UDC: 633.111.1; 631.527.3

SELECTION OF HIGH YIELD AND 1000 GRAINS WEIGHT WINTER BREAD WHEAT VARIETIES FOR THE SOUTHERN REGIONS

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Abstract: One of the main requirements for winter bread wheat varieties is the yield index. The ever-increasing population is increasing the demand for new, more productive varieties. This article gives an opinion about the process of selection of varieties and varieties suitable for the southern regions of our republic, with high yield, high chlorophyll content in leaves, and large weight of 1000 grains. The yield of winter bread wheat, the high content of chlorophyll in the leaf, and the high weight of 1000 grains were selected and involved in practical selection work.

Key words: Bread wheat, variety, line, chlorophyll content, yield, 1000 grain weight.

Diversification of agriculture, further strengthening of food security and expansion of production of ecologically clean products in our republic in the last five years represent one of the bright features of modernizing strategy of Uzbekistan. Since the first years of independence, a number of reforms have been implemented in the field of grain production. In 1991, 940,000 tons of grain were grown in our country, and the average yield per hectare was 17 centners. Due to the introduction of efficient production technologies and the strengthening of the material and technical base of farms and cluster enterprises, it is now 7 mln. more than tons of grain are grown.

The southern regions of our country have a moderate climate for growing early and mid-early wheat varieties. In the conditions of our republic, the formation of well-filled grains from early and medium-ripening varieties is good, while in late-ripening varieties, due to the high temperature during the grain formation period, the grain ripens prematurely and due to the effect of high air temperature (haze cloud), the grain is destroyed, accordingly, the yield decreases. The advantage of late-season varieties is that the yield is high due to the slow rise and adaptation to the spring-summer temperature [6, 11, 17, 25].

Wheat is one of the most common agricultural crops in the world. Its grain contains almost all substances (proteins, carbohydrates, minerals, etc.) necessary for the normal development of the human body. Wheat bread has high taste and nutritional

properties, is well digested and absorbed by the body. Wheat grain is also used in cereal, pasta and confectionery industry. It is the staple food for 35% of the world's population and provides about 20% of the population's energy needs [4, 16, 23, 31].

In cereals, flowering time is a crucial stage in crop production, as it regulates the ability of plants to adapt to the environment [2, 9, 21, 30].

In addition, in the new varieties created in wheat selection, the possibilities of the morphological and anatomical structure of the plant and the tissues serve to increase the number of grains in one ear [7, 15, 24, 26].

Arid 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 negative effect on the plant, causing a decrease in productivity and grain quality. Drought reduces the amount of organic matter accumulation in plants, slows down the growth of leaves, and reduces the working surface where the main photosynthesis takes place [5, 10, 19, 27].

One of the signs of resistance to drought of domestic spring bread wheat varieties created in our republic is regulation of transpiration phenomenon. With the arrival of dry, hot days, more moisture is used in the soil due to the increase in temperature and decrease in relative humidity. In order to conserve soil moisture, the maximum daytime transpiration in wheat occurs in the morning hours, and the transpiration event during the afternoon is significantly reduced [8, 13, 22, 32].

Many authors suggest that the optimal thickness (seeding interval) or feeding area of each variety is based on a number of biological characteristics of the plant (tolerance to dormancy, degree of flowering, ripening period, requirement for fertilizers, etc.), weight of 1000 grains, fertility, soil-climate and water - they emphasized that it depends on weather conditions, soil fertility level, previous crop, amount of applied fertilizer and others [1, 12, 18, 28].

Today, production in constantly changing natural-climatic, economic and technological conditions requires the improvement of cultivated plant varieties, including the characteristics of winter wheat with stable yield and drought resistance [3, 14, 20, 29].

The productivity of the studied varieties and rows of bread winter wheat was considered as the main indicator in the selection of varieties and was determined by harvesting plants from the entire part of the stalk. Yields were determined and the average yields of varieties and lines were determined for 3 repetitions.

Productivity was 63.3 c/ha in the Shams variety and 56.5 c/ha in the Krasnodarskaya-99 variety. According to the results of statistical mathematical analysis, it was observed that the productivity of varieties and lines was in the range of 54.2-91.3 tons/ha. According to the results of statistical analysis according to B.A.Dospekhov's method, the error level between yield returns was 2.2 ts/ha or 3.3

percent.

Differences in productivity compared to the Shams variety were determined and divided into 3 groups according to the differences. These groups included varieties and lines with higher, equal and lower yields than the model Shams variety. According to the results of the analysis, it was found that there are 11 high-yielding, 4 equal, and 3 low-yielding lines of the sample Shams variety. The highest productivity was observed in the KR20-BWF5IR-2463 ridge 91.3 c/ha, KR21-28FAWSA-44 80.8 c/ha, KR21-28FAWIR-106 77.4 c/ha.

Leaf chlorophyll contents of varieties and lines were also evaluated in a competitive cultivar trial of winter bread wheat.

Table 1

Grain yield of varieties and lines and leaf chlorophyll content.

