

Starting Materials For Improving Drought and Heat Tolerance of Winter Wheat Varieties

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Abstract:

The article provides information on drought and heat resistance and other factors of winter wheat varieties and samples in irrigated lands. In this context, it is stated that the methods of assessing winter wheat resistance to drought and heat can be determined at different stages of the growth period and at the first stage of development.

Keywords: winter wheat, drought, heat, resistance, variety, sample, growth, fertility, number of tubers, length, yield, grain quality.

Introduction. Arid and hot conditions are one of the main features of the climate of regions where wheat is grown in Uzbekistan. Frequent droughts in Uzbekistan during the growing season of wheat have a great impact on the plant, causing a decrease in productivity and grain quality. Therefore, one of the main requirements for new varieties created in Uzbekistan is drought and heat resistance with high productivity. Considering the above, it is advisable to study and select drought-resistant varieties.

Research subject and method. In the experiment, work was carried out on 100 varieties and variety samples belonging to different ecotypes. In order to create drought-resistant varieties, the drought resistance of soft wheat varieties and samples was studied in laboratory conditions based on the assessment of the germination of seeds in sucrose solution, the number and length of rhizomes. One of the first ways to determine the resistance of plants to drought, founded by A. Bulinger in 1927, is to grow seeds in a sucrose solution. In the experiment conducted by us, the level of drought resistance was determined in the laboratory of plant physiology of the Kashkadarya branch of the Scientific Research Institute of Grain and Legume Crops based on the method of N. Kojushko.

Research result. According to J. Lelley, the resistance to drought is not the same during the entire growth period of the wheat plant. Drought is known to quickly cover large areas and drastically reduce crop yields. As a result, agricultural crops suffer a lot. One of the important actions in the fight against drought is the creation of drought-resistant varieties of crops.

In this study, drought and heat tolerance of samples from the world collection and primary sources were evaluated in laboratory conditions for the creation of drought-resistant, heat-resistant wheat varieties in the conditions of Uzbekistan. Today, the methods of evaluating the resistance of

plants to drought and heat can be determined at different stages of the growth period and at the first phase of the development stages.

According to R.A. Borodina, it is necessary to adjust the concentration of the solution every year when collecting seeds. Because seeds grown in different years have different germination capacity. O.I. Gamzikov and L.G. Gudinova, who studied the drought resistance of spring soft wheat in the conditions of Western Siberia, also agreed with the above opinion.

In the conducted experiment, the germination of the model "Yaksart" variety, according to the number of sprouted grasses, was 92% in the control option, 97% in the sucrose solution, the number of rootlets was 3.9 units in the control option and 3 units in the sucrose solution (Table 1).

Table 1

Evaluation of drought-resistant soft wheat varieties and samples in laboratory conditions

	D	Variety and sample names	Sleeples sness, %	Root number, pcs		Root length, cm		Coleoptile length, cm	
				K	C	K	C	K	C
1	1	H Beshir	97	3,9	3	9,2	3,7	3,9	2,3
2	11	Yaksart	97	4	3	9,2	1,6	3,5	1,6
3	3	BONITO- 36/BILINMIYEN96.55 D- 19	99	3,7	3.9	4.6	4.2	3.3	3.2
4	7	LUTESCENS- 42*2//PBW343*2//KUKUN A D-59	99	4.8	4.6	6.1	4.8	5.2	4.3
5	16	LUTESCENS- 42*2/4/SERI.1B*2/3/KAU Z*2/BOW//KAUZ D-50	96	4,3	4,1	7,1	6,7	4,5	4,2
6	9	SKIPHYANKA*2//PRL/2* PASTOR D-79	99	3,5	4,2	7,3	6,1	5	4,5
7	21	AGRI/NAC//ATTILA/3/PY N/2*BAU	96	3,4	3	8,6	4,7	4.8	3,7
8	22	OGALLALA/KS95WGRC 33//JAGGER/3/BETTY	98	5	4.3	6.4	5,8	4,9	4,6
9	41	AGRI/NAC//ATTILA/3/D ORADE-6	98	4,6	4,3	5,4	4,1	4,9	4,6
10	42	8229/OK81306//SHARK- 4/3/BONITO-37	97	4,1	4,4	4,1	6,3	3.8	4,9
11	43	ID800994W/VEE//F900K/3 /PONY/OPATA/4/BUCUR D-23	96	4,5	4,8	6,7	7,9	5,8	5,3

12	44	SAD1//KATE/MVM/3/GENE/4/PEHL//VORN/BAU	99	4,2	3,6	5,1	4,6	4,8	4
13	64	ANAST/3/LUFER-1/MV OPT//F6038W12.1 D-35	99	4,8	4	5,5	4,9	4,8	3,8
14	65	KARLYGASH*2/TUKURU D-45	97	4,3	3,4	4,4	4	3,9	3,2
15	69	STEKLOVIDRAYA-24/4/SERI.1B*2/3/KAUZ*2/BOW//KAUZ D-85	99	3,7	3,9	4,8	5,3	4,8	4,3
16	70	SKIPHYANKA/4/SERI.1B*2/3/KAUZ*2/BOW//KAUZ D-95	98	3,3	3	5,4	4,7	3,4	3,2
17	58	SKIPHYANKA*2/4/SERI.1B*2/3/KAUZ*2/BOW//KAUZ D-74	99	3,8	3,2	6,5	5,9	4,7	4,3
18	95	ALMALY*2//PRL/2*PASTOR	96	3,9	3,3	3,6	3,2	2,5	2,9
19	96	LUTESCENS-42*2/TUKURU	100	3,6	3,1	3,8	3,4	3,4	3,2
20	99	ALMALY//PRL/2*PASTOR D-88	99	3,3	2,9	3,6	3,2	3,5	2,7
21	100	KUPAVA//PBW343*2/KHVAKI	99	4,1	3,9	5	4,8	3,4	3

The number of sprouted grasses in the studied samples was 92-100% in the control version, 97-100% in the sucrose solution, compared to the control variety. It was found that there were 8 pieces in the interval. 19 cultivars and samples with high drought resistance compared to the sample "Yaksart" variety had 98-100% germination in the control option, and these indicators were 96-100% in the sucrose solution, respectively.

According to the results of the experiment, the parameters of the soft wheat samples (OGALLALA/KS95WGRC33//JAGGER/3/BETTY,LUTESCENS42*2//PBW343*2/KUKUNAD59,ID800994W/VEE//F900K/3/PONY/OPATA/4/BUCURD-23) in the sucrose solution, namely the number of sprouted grasses and roots, and the length of the roots and coleoptiles, were higher than the standard varieties and samples. were selected for the creation and crossbreeding of wheat varieties.

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