SELECTION OF EARLY MATURING AND HIGH YIELDING LINES OF DURUM WHEAT FOR IRRIGATED AREAS

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Abstract: Currently, the import of large quantities of pasta and confectionery products from foreign countries, which are necessary for the needs of the population, affects the state budget. The quality of grain grown often does not fully meet the requirements of the bakery, pasta and confectionery industries. One of the most pressing issues in agriculture is the creation of new high-yielding, fast-maturing, dormant and disease-resistant varieties in the cultivation of durum wheat. The article is based on the study of new forms of hybrid lines to create early-maturing and yielding varieties of durum wheat.

Key words: durum wheat, variety, lines, early maturity, grain yield.

The existing wheat varieties created by breeders are required to maintain their high yield, disease and pest resistance in different climatic conditions of the year, as well as high quality indicators in the competitive varietal testing nursery of durum wheat [5, 8, 11, 19, 23, 29, 32, 38, 43, 47, 54, 55, 56].

The high protein content and high gluten content of durum wheat ensure that pasta made from it is yellow-gold or lemon-colored and does not crumble during cooking [6, 9, 13, 16, 22, 26, 34, 36, 41, 48, 53, 57, 58, 59].

Durum wheat is the only and irreplaceable raw material for the production of pasta and wheat bran. It has original properties compared to other wheat products: high transportability, taste and nutritional quality even when stored in a dry place for a long time, ease of cooking in a minimum time, relatively low cost, versatility, dietary product for patients [1, 4, 12, 17, 24, 27, 31, 37, 42, 46, 51, 60, 61, 62].

Depending on the natural-climatic conditions of each region, it is necessary to create new varieties with a new genotype, high yields, alternate yields and good quality [2, 7, 15, 20, 21, 28, 33, 39, 44, 49, 63, 64, 65].

Development and introduction of new varieties of durum wheat requires high heat, drought tolerance and high yield elements [40, 45, 50, 52, 66, 67, 68].

Increasing wheat production to meet protein demand, improving the structure of arable land, efficient use of mineral and organic fertilizers, the use of high agronomic techniques, can be achieved with varieties with high protein content [3, 10, 14, 18, 25, 30, 35,].

Durum wheat varieties are less resistant to drought, high temperatures, yellow and brown rust and black spot disease than soft wheat varieties, and are distinguished by the fact that the grains in the ears do not spill when ripe.

20 durum wheat varieties and lines were selected as the object of study. Krupinka variety, which is planted for irrigated areas, was taken as a standard variety. In Experiment 3, the crop area was planted at 10 m2.

Field experiment was conducted in the Karshi experimental field of the Kashkadarya branch of the Scientific Research Institute of Cereals and Legumes. 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). Statistical analyzes were performed based on the method of B.A. Dospekhov (1985). The coefficient of interdependence of characters is calculated on the basis of the method of P.V. Terentev (1959). The field experimental scheme in the study was based on the Complete block design and Alpha lattice design of the Genestat 3 program.

The experiment was sown on October 22 at the expense of 5 million germinated seeds. Irrigation with seed water was carried out to fully recover the planted varieties. According to the results of phenological observations, germination of varieties and lines occurred from 1 to 2 November. The accumulation phase was observed on November 30 in 3 lines, and on December 1-3 in the remaining 17 cultivars and lines. The piping phase lasted from February 27 to March 6.

The maturing period of the variety and lines is the most favorable stage for the separation of early maturing lines. In the experiment, it was noted that the grazing phase of the varietal lines began a little earlier, depending on the weather, and lasted from 4 to 16 April. While the standard Krupinka variety entered the germination phase on April 9, 9 lines entered the early stage, 8 lines entered the late stage, and 2 lines entered the germination phase at the same time as the standard variety.

The maturing period was from May 25 to June 4, and the growth period was found to be 204 to 215 days. While the standard Krupinka variety entered the full maturing phase on May 29, 16 lines were found to ripen earlier than the standard variety. KR17_DurumYT_Entry-18, KR17_DurumAgro_Entry-3, KR17_DurumYT_Entry-15, KR17_DurumYT_Entry-16 lines were assessed as early maturing and were found to have entered the full maturing phase on 25 May.

Table 1
Results of phenological observation and biometric measurements of varieties and lines (Karshi, 2018).

