency. *The American Journal of Applied sciences*, *2*(10), 7-13.
12. Кобилов, Э. Э., Шамсиев, А. М., & Юсупов, Ш. А. (2006). Декомпрессия желудочно-кишечного тракта при острой спаечной кишечной непроходимости у детей. *Детская хирургия*, (4), 17-19.

13. Kholliyev, A. E., Norboyeva, U. T., Kholov, Y. D., & Boltayeva, Z. A. (2020). Productivity of cotton varieties in soil salinity and water deficiency. *The American Journal of Applied sciences*, *2*(10), 7-13.

14. Ergashovich, K. A., Toshtemirovna, N. U., Raximovna, A. K., & Abdullaevna, F. F. (2022). The Properties of Cotton Resistance and Adaptability to Drought Stress. *Journal of Pharmaceutical Negative Results*, *13*(4), 958-961.

15. Toshtemirovna, N. U., & Ergashovich, K. A. (2019). Physiology, productivity and cotton plant adaptation under the conditions of soil salinity. *International Journal of Recent Technology and Engineering*, *8*(2 S3), 1611-1613.

16. Ergashovich, K. A., Toshtemirovna, N. U., Davronovich, K. Y., Azamatovna, B. Z., & Raximovna, A. K. (2021). Effects of Abiotic Factors on the Ecophysiology of Cotton Plant. *International Journal of Current Research and Review*, *13*(4), 4-7.

17. Kholliyev, A., & Boltayeva, Z. (2020). Resistance of cotton varieties to water deficiency. *Збірник наукових праць ΛΟГОΣ*, 70-72.