UOT: 633.511:632.4:631.527.52(575.1)

RESULTS OF COMPETITION (COMPETITION) VARIETY TESTING OF COTTON LINES

Mirxamidova Gavxaroy Maxmudjanovna

A basic doctoral student of the Andijan Institute of Agriculture and Agrotechnologies

Annotation: The article presents the results of the competition (competition) variety testing of cotton lines. Based on the results of the research, it is considered appropriate to use the T-5, T-12, T-8 lines created in practical selection processes to improve valuable economic traits.

Keywords: cotton, competition variety testing, early maturity, verticillosis wilt, cotton weight per boll, productivity per plant, fiber yield, fiber quality

Introduction. In our republic, research on tolerance to verticillium wilt is of great importance in the selection of cotton varieties. Because the creation of disease-resistant varieties is a guarantee of productivity. In turn, the high yield and quality of cotton fiber was considered relevant.

Of the 6 lines created as a result of the research, 3 were submitted for testing in a competition, that is, a competitive variety test, based on a set of valuable economic characteristics. The lines created in the competition variety test were planted and their level of damage by verticillium wilt was monitored.

According to Table 1, on July 1, damage was recorded from 0.8% (T-12, T-8) to 0.11% (T-5), on August 1, damage was recorded from 0.8% (T-8) to 1.0% (T-5), and on September 1, damage was recorded from 2.8% (T-8) to 3.0% (T-12).

The indicators of cotton ridges in the large-scale variety test for valuable economic characteristics are presented and analyzed in Table 1, and according to the results of the first year, it was noted that early ripening was from 113 days (T-5) to 115 days (T-12, T-8). The indicator for this characteristic from the standard variety was 125 days, and the created ridges were early ripening by 8-10 days. The weight of cotton per boll in the rows was 5.7 g (T-12), 5.8 (T-5) and 6.3 g (T-8), while in the standard variety it was 5.2 g. The productivity per plant was 87.6 g/plant in the T-12 row.

Table 1

Verticillium wilt tolerance of the created cotton rows in the competition variety test nursery

№	Tizmalar	Vertitsellyoz vilt bilan zararlanish, %		
		1.07	1.08	1.09
1.	T-5	0,11	1,0	2,9
2.	T-12	0,8	0,9	3,0
3.	T-8	0,8	0,8	2,8
4.	S-6524 (St)	0,24	2,2	5,6

The T-5 ridge was 90.3 g/plant, the T-8 ridge was 90.4 g/plant, and the standard variety had a characteristic index of 70.4 g/plant, and the ridges had an advantage of up to 20 g/plant. The fiber length was from 34.3 mm (T-5) to 34.5 mm (T-12), the fiber yield was from 38.5% (T-5) to 38.8% (T-8), and in turn, the standard variety had a fiber length of 34 mm and a fiber yield of 35%. According to the results of the second year of large-scale variety testing, the early maturity of the created ridges was from 112 to 114 days, while this indicator was 120 days in the standard variety (see Table 2). The weight of cotton in one boll was from 5.9 g to 6.5 g, and in the standard variety it was 5.5 g. The productivity of one plant was from 90.3 g/plant. (T-5) to 92.4 g/plant. (T-8), and in the standard variety this indicator was 79.4 g/plant. The fiber length indicator was from 34.6 mm (T-5) to 34.7 mm (T-12), and in the standard variety it was 34.2 mm, the fiber yield was from 38.5 % (T-12) to 38.9 % (T-8), and in the standard variety it was 36.7 %.

When analyzing the yield indicators of the “Mushtariy” (T-8) cotton variety in a large variety test, it was noted that in 2020-2022, the yield of the variety before frost was 39.2 t/ha on average over the years, which is 5.8 t/ha or 10.7% higher than the standard variety (33.4 t/ha) (see Table 3). The obtained indicators for fiber yield were also positive, with an average fiber yield of 14.3 t/ha on the T-8 line over the years, and 12.0 t/ha on the S-6524 variety, the difference between which was 2.3 t/ha or 19.6% fiber yield compared to the standard variety. The total cotton yield over the years was 39.1; The average yield was 39.2 s/ha, which is 4.6 s/ha or 13.2% higher than the standard S-6524 variety (34.6 s/ha), as reflected in the table data.

Today, special attention is paid to the micronaire index of the fiber in the world market. Another of the main indicators determining the quality of the fiber, the relative breaking length (Str) and the fiber length in inches (Len), are also important in determining the quality of the fiber.

The average micronaire index of the fiber in the standard S-6524 variety was 4.5 over the years, while in the "Customer" variety this indicator was 4.3, the difference was 0.2

Table 2

Indicators of valuable economic traits of cotton ridges in the large variety test

Andoza nav va tizmalar	Tezpisharlik, kun			Bitta ko‘sakdagi paxta vazni, g			Bir tup o‘simlikdagi mahsuldorlik, g/o‘sim.			Tola uzunligi, mm			Tola chiqimi, %		
	M±m	σ	V, %	M±m	σ	V, %	M±m	σ	V, %	M±m	σ	V, %	M±m	σ	V, %
Birinchi yilgi katta nav sinovi															
T-5	113±0,9	1,33	1,19	5,8±0,1	0,11	1,76	90,3±1,8	2,49	2,76	34,3±0,1	0,09	0,24	38,5±0,1	0,12	0,30
T-12	115±1,33	1,89	1,64	5,7±0,07	0,11	1,85	87,6±2,23	3,17	3,83	34,5±0,15	0,2	0,64	38,6±0,08	0,12	0,31