№	Name	Heading date	Days to heading date	Maturity date	Days to maturity date	Plant height, cm	Peduncle length, cm	Spike length, cm	Number of spikelets	Grain yield, c/ha
1	KR17_DurumAgro_Entry-3	8 апр	158	25 май	205	86,0	39,3	6,3	17	75,4
2	KR17_DurumAgro_Entry-7	9 апр	159	28 май	207	91,3	38,7	5,3	17	85,8
3	KR17_DurumAgro_Entry-16	8 апр	157	26 май	205	89,7	43,0	6,0	17	83,2
4	KR17_DurumAgro_Entry-	13 апр	163	28 май	209	96,0	39,3	6,0	17	75,0

	18									
5	KR17_DurumAgro_Entry-19	10 апр	160	31 май	211	90,7	36,3	5,7	16	82,0
6	KR17_DurumAgro_Entry-20	9 апр	159	27 май	207	92,3	36,3	6,7	17	77,2
7	KR17_DurumYT_Entry-2	7 апр	157	26 май	206	89,0	35,0	6,0	18	87,3
8	KR17_DurumYT_Entry-3	5 апр	155	26 май	206	81,7	35,7	5,3	15	85,1
9	KR17_DurumYT_Entry-7	5 апр	155	26 май	206	94,7	36,7	7,0	18	73,9
10	KR17_DurumYT_Entry-14	10 апр	160	27 май	206	102,7	43,3	8,3	19	82,7
11	KR17_DurumYT_Entry-15	4 апр	153	25 май	204	88,0	44,3	6,3	17	62,3
12	KR17_DurumYT_Entry-16	5 апр	155	25 май	205	76,0	37,0	5,7	15	62,5
13	KR17_DurumYT_Entry-18	4 апр	154	25 май	204	95,3	41,0	6,7	17	74,8
14	KR17_DurumYT_Entry-19	7 апр	156	26 май	205	79,7	38,0	5,3	15	81,8
15	KRDW17-1	13 апр	162	4 июн	215	96,0	34,3	7,3	21	81,5
16	KRDW17-2	16 апр	165	1 июн	212	90,0	32,7	6,7	17	71,7
17	KRDW17-3	11 апр	162	26 май	206	86,7	36,7	5,7	16	69,0
18	KRDW17-4	10 апр	160	28 май	208	82,3	37,3	5,3	17	74,8
19	KRDW17-5	10 апр	160	28 май	208	91,7	40,0	7,7	19	78,0
20	Krupinka (андоза)	9 апр	159	29 май	208	94,0	32,3	7,3	20	73,4
	Mean	8 апр	158	27 май	207	89,7	37,9	6,3	17,1	76,9
	Maximum	16 апр	165	4 июн	215	102,7	44,3	8,3	20,7	87,3
	Minimum	4 апр	153	25 май	204	76,0	32,3	5,3	14,7	62,3
	$LSD_{0.5}$		3,49		2,01	3,38	2,83			1,02
	$LSD_{0.5}$ %		2,2		1,0	3,8	7,5			1,3
	CV%		1,3		0,6	2,2	4,4			0,8

The height of the varieties studied in the study has a significant impact on high yields. Stunted varieties have a sharp decline in yield and grain quality in drought conditions. Therefore, the choice of varieties with long plant height in irrigated areas is one of the main features.

According to the results of the study, the height of the varieties ranged from 76.0 to 102.7 cm. It was found that the number of short-stemmed lines with a plant height of less than 80 cm was 2. It was noted that the plant height of the remaining cultivars and lines ranged from 90 to 102.7 cm.

When the relationship between plant height and yield was studied, it was found that there was a positive correlation between r = 0.25. From the above, it can be seen that the height of the plant had a great influence on the high yield of the elements.

In order to determine the yield of varieties, harvesting was carried out on a special selection combine. The average yield of returns was calculated and the yield of the cultivars and lines studied ranged from 62.3 to 87.3 ts / ha. In the experiment, it was found that the yield of Krupinka variety, taken as a standard variety, was 73.4 ts / ha, and the yield of 15 lines was higher than the standard variety. According to the results, the KR17_DurumYT_Entry-2 ridge showed a high yield of 87.3 ts / ha, the KR17_DurumAgro_Entry-7 ridge 85.8 ts / ha, the KR17_DurumYT_Entry-3 ridge 85.1 ts / ha, the KRDW17-1 ridge 81.5 ts / ha. .

In conclusion, it should be noted that from the studied durum wheat lines (KR17_DurumYT_Entry-18, KR17_DurumYT_Entry-3, KR17_DurumYT_Entry-19,

KR17_DurumYT_Entry-2, KR17_DurumAchro_Entry) were transferred to Agroecological yield trial.

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