EFFECT OF LIMITED MOISTURE ON THE LEAF WATER REGIME OF SOYBEAN VARIETIES

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Annotation: The research work was aimed at determining the characteristics of the parameters of the water regime in soybean varieties in drought conditions. The parameters of the water regime in plant leaves were determined under conditions of irrigation and drought. According to the values of the water holding capacity, it is possible to judge whether plants withstand drought.

Key words: soybean varieties, water regime, water retention capacity

Annotatsiya: Tadqiqot ishi cheklangan namlik sharoitida soya navlari suv rejimi ko’rsatkichlarining xususiyatlarini aniqlashga qaratilgan. O'simlik barglaridagi suv rejimining parametrlari sug'orish va cheklangan namlik sharoitida aniqlandi. Suvni saqlash qobiliyatining qiymatlariga ko'ra, o'simliklar qurg'oqchilikka bardosh beradimi yoki yo'qligini aniqlash mumkin.

Tayanch so‘zlar: soya navlari, suv rejimi, suvni saqlash qobiliyati

Enter. Soybean (*Glycine max L.)* proteins , fats and mineral elements natural source has been legumes of crops main from the representatives is one It is food , fodder and technical purposes wide is used and valuable food is a plant . Grain, corn with alternately planting possible Soybean soil that is nitrogen with enriches because it is natural nitrogen in circulation participation is enough But the end in years fertile of varieties creation and of productivity to increase although abiotic _ and biotic stress factors with depends losses are also observed [1].

of plants to drought durability early diagnosis to do development resistant varieties and forms in choosing big important have [3]. Therefore, Surkhandarya to the climate special was to a drought-tolerant soybean plant of influence physiological and biochemical aspects learning is a priority issue . Water mode parameters learning of plants to drought durability determination for is the basis . This feature the first next , water storage ability is considered

Research object and methods. Research work was carried out in the conditions of field and vegetation experiments. The researches were carried out during the years 2019-2023 in the 3rd contour of the central experimental field of the Ingichka fiber cotton research institute (ITPITI), Termiz district, on an area of 0,15 ha. 4 promising (domestic Baraka, To'maris MAN-60, Ustoz MM-60 and foreign Vilana) soybean varieties were used as objects of research. Experimental experiments were carried out in field conditions in four-reverse, 24 m^2 fields.

The ability of assimilating organs to store water was studied by the method of AANichiporovich [4].

Mathematical and statistical processing of the obtained experimental data was carried out using modern computer programs.

Dynamics of soil moisture in the constant water balance and during the vegetation period by the thermostatic - gravity method at a depth of 1,5 m was determined [2].

The purpose of the study is to determine the characteristics of the water regime parameters of soybean leaves under limited and optimal moisture conditions.

Research results and its discussion. According to the results of the research, it was found that the leaves of the studied mesophytic plant - soybean varieties have average water retention properties, that is, soybean varieties are resistant to drought. When we compared the water retention properties of the studied soybean cultivars, we found that the water retention properties of the soybean leaves grown under limited moisture conditions were reduced.

The ability of soybean leaves to retain water depends on the growing season, air temperature during the day, and soil moisture. The water retention capacity of the leaves of soybean varieties decreases according to the phases of the plant's development. The highest rate of water holding capacity under optimal moisture conditions was observed in the V_1 phase of Tomaris MAN-60 variety, which was 66,5%, while the lowest rate was observed in the R_3 phase of Vilana variety, which

was 57,1%. In the conditions of limited moisture, the highest rate was observed in the V_1 phase of the Ustoz MM-60 variety, which was 48,6%. The lowest rate was also observed in the R_3 phase of the Vilana variety, which is 22,7%, as well as under optimal moisture conditions.

In conditions of optimal water supply, the average index of water retention capacity in plant leaves was in the range of 59,75-63,05%, while in conditions of limited humidity, this index was 44,9- It was observed that 25,9%. It was observed that the strong development of water storage capacity has a positive effect on plant development, and in drought conditions, the reduction of the total amount of water in the leaves to varying degrees leads to a violation of the water balance in plants (Table 1).

1 - table

Water retention capacity of leaves of different soybean cultivars

Soybean varieties	Development phase				Average
	V_1	V_3	R_1	R_3	
Optimal humidity					
Baraka	65,8±0,72	64,4±0,72	62,3±0,66	59,7±0,67	63,05
To‘maris MAN-60	66,5±0,86	64,5±0,73	63,2±0,66	60,5±0,67	63,7
Ustoz MM-60	63,9±0,85	62,4±0,76	59,9±0,65	58,6±0,67	61,2
Vilana	61,8±0,81	60,7±0,79	59,4±0,68	57,1±0,67	59,75
Limited humidity					
Baraka	43,4±0,82	41,8±0,76	38,4±0,64	37,7±0,64	40,3
To‘maris MAN-60	43,8±0,84	41,2±0,77	40,5±0,65	37,6±0,66	40,8
Ustoz MM-60	48,6±0,79	45,3±0,75	43,7±0,66	42,3±0,64	44,9
Vilana	29,4±0,72	26,3±0,74	25,2±0,62	22,7±0,62	25,9

Because soybean is a warm climate crop, it is usually grown in irrigated areas. Since the soybean plant's water needs are particularly high during the flowering and fruiting periods, adequate irrigation is required during these periods.

The water retention properties of the leaves of the studied soybean varieties are also low during these periods of their ontogenesis. This may be related to active metabolic processes and the formation of reproductive organs during these periods , as a large amount of water is required for their implementation.

Summary. The values of the rate of moisture release from the leaves of the studied varieties are different. For example, Vilana variety has 59,75% under optimal moisture conditions, but limited moisture is 25,9% under wet conditions, which is reduced by 33,3%, which indicates its sensitivity to drought conditions. The lowest effectiveness was observed in Ustoz MM-60 variety, its indicator was 16,3%.

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