											2				
T-8	115±1,4	2,05	1,76	6,3±0,1	0,13	2,38	90,4±2,3	3,32	3,98	34,5±0,1	0,22	0,50	38,8±0,1	0,12	0,31
S-6524 (st)	125±1,3	1,89	1,51	5,2±0,1	0,09	1,81	70,4±1,6	2,32	3,30	34,0±0,1	0,16	0,39	35,0±0,5	0,23	0,66
Ikkinchi yilgi katta nav sinovi															
T-5	112±0,9	1,33	1,19	5,9±0,1	0,11	1,76	90,3±1,8	2,49	2,76	34,6±0,1	0,09	0,24	38,5±0,1	0,12	0,30
T-12	114±1,33	1,89	1,64	6,0±0,07	0,11	1,85	91,6±2,23	3,17	3,83	34,7±0,15	0,22	0,64	38,7±0,08	0,12	0,31
T-8	114±1,4	2,05	1,76	6,5±0,1	0,13	2,38	92,4±2,3	3,32	3,98	34,6±0,1	0,22	0,50	38,9±0,1	0,12	0,31
S-6524 (st)	120±1,3	1,89	1,51	5,5±0,1	0,09	1,81	79,4±1,6	2,32	3,30	34,2±0,1	0,16	0,39	36,7±0,5	0,23	0,66

Table 3

Valued economic and biological properties of the T-8 line studied in a large variety trial nursery

Ko‘rsatkichlar	**O‘lchov birligi**	**“T-8”**			**O‘rtacha**	**Andoza S-6524**			O‘rta-cha	Andoza-dan farqi
		2020	2021	2022		2020	2021	2022		
Sovuq tushguncha hosildorlik	s/ga	37,2	38,8	35,1	37,0	34,2	32,6	33,6	33,4	+10,7 %
Umumiy hosildorlik	s/ga	39,1	41,1	37,4	39,2	34,9	33,3	35,6	34,6	+13,2 %
Tola hosildorligi	s/ga	14,7	13,2	15,1	14,3	12,4	11,3	12,3	12,0	+19,6 %
Tola chiqimi	%	38,0	38,5	38,1	38,2	35,4	34,0	34,6	34,6	+10,4

Tola uzunligi	mm	33,8	34,5	33,7	34,5	34,7	33,2	33,4	33,4	+0,6
Tola pishiqligi	g/kuch	4,6	4,4	4,6	4,5	4,6	4,4	4,5	4,5	0,0
Metrik raqami	mn	5910	5680	5930	5840	5780	5660	5920	5786	+54
Mikroneyr ko‘rsatkichi	mic	4,3	4,2	4,4	4,3	4,5	4,6	4,5	4,5	-0,2
Uzilish uzunligi	g.k./teks	27,2	25,4	27,7	26,8	26,6	24,9	26,6	26,0	+0,8
Amal davri	kun	117	118	117	117	123	125	124	124	-7,0
Bir dona ko‘sak vazni	g	6,3	5,8	5,9	6,0	5,5	5,3	5,2	5,3	+0,7
Vertitsellyoz vilt bilan zararlanishi, umumiy	%	4,1	4,2	4,0	4,1	11,7	11,1	10,9	11,2	-7,1
1000 dona chigit vazni	g	118	119	117	118	119	118	117	118	0

It was noted that all the quality indicators of the fiber studied in the experiment were higher in the new “Mushtariy” variety. In particular, the fiber fineness (metric number) in the “Mushtariy” variety was around 5840 in proportion to the years, while in the standard S-6524 variety it was 5786 mn, and the difference was 54 mn.

The fiber yield was 3.2% higher than the standard variety, the fiber length was 0.5 mm, the breaking length was 0.8 g.k./tex, and the fiber met the requirements of type IV. The “Mushtariy” variety ripened 7 days earlier than the standard. The weight of cotton in one boll was 0.7 g higher, the weight of 1000 seeds showed the same result as the standard variety, and it was found that it was damaged by wilt by 7.1%.

In conclusion, it should be noted that the created cotton lines T-8, T12, T-5 were noted to be resistant to verticillium wilt in the competition variety test nursery. According to observations on a number of valuable economic traits, the superiority of the T-5 line in terms of early maturity, cotton weight in one boll, productivity in one bush, fiber yield and quality of the T-8 line was determined. The superiority of the T-8 line over the standard S-6524 variety was demonstrated for all valuable economic traits of the large variety test.

It is advisable to use the created lines in practical selection processes to improve valuable economic traits.

References

1.J.Akhmedov, A.Nuriddinov, G.Rakhmatullayev, A.Rakhimov, G.Mirkhamidova. "Early maturity, wilt resistance traits and some economic and valuable indicators of F3 hybrid generations" Proceedings of the Republican Scientific and Practical Conference on the topic "Integration of Science and Practice: Problems and Prospects" held at the Institute of Genetics and Experimental Biology of Plants of the Academy of Sciences of the Republic of Uzbekistan. Tashkent-2018. 218-220 p.

2. Akhmedov J.Kh. "Creation of new varieties with heterosis properties using interspecific crossing methods." Scientific foundations of the development of cotton and grain growing on farms, Tashkent, 2006. p. 48.

3. Kholmurodova G.R., Rasulov I.M., Jo'raev S.T., Toreev F.N. Cotton selection and seed production. Textbook Lesson press publishing house. Tashkent, 2021. 330 p