FORMATION OF FIBER QUALITY INDICATORS IN COTTON FAMILIES

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Abstract. The article presents the results of the formation of fiber quality indicators in cotton families.

Key words: Fiber quality, fiber length, variation, dominant, transgression, recessive, hybrid, fertilization, type

Enter. The length of the cotton fiber is very variable depending on the conditions of cotton care, irrigation, fertilization, temperature regime and so on. The length of the fiber varies in the pods and even in the seed, depending on the location of the pod in a single plant. The difference in the seed can be up to 5 mm. The fibers are usually the longest in the pods in the middle part of the bush, in the seed located in the center of the pods, in the chalazae part of the seed. Genetic analysis should take this variability into account. The heredity of cotton fiber length has been studied since the beginning of the 20th century. Cotton is grown for its fiber, so there is great interest in the length of the fiber.

The fiber length in the first joint of the hybrids obtained as a result of interspecies and intraspecies crossing is intermediate and changes towards the parent with more long fibers. When long-fibered varieties are crossed, hybrids show heterosis for this trait, that is, their fiber may be longer than that of the parent. In the hybrids of the second joint, the fiber length is intermediate compared to the parental form. Generally, compared to the average values, the fibers of F_2 hybrids are shorter than those of F1 hybrids. In the second and subsequent generations, plants with slightly longer fibers than the parent forms can be separated, that is, transgressive separation occurs. There are many examples of long fiber plants obtained by transgressive selection.

According to Table 1, in 2018, the standard S-6524 variety index was 33 mm, in convergent families based on the principle of transgressive recombination, the staple length of the fiber was from 32.6 mm (O-32/35) to 33.2 mm (O-85 /90) was noted

According to the data of 2019, in convergent families based on the principle of transgressive recombination, the fiber staple length is mainly 33.2 (O-329/30)-33.9 mm (O-32/35), only in the O-85/90 family it is 34, A fiber length of 4 mm was recorded. The amplitude of variability was from 4.51% (O-85/90) to 5.15% (O-32/35). In convergent families based on the principle of combined transgressive recombination and incomplete recombination, families with fiber staple length from 33.2 mm (O-521/25) to 34.8 mm (O-634/35) were recorded. Their variation amplitude was from 4.70 (O-634/35) to 6.09 (O-630/32).

As of 2020, the model S-6524 (33.7 mm) variety from 0.34 mm (O-325/26-34.04 mm) to 2.16 (O-32/35 -35.86) 2 mm advantage was shown. In convergent families based on the principle of transgressive recombination, the staple length of the fiber is from 34.04 mm (O-325/26) to 35.86 mm (O-32/35), and the amplitude of variation is from 2.05 % (O-85/90) It was up to 3.50% (O-329/30). In convergent families based on the principle of combined transgressive recombination and incomplete recombination, from 35.2 mm (O-521/25) to 35.6 mm (O-634/35) results up to The amplitude of variability in this variant convergent families was from 2.45% (O-521/25) to 4.33% (O-388/91). Convergent families of both options were superior to the model by sign.

In conclusion, it should be noted that according to the results of the three-year analysis, from the O-85/90 and O-634/35 families, O-521/25, O-388/91, O-32/35, O- It is appropriate to use 329/30 families in genetic-selection studies. It is appropriate to use families in genetic-selection studies.

Table 1

Fiber length parameters in complex and convergent families of cotton

Families	Origin of families	M±m	σ	V%	M±m	σ	V%	M±m	σ	V%
		2018 year			**2019 year**			**2020 year**		
1	2	3	4	5	6	7	8	9	10	11
Convergent families based on the principle of transgressive recombination										
S-6524 model grade		33,0±1,18	1,67	5,06	33,1±1,20	2,22	4,03	33.7±0.58	1.93	2.11
О-32/35	СГ-1	32,6±1,17	1,66	5,04	33,9±1,19	2,69	5,15	34.86±0.48	2.16	2.38
О-85/90	СГ-5	33,2±1,05	1,49	4,56	34,4±1,03	2,46	4,51	35.09±0.64	1.29	2.05
О-325/26	ВК-5	33,0±1,22	1,73	5,20	33,3±1,04	2,47	4,61	34.04±0.1	1.14	3.41
О-329/30	ВК-5	32,9±1,22	1,73	5,25	33,2±1,11	2,58	4,74	34.8±0.56	1.48	3.50
ЭКФ $_{0,5}$=		0,95			0,80			0,75		
Convergent families based on the principle of combined transgressive recombination and incomplete recombination										
О- 388/91	К-4	33,1±1,21	1,72	5,20	34,0±2,48	2,06	5,95	34.7±0.35	1.46	4.33
О- 521/25	К-6	32,1±1,27	1,80	5,49	33,2±2,58	2,94	5,77	35.2±0,10	1.14	2.45
О-20/19	К-3	33,0±1,20	1,70	5,21	34,0±2,40	2,06	4,90	34.8±0.30	1.45	3.30
О-630/32	К5хК6	32,2±0,92	1,31	4,05	33,5±2,47	3,2	6,09	34.5±0.67	1.03	3.24
О-634/35	К1хК2	34,0±0,82	1,17	3,64	34,8±2,43	2,0	4,70	35.6±0.49	1.02	3.39
ЭКФ $_{0,5}$=		0,92			0,82			0,75		

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