

COMPARATIVE CHARACTERIZATION OF COTTON GENETIC COLLECTION LINES WITH THE C-6524 VARIETY FOR VALUABLE ECONOMIC TRAITS

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Abstract: Today, the creation of high-yielding varieties of cotton with high quality and quantity indicators that can meet modern production requirements worldwide remains an important task for geneticists and breeders.

Key words: hybridization, line, fiber yield, fiber index, reciprocal, template

Today, the creation of high-yielding varieties of cotton with high quality and quantity indicators that can meet modern production requirements worldwide remains an important task for geneticists and breeders.

For the further development of the Republic of Uzbekistan, breeders have been tasked with creating varieties that are fast-maturing, high-yielding, meet world standards in fiber quality and quantity, and have a fiber yield of more than 40 percent.

Taking this into account, we created a number of breeding items through various hybridizations in order to create a new variety with a fiber yield of more than 40 percent, a fiber index of 1000 seed weight, and a high cotton weight in one boll.

The new lines created as a result of hybridization and selection were compared with the standard variety C-6524 for some economic characteristics. The comparison focused mainly on the most important characteristics, such as fiber yield and index, 1000-seed weight, and cotton weight in one boll.

According to the results obtained, the new lines differed sharply from the standard C-6524 in terms of fiber yield. The fiber yield in the L-722 line was -37.4%, in the L-750 line - 42.8%, and in the L-751 line - 40.4%, and the standard C-6524 line

was superior by 5% to 20%, while the L-720 (21.5%) and L-721 (23.2%) lines, on the contrary, lagged behind the standard C-6524 in fiber yield by 40–35%.

Average values of fiber index in L-722, L-750 and L-751 lines are 1.6 – 2.1 g compared to the model C-6524 variety. is higher, and the advantage is from 29% to 37.5%. The L-720 and L-721 lines are 2.9 -2.0 g higher than the model C-6524 variety according to the average indicators of the fiber index. differed by 51.79 and 35.72%.

The indicator of the 1000-grain weight of the Tsimba variety C-6524 (122.4 g.) was higher than that of the new L-720 (97.8 g.), L-721 (103.4 g.), L-722 (115.3 g.), L-750 (108.9 g.) and L-751 (114.6 g.) lines, and the superiority of the Tsimba variety over the lines ranged from 6% to 20%.

According to the indicators of the weight of cotton in one bag, the model S-6524 variety (5.26 g) is better than the L-722, L-750 and L-751 lines (6.76 g, 6.51 g and 6.63 g, respectively).) lagging behind (predominance from 24% to 28.5%), lines L-720 and L-721 model Compared to the C-6524 variety (2.76 g. and 3.48 g., respectively), it showed a low result, and the difference from the model variety was 47.53% and 33.84%.

Thus, as a result of selection and self-crossing among plants of the reciprocal hybrid combinations G2L-489xL-70, F₂L-15xL-70, F₂L-15xL-608 and F₂L-39xL-15, the lines L-720, L-721, L-722, L-750 and L-751, which reached the line level at the 6-7 th stage, were compared with the standard variety C-6524.

Comparative characterization of cotton genetic collection lines with the C-6524 variety for valuable economic traits

№	type and line	raw hair.	fiber output		fiber index		1000 grain weight		weight of cotton in one sack	
			%	%	г	%	г	%	г	%
1	S-6524	OS	35,7±0,4	100	5,6±0,2	100	122,4±0,9	100	5,26±0,1	100
2	L-720	GS	14,5±0,3	40,6	2,7±0,1	48,2	97,8±0,8	80,2	2,76±0,1	52,47
3	L-721	GS	23,2±0,4	65,0	3,6±0,2	64,3	103,4±0,6	84,8	3,48±0,1	66,16
4	L-722	OS	37,4±0,4	104,7	7,2±0,1	128,6	115,3±0,8	94,5	6,76±0,1	128,5

5	L-750	OS	42,8±0,3	119,9	7,7±0,1	137,5	108,9±0,9	88,9	6,51±0,1	123,8
6	L-751	OS	40,4±0,3	113,2	7,3±0,1	130,4	114,6±1,	93,6	6,63±0,1	126,1

According to the obtained results, the L-720 and L-721 lines with GS-type hairiness sign on the seed had higher fiber yield and index, 1000 seed weight and cotton weight in one boll (40-35%, 51.8-35.7%, respectively) , 20 -15% and 47.5 - 33.8%) sample lagged behind S-6524 variety, OS-type L-722, L-750 and L-751 lines with the same hairiness sign on the seed, except for the 1000 seed weight sign, fiber yield and index, according to the weight of cotton in one boll (respectively 5-20%, 29-37.5 % and from 24 to 28.5%) had a higher index than sample S-6524.

The conclusion is in order.

1. Lines L-720 and L-721 with GS-type seed hairiness lag behind the sample S-6524 by 14.2 and 12.5% in terms of fiber yield, OS-type L-722, L-750 and L-751 lines have 1.7%, 7.1% and 5.7% more fiber output compared to the model variety, respectively.

2. Analogously, according to the fiber index, lines L-720 and L-721 are 2.9 and 2 g of the model S-6524 variety. L-722, L-750 and L-751 lines have a low average value of 1.6 g, 2.1 g and 1.7 g compared to the sample variety. has a high average value of .

3 Lines L-720, L-721, L-722, L-750 and L-751 with GS and OS-type seed hairiness were 24.6 g, 19.0 g, respectively, of the model S-6524 in 1000 seed weight. 7.1 g, 13.5 g and 7.8 g have low averages.

4. Lines L-720 and L-721 with GS-type seed hairiness compared to S-6524 sample variety in terms of cotton weight per bag are 2.5 g. and 1.8 g. , and L-722, L-750 and L-751 lines are 1.5 g, 1.2 g and 1.4 g, respectively. It was found to have a lot of cotton weight.

5. The L-720 (iift1ft1ft₂ft₂fcfc) and L-721 (iift1ft1ft₂ft₂FcFc) lines, whose genotypes for hairiness on the grain surface have been determined, can be a starting source for identifying genes controlling fiber and hair inheritance, while the L-722, L-750 and L-751 (genotypes - iiFt₁Ft₁Ft₂Ft₂FcFc) lines can be a starting source for creating new varieties with valuable economic characteristics.

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