Volume: 5 | Issue: 11 | November 2019 || SJIF Impact Factor: 5.614||ISI I.F Value: 1.188 ISSN (Online): 2455-3662

EPRA International Journal of
Multidisciplinary Research (IJMR) *Peer Reviewed Journal*

INHERITANCE TRAITS OF FIBER OUTPUT AND LENGTH ON GEOGRAPHICALLY-DISTANT F_3 HYBRIDS OF COTTON

T.H.Khamidullaev
Cotton breeding,
seed-production and agrotechnologies
research insitute.
111218, Tashkent region,
Uzbekistan,

I.G.Amanturdiyev
Cotton breeding,
seed-production and agrotechnologies
research insitute.
111218, Tashkent region,
Uzbekistan,

Sh.E.Namazov
Cotton breeding,
seed-production and agrotechnologies research insitute.
111218, Tashkent region,
Uzbekistan,

ABSTRACT

In this article presents data of the heritability of the yield (%) and fiber length (mm) in F_3 hybrids obtained by hybridization of the ecological and geographical distant forms of cotton, that is, the crossing of medium-fiber varietal samples of the United States. Recombinant plants with high fiber yields can be selected in depth by cross-section of various US varieties. It is recommended to use US samples - 0774-3-3, line 45-2-1-2-37, to increase the length of the fiber, including inside G.hirsutum L., geographically distant forms, that is, varieties of the United States. It was found that from the second and third generation of hybrids obtained by crossing, it is possible to isolate recombinant plants with high yield and fiber length. According to the results of the study, it is advisable to use US variety samples to improve yield and fiber length signs.

KEY WORDS: ***cotton, ecological and geographical, fiber yield, fiber length, variety, hybrid, heritability, individual selection.***

INTRODUCTION

It is well known that most cultivated cotton varieties are currently created by hybridizing specimens or varieties of similar ecological and geographical origin. The fact that some cotton varieties do not meet the requirements of the textile industry requires in-depth research and the creation of new cotton varieties with a good combination of fiber quality and other economic characteristics. The solution to this problem is to attract existing cultural, wild, semi-wild samples and ecological and geographical distances to the cotton collection and create genetically enriched selection genes based on the search for new donors and their hybridization with local varieties. current issues.

Many scientists have studied ecological and geographical long hybrids in cotton and have come to different opinions, as well as positive results. In particular, F_1 hybrids are in parental forms with crossed ropes and varieties that vary greatly in fiber quality [1]. When the ridges intersect, it is noted that the F_1 generation has the advantage of a certain shape.Cotton ssp. punctatum Study of the formation of the fiber length mark in hybrids obtained by the ssp. punctatum and local varieties [2], indicates that native varieties are high in ssp. In the sample subspecies ssp. punctatum marked low rates. In particular, a number of other scientists identified highly productive, fast-growing, highly productive and high-quality

screws, as well as a number of varieties and varieties of cotton that are resistant to various agricultural pests, cold and lack of water.

In the processes of reproduction, which focus on the length and quality of the fibers, it is necessary to take into account the heritability of characters and their strong variability under the influence of natural conditions [3]. The fiber yield is a polygenic mark, depending on the weight of the seeds and the number of fibers in the seeds [5]. When cultivating cotton, soil and weather conditions significantly affect the rate of fiber output [4].

MATERIAL AND RESEARCH METHODS

For many years, a large group of hybrids containing valuable economic traits has been created in the laboratory of "Genetics and Cytology of Cotton" of the Institute of Ecological - Geographic Long Formation.

As a result of many years of research, laboratory scientists have obtained new genetically differentiated long-term hybrids of cotton in the environment and are currently widely used in genetic research and in the creation of primary materials for selection processes. However, a number of new samples were imported from the United States in 2009, and laboratory staff received new F0 hybrid seeds based on local varieties. In these hybrids, it is important to create valuable source material for practical selection based on a comparative study of the heritability and variability of valuable traits for the main farm.

THE RESULTS OF THE STUDY

This article analyzes data on the study of fiber generation and heritability characteristics in the F3 generation of ecological-geographical distant hybrids created on the basis of cotton samples and local varieties from the USA (table 1).

