BREEDING OF LOCAL HYBRID LINES OF BREAD WHEAT IN THE SOUTH REGIONS OF THE REPUBLIC OF UZBEKISTAN

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Abstract: It is very important to select productive and stable constant forms from F6 hybrid generations for the creation of new varieties of grain crops. For transfer to the subsequent stages of breeding, 260 hybrid lines of bread wheat created by hybridization were evaluated, as well as these lines were comprehensively characterized by their economically valuable traits.

Key words: bread wheat, hybrid line, productivity, protein, gluten.

Introduction. According to Sh.Dilmurodov, the correlation between productivity and resistance to external factors is negative, therefore, an integrated approach to the issue of creating resistant varieties is required [38, 43, 47, 54, 55, 56].
The main factors influencing the increase in the yield of grain crops in hot and dry conditions are torsion, the horizontal arrangement of the leaves of the plant and a powerful root system and a short duration of the grain filling period [6, 9, 13, 16, 22, 26].
O.Amanov believes that during the evaluation of hybrid wheat lines, it is mainly necessary to pay special attention to such indicators as yield, weight of 1000 grains and grain quality indicators[17, 24, 27, 31, 37, 42, 46].
Increasing the yield of grain crops for rainfed areas requires the creation of varieties with higher yields of 3-5 c / ha than existing bread wheat varieties and grain quality indicators that fully meet the requirements of a strong wheat class [5, 8, 11, 19, 23, 29, 32].
For this purpose, the evaluation of hybrid lines, which have remained unchanged as a result of selection work, in different soil climatic conditions, on the basis of selection indicators and the selection of the most productive lines and their introduction into production is an urgent task [34, 36, 41, 48, 53, 57, 58, 59].
The high grain weight of 1000 grains in grain formation is a decisive sign of an abundant and stable yield. Lack of moisture in the soil, high temperatures, damage by fungal diseases lead to a decrease in grain weight of 1000 grains [1, 4, 12, 51, 60, 61, 62].
According to scientists, the protein content of wheat grains can range from 8% to 19%, depending on different natural climatic conditions and grain cultivation [2, 7, 15, 20, 21, 28, 33, 39, 44, 49, 63, 64, 65].
According to the experiments of scientists, due to the increase in air temperature in Karshi in 2011 compared to 2010 by 1.4 ºC, the protein content of the grain of "Gozgan" decreased by 1.1 %, gluten increased by 2.3 %, yield increased by 9.8 c / ha. showed a decrease.

Consequently, high air temperatures and drought conditions have been observed to increase the amount of bread wheat protein and decrease the yield and increase the amount of gluten [3, 10, 14, 18, 25, 30, 35, 40, 45, 50, 52, 66, 67, 68].

Research methods and materials. Experimental placement and experimentation were carried out according to the method of phenological observation, calculation and analysis (All-Union Institute of Botany VIR, 1984) and biometric analysis according to the method of the State Variety Testing Commission of Agricultural Crops (1985, 1989). Mathematical and statistical analysis of the experimental results was carried out on the basis of the method of BA Dospekhov (1985). In the research study, the scheme of field experiments was based on the Alpha lattice design of the GenStat 13 program.

Technological quality indicators of winter wheat grain grown in the experimental field "Methodical recommendations for the evaluation of the quality of grain", "Methods of biochemical research of plants", gluten content GOST 13586-1-68, grain glass GOST 10987-76 93, grain nature was studied in comparison with GOST 3040-55, 1000 grain weight in accordance with GOST 10842-89.

With an increase in yield, one of the key factors is the rational use of competitive, suitable for various soil and climatic conditions, newly created intensive varieties. In the course of research conducted during the 2020-2021 season in the Southern Agricultural Research Institute, 260 hybrid lines of common wheat created by hybridization were sown on the experimental plot of the Karshi branch, as well as these lines were comprehensively characterized by their economically valuable traits and selection tests were carried out. work.

The soil of the Karshi branch located in the central territory of the region belongs to light gray soils. Under these conditions, within the framework of the study, 260 hybrid lines and the F6 generation were studied, and 5 varieties of bread wheat intended for cultivation in the irrigated areas of the Republic were chosen as a standard. The data of indicators of the studied hybrid lines were compared with the indicators of the selected standard varieties and selection work was carried out. Based on the results of the selection work, the most productive, disease and pest resistant hybrid lines were selected and provided for subsequent breeding work.

Results. Sowing works of varieties and hybrid lines were carried out on October 18. The total sown area of the studied hybrid varieties was 5 m2. The period of seed germination was noted on November 4-5, the tillering period on December 4-16 and the period of emergence into the tube on March 11-24.

The heading period of cereals plays an important role in the overall development of the plant and especially affects the yield indicators in general. In our case, the heading period of the studied varieties and hybrid lines was observed between April 18 and May 1. The seed germination-earing period was 165-177 days. It was noted that in the studied hybrid lines KR17BWF6-Plot-170, KR17BWF6-Plot-172, the seed germination-heading period was 165 days, which is 1 day shorter than the seed germination-heading period of the early-maturing variety Khazrati Bashir.

The period of full maturation of the studied varieties and hybrid lines fell on June 2-11. The period of seed germination - maturation was 209-219 days.

