

# EFFECT OF DIFFERENT SOIL MOISTURE LEVELS ON THE CONCENTRATION OF LEAF CELL SAP

**Fozilov Sherzod Musurmonovich**

Termez State University, Teacher. Surkhandarya, Uzbekistan

**Annotation:** The paper analyzes the dynamics of changes in the concentration of leaf cell sap in soybean plants under normal and limited moisture conditions and vegetation periods.

**Key words:** soybean varieties, concentration of sap cells, diagnostics, water deficit.

The problem of plant adaptation to extreme growing conditions is in the focus of attention of many researchers who are looking for various (breeding, introduction, agrotechnical, etc.) ways to increase plant resistance to stress [1-3]

The application of the most effective methods for diagnosing resistance in practice is an important task that cannot be solved without developing methods for assessing the adaptive potential of plants [4-8].

In our zone, unfavorable in terms of hydrothermal conditions, one of the most significant abiotic stress factors affecting plants is their insufficient water supply in summer. The stress associated with this can last from the second decade of June to the third decade of August.

Summer droughts cause significant damage to many types of cultivated plants, including soybean. Thus, in unfavorable periods from the point of view of water supply, the characteristics of the growth and development of the soybean plant decrease, it is manifested by the yellowing of leaves and shedding of flowers.

In this regard, the aim of the study was to study the physiological parameters of the soybean plant, which characterize its resistance to stress factors in the hot conditions of the Surkhandarya region.

One of the indicators of soybean plant water supply is the concentration of cell sap in the leaves. According to the dynamics of the concentration of cell sap during the vegetation period, it is possible to estimate the water deficit of the

soybean plant.

Among the environmental factors that affect the concentration of cell sap in leaves, soil moisture is of great importance.

The concentration of cell sap is one of the sensitive indicators of the state of the water regime of plants. The concentration of cell sap is to a certain extent related to the ecological adaptation of plants to the environmental conditions, and it is an indicator of the resistance of plants to drought. That is, with the increase in soil moisture, the concentration of plant leaf cell sap decreased, and as the soil became dehydrated, the concentration of cell sap increased.

In turn, the level of cell sap concentration of soybean tissues is greatly influenced by the ambient temperature and the volume of moisture reserves in the soil. An increase in air temperature, especially in drought conditions, has been found to increase the transpiration of water from the shade and, as a result, to increase the concentration of cell sap.

Among the environmental factors that affect the concentration of cell sap in leaves, soil moisture is of great importance. According to the data, the concentration of cell sap from the second half of July to the end of August clearly reflects changes in soil moisture: each decrease in soil moisture corresponds to an increase in the concentration of cell sap and vice versa; watering leads to a decrease in the concentration of cell sap.

The concentration of cell sap is significantly affected by air temperature and lack of air humidity. When studying these changes with the daily course of temperature and atmospheric moisture deficit, almost complete parallelism was observed.

Summary. As a result of the experiments, it was found that the level of water deficit and the increase in the concentration of cell sap lead to a decrease in leaf turgor, which is directly related to each other.

#### REFERENCES

1. Fozilov Sh.M., Soya o'simligi barglarning hujayra shirasi

konsentrasiyasini tupraq namligiga bog'liqligi // NamDU ilmiy axborotnomasi– 2022-yil 12-son. 91-94 betlar.

2. Baxriddinova R. U., Musurmonovich F. S. Soybean-as a source of valuable food //Texas Journal of Multidisciplinary Studies. – 2022. – Т. 6. – С. 165-166.

3. Musurmonovich F. S., Komiljonova X. S., Qudrat o'g'li S. A. Some Photosynthetic Indicators of Soybean Varieties //Texas Journal of Multidisciplinary Studies. – 2022. – Т. 5. – С. 255-257.

4. Ergashovich K. A., Musurmonovich F. S. Some Characteristics Of Transpiration Of Promising Soybean's Varieties //The American Journal of Agriculture and Biomedical Engineering. – 2021. – Т. 3. – №. 05. – С. 28-35.

5. Фозилов Ш. М. Периодичность роста и формирования урожая у внутривидовых форм пшеницы //Интернаука. – 2019. – №. 45-1. – С. 18-20.

6. Baxriddinova R. U., Musurmonovich F. S. Distance Learning System in Educational System Instead, and Significance //Texas Journal of Multidisciplinary Studies. – 2023. – Т. 21. – С. 11-13.

7. Normuminova Q. D., Musurmonovich F. S. Bioecological Properties of Salvia Officinalis L //Texas Journal of Multidisciplinary Studies. – 2022. – Т. 6. – С. 249-252.

8. Baxriddinova R. U. Methodology For Solving Problems of Food Chains and Ecological Pyramids and Its Significance //Texas Journal of Multidisciplinary Studies. – 2024. – Т. 28. – С. 19-22.

9. Fozilov S., Ziyodova M. Maktablarda steam texnologiyasini joriy etishning xususiyatlari va afzalliklari //Biologiyaning zamonaviy tendensiyalari: muammolar va yechimlar. – 2023. – Т. 1. – №. 5. – С. 819-821.

10. Fozilov S. The effect of drought on the water regime in the leaves of soybean varieties //Science and innovation in the education system. – 2023. – Т. 2. – №. 9. – С. 25-28.