№	Name of Genotipes	Grain yield, c/ha	The difference from the local check Shams			The amount of chlorophyll in a leaf, %		
			c/ha	%	Group	Chlorophyll, 20.04.23	Chlorophyll, 01.05.23	Chlorophyll, 10.05.23
1	Shams (Check-New)	63.3	0.0	0.0	II	52.5	45.3	35.2
2	Krasnodar-99 (Check-Benchmark)	56.5	-6.8	-10.8	III	52.8	48.6	38.4
3	GL19FWW-AWYT-277	64.4	1.1	1.7	II	57.3	52.2	32.9
4	KR20-LBWPYT-145	69.5	6.2	9.7	I	51.1	45.9	35.6
5	KR20-LBWPYT-092	56.1	-7.3	-11.5	III	47.4	43.0	37.7
6	KR20-BWF5IR-2463	91.3	28.0	44.2	I	51.8	48.4	41.8
7	KR20-BWF5IR-2644	71.3	7.9	12.6	I	46.1	42.9	32.6
8	KR20-BWF5IR-2435	75.6	12.3	19.4	I	47.3	45.2	35.9
9	KR20-BWF5IR-3150	76.2	12.8	20.3	I	52.7	50.1	42.4
10	KR20-BWF5IR-2113	61.3	-2.0	-3.2	II	56.5	53.2	42.8
11	KR20-27-FAWIR-39	60.5	-2.8	-4.5	III	51.5	45.8	37.7
12	KR20-27-FAWIR-142	65.3	2.0	3.2	II	45.6	42.9	33.7
13	KR21-28FAWIR-60	68.5	5.2	8.2	I	47.7	44.1	36.9
14	KR21-28FAWIR-106	77.4	14.1	22.3	I	51.3	48.8	39.8
15	KR21-28FAWSA-44	80.8	17.4	27.6	I	44.8	42.2	34.2
16	KR21-28FAWIR-44	66.7	3.3	5.3	I	47.4	44.1	35.9
17	24IWWYT-IR-9808	69.1	5.8	9.1	I	52.9	49.1	41.6
18	24IWWYT-IR-9809	70.8	7.4	11.8	I	46.4	41.2	32.5
19	24IWWYT-IR-9811	54.2	-9.1	-14.4	III	52.5	50.9	42.7
20	24IWWYT-IR-9823	62.4	-0.9	-1.5	II	48.7	46.2	35.8
	Minimum	54.22				44.8	41.2	32.5
	Mean	68.06				50.2	46.5	37.3
	Maximum	91.33				57.3	53.2	42.8

LSD (0.05)	2.2
LSD (0.05) %	3.3
CV %	2

The amount of chlorophyll was measured 3 times after the varieties and lines were fully spiked. Measurements were repeated every 10 days. The first measurements were carried out on April 20, and the amount of chlorophyll in the leaves of varieties and lines was 44.8-57.3 percent.

The second measurement was carried out on May 1, and it was observed that the amount of chlorophyll in the leaf decreased slightly. In the second measurement, the amount of chlorophyll was 41.2-53.2 percent.

The third measurement was carried out on May 10, and the amount of chlorophyll in the leaf was 32.5-42.8 percent. According to the measurement results, it was found that the amount of chlorophyll in 5 lines is higher than that of the model varieties and is preserved for a longer period.

Table 2

Varieties and lines weight 1000 grains.

№	Name of Genotipes	1000 grains weight, g				The difference from the local check Shams		
		Rep-1	Rep-2	Rep-3	Mean	c/ha	%	Group
1	**Shams (Check-New)**	42.1	40.2	41.8	**41.4**	0.0	0.0	II
2	**Krasnodar-99 (Check-Benchmark)**	38.2	37.2	38.4	**37.9**	-3.4	-8.3	III
3	GL19FWW-AWYT-277	48.4	49.4	51.2	**49.7**	8.3	20.1	I
4	KR20-LBWPYT-145	42.1	41.3	41.4	**41.6**	0.2	0.6	II
5	KR20-LBWPYT-092	51.8	50.6	49.2	**50.5**	9.2	22.2	I
6	KR20-BWF5IR-2463	48.6	46.1	45.4	**46.7**	5.3	12.9	I
7	KR20-BWF5IR-2644	46.2	46.2	45.8	**46.1**	4.7	11.4	I
8	KR20-BWF5IR-2435	38.4	40.1	39.6	**39.4**	-2.0	-4.8	III
9	KR20-BWF5IR-3150	40.2	40.1	41.3	**40.5**	-0.8	-2.0	II
10	KR20-BWF5IR-2113	44.4	43.2	43.9	**43.8**	2.5	6.0	I
11	KR20-27-FAWIR-39	45.6	48	45.8	**46.5**	5.1	12.3	I
12	KR20-27-FAWIR-142	46.2	48.8	47.6	**47.5**	6.2	14.9	I
13	KR21-28FAWIR-60	44.8	44.6	44.6	**44.7**	3.3	8.0	I
14	KR21-28FAWIR-106	38.8	40.8	39.6	**39.7**	-1.6	-3.9	III
15	KR21-28FAWSA-44	37.6	37.2	38.8	**37.9**	-3.5	-8.5	III
16	KR21-28FAWIR-44	42.8	42.3	41.8	**42.3**	0.9	2.3	II
17	24IWWYT-IR-9808	44.8	43.8	45.4	**44.7**	3.3	8.0	I
18	24IWWYT-IR-9809	42.2	41.8	40.7	**41.6**	0.2	0.5	II
19	24IWWYT-IR-9811	51.8	51.8	50.3	**51.3**	9.9	24.0	I
20	24IWWYT-IR-9823	38	38	37.6	**37.9**	-3.5	-8.5	III

Minimum	**37.9**
Mean	**43.6**
Maximum	**51.3**
LSD (0.05)	**1.59**
LSD (0.05) %	**3.64**
CV %	**2.2**

1000-grain weight of varieties and lines was determined in a competitive nursery of winter bread wheat. It was observed that the weight of 1000 grains of the studied 20 varieties and lines was in the range of 37.9-51.3 g. The average of 20 varieties and ranges was 43.6 g. It was found that the weight of 1000 grains was 41.4 g in Shams variety and 37.9 g in Krasnodar-99 variety. According to the results of the statistical analysis, it was found that 10 lines are higher, 4 lines have the same index, and 4 lines are lower in comparison to the Shams variety.

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