Based on the results of the studies, the plant height indicator varied from 80-155 cm. During the processing of the research analyzes, 4 lines of short-stem hybrid lines were identified, the height indicator of which was less than 90 cm. In 60 studied lines, the plant height varied from 90-110 cm , in 105 lines within 110-120 cm and in 101 lines the height index was above 120 cm. As already noted by many scientists, if the height of the plant is lower than usual (dwarf), then this, in turn, negatively affects the yield of plants, but the excessive height of

the plants creates a number of problems. Based on the foregoing, selection work was carried out in plants whose height varied within 100-115 cm.

Table 1

The main economically valuable features of varieties and hybrid lines.

№	Name	Grain yield, c/ha	1000 kernel weight, g	Test weight, g/l	Protein content, %	Gluten content, %	Days to heading date	Days to maturity date	Plant height, cm
1	KR17BWF6-Plot-16	103.2	41.6	815	14.1	28.3	166	210	97
2	KR17BWF6-Plot-35	95.6	35.7	795	15.6	31.5	173	217	115
3	KR17BWF6-Plot-38	86	36.4	810	15.6	31.7	172	217	113
4	KR17BWF6-Plot-39	85.4	37.2	800	15.7	32.4	172	219	110
5	KR17BWF6-Plot-41	90	39.2	795	15.6	30.4	175	215	108
6	KR17BWF6-Plot-65	105.8	39.8	785	15.7	29.7	170	215	115
7	KR17BWF6-Plot-96	89.4	40.2	825	15.1	29.7	172	213	110
8	KR17BWF6-Plot-146	89.6	36.2	765	14.6	27.3	170	213	111
9	KR17BWF6-Plot-149	87.2	38.6	760	14.4	28	170	214	116
10	KR17BWF6-Plot-159	89	39.4	797	15	29.4	171	214	113
11	KR17BWF6-Plot-163	101.8	41.4	760	15.4	28.9	172	214	105
12	KR17BWF6-Plot-165	94	40.8	765	15.3	28.3	174	216	95
13	KR17BWF6-Plot-169	99.6	38.6	830	14.8	29.4	166	209	114
14	KR17BWF6-Plot-170	92.4	38.8	815	15.2	28.5	165	209	117
15	KR17BWF6-Plot-172	94.2	42.2	815	14.2	28.5	165	210	114
16	KR17BWF6-Plot-204	94.6	40.1	790	15.6	28.6	167	214	108
17	KR17BWF6-Plot-208	93.8	41.4	775	14.6	28.3	167	212	115
18	KR17BWF6-Plot-241	108.6	38.5	795	14.4	28.2	171	212	114
19	KR17BWF6-Plot-243	99.2	38.4	770	16.3	29.7	171	214	118
20	KR17BWF6-Plot-244	102.4	37.4	770	14.5	28.6	168	211	112
21	KR17BWF6-Plot-245	93.6	39.8	825	14.1	28.9	169	212	110
22	KR17BWF6-Plot-246	102.2	41.3	785	15.1	29.5	173	212	115
23	KR17BWF6-Plot-249	94.4	38.4	780	14.5	28.4	170	212	115
24	KR17BWF6-Plot-252	97.6	36.7	790	15.1	28	172	214	112
25	KR17BWF6-Plot-262	95.6	40.8	829	14.7	28.1	168	211	116
26	Yaksart (check)	77.5	40.5	785	14.55	28.15	172	214	105

27	Gozgon (check)	83.6	39	805	14.85	28	171	213	116
28	Bunyodkor (check)	73.2	41.5	785	14.9	29.05	170	212	108
29	H.Beshir (check)	81.7	39.4	815	14.65	28.45	166	209	114
30	Krasnodar-99 (check)	70.5	38.8	799	15.7	26.65	173	215	101

According to the results of the research, the yield index of the varieties selected as a control variant for the Yaksart variety was 77.5 c/ha, for the Gozgon variety 83.6 c/ha, for the Bunyodkor variety 73.2 c/ha, for the Khazrati Bashir variety 81.7 c/ha and for the Krasnodarskaya variety -99 respectively 70.5 c/ha. Analysis of the data showed that in the studied 73 hybrid lenii, the yield index was higher than the yield of standard varieties.

The nature of the grain is one of the main parameters reflecting the granularity and coarseness of the grain. The natural weight of the studied lines varied within 735-844 g/l. Based on the results of the data, it was determined that in 126 studied lines, the grain size was more than 800 g/l.

According to the weight of 1000 grains, the varieties are divided into 4 groups: 1) the largest - more than 50 g, 2) large - 41-50 g, 3) medium - 31-40 g, 4) small - less than 30 g.

According to the results of the research, among the studied varieties and hybrid lines, there were no lines that met the requirements of the first group in terms of weight of 1000 grains. The weight index of 1000 grains in the studied 33 lines meeting the requirements of the second group varied within 41-50 g, in 156 lines meeting the requirements of the third group this indicator was noted in the range from 31-40 g. In 81 studied sample with fine grains, the weight of 1000 grains was below 30 g.

The amount of protein in the composition of the grain in the studied lines ranged from 11.6-19.9%. The protein content in the studied 212 hybrid lines was more than 14%.

In 136 studied lines, the gluten content in the grain composition was above 28%. In 50 lines studied, this indicator ranged from 25-27.9%, in 26 lines this indicator was 22-24.9%, and in 54 lines this indicator was below 22%.

Conclusion. From all of the above, we can conclude that in the course of the experiment, 39 lines more preferable than standard varieties were transferred from the breeding nursery to the control one. In the near future, the selected hybrid lines will be used in subsequent breeding work to create fertile, resistant to diseases and pests, with high grain rates of new varieties of bread wheat.

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