Table 1. Inheritance traits of fiber output and length on geographically-distant F_3 hybrids of cotton

№	Parental forms and their progenies	Fiber output %	h^2/F_1-F_3	Fiber length, mm	h^2/F_1 -F_3
1	0774-3-3	35.3		36.3	
2	0808-1-6-1	33.3		34.7	
3	Raider –276	35.5		33.5	
4	Lonren – 1	35.9		31.8	
5	Lonren – 2	34.2		31.9	
6	Line 45-2-1-2-37	37.9		37.8	
7	BC_3S_1-47-8-1-17	39.8		30.2	
8	BC_3S_1 -1-6-3-15	35.2		30.8	
9	BC_3S_2 45-2-1-2	37.2		30.7	
10	F_3 (0774-3-3 x BC_3S_1 -1-6-3-15)	38.7	0.52	33.5	0.08
11	F_3 (0774-3-3 x BC_3S_1 -1-6-3-15)	36.4	12.0	33.2	-0.13
12	F_3 (0774-3-3 x BC_3S_2 45-2-1-2)	37.1	0.9	32.9	-0.2
13	F_3 (0808-1-6-1 x BC_3S_1-47-8-1-17)	38.8	0.7	32.6	0.07
14	F_3 (0808-1-6-1 x BC_3S_1 -1-6-3-15)	36.3	2.1	34.4	0.85
15	F_3 (0808-1-6-1 x BC_3S_2 45-2-1-2)	36.2	0.5	32.6	-0.05
16	F_3 (Raider –276 x BC_3S_1-47-8-1-17)	36.3	-0.36	34.3	1.5
17	F_3 (Raider –276 x BC_3S_1 -1-6-3-15)	36.8	7.5	34.6	1.8
18	F_3 (Raider –276 x BC_3S_2 45-2-1-2)	39.2	3.2	33.2	0.9
19	F_3 (BC_3S_1-47-8-1-17 x 0774-3-3)	32.3	-2.0	33.7	0.15
20	F_3 (BC_3S_1-47-8-1-17 x 0808-1-6-1)	33.9	8.3	33.1	0.3
21	F_3 (BC_3S_1-47-8-1-17 x Lonren – 1)	35.0	0.2	34.4	3.0
22	F_3 (BC_3S_1-47-8-1-17 x Lonren – 2)	39.9	1.03	32.1	1.2
23	F_3 (BC_3S_1 -1-6-3-15 x 0774-3-3)	37.5	2.3	33.1	-0.2
24	F_3 (BC_3S_1 -1-6-3-15 x 0808-1-6-1)	36.7	2.5	36.7	2.02
25	F_3 (BC_3S_1 -1-6-3-15 x Raider –276)	41.5	3.0	35.0	2.1
26	F_3 (BC_3S_1 -1-6-3-15 x Lonren – 1)	51.7	4.5	32.5	2.4
27	F_3 (BC_3S_1 -1-6-3-15 x Lonren – 2)	40.9	12.4	31.5	0.6
28	F_3 (BC_3S_1 -1-6-3-15xLine 45-2-1-2-37)	40.8	3.1	32.9	0.4
29	F_3(Lonren – 1x BC_3S_1-47-8-1-17)	39.3	0.75	33.2	2.75
30	F_3(Lonren – 1 x BC_3S_1 -1-6-3-15)	38.6	7.75	33.7	4.8
31	F_3(Lonren – 1x BC_3S_2 45-2-1-2)	38.5	2.8	32.4	2.1
32	F_3(BC_3S_2 45-2-1-2 x 0774 –3-3)	34.5	-1.7	34.7	0.4
33	F_3(BC_3S_2 45-2-1-2 x 0808-1-6-1)	36.3	0.55	35.0	1.15
34	F_3(BC_3S_2 45-2-1-2 x Raider –276)	36.7	0.44	35.3	2.3

35	F_3(BC_3S_2 45-2-1-2 x Lonren – 1)	38.0	2.1	33.6	4.3
36	F_3(BC_3S_2 45-2-1-2 x Lonren – 2)	38.1	1.6	33.2	3.2
37	F_3(BC_3S_2 45-2-1-2 x Line 45-2-1-2-37)	37.2	-0.75	34.6	0.1
38	F_3 (Lonren – 2x BC_3S_1-47-8-1-17)	38.5	0.5	33.5	2.9
39	F_3 (Lonren – 2 x BC_3S_1 -1-6-3-15)	35.0	0.6	32.5	2.1
40	F_3(Lonren – 2 x BC_3S_2 45-2-1-2)	39.2	2.33	32.2	3.5
41	F_3(Line 45-2-1-2-37x BC_3S_1-47-8-1-17)	37.8	-1.1	31.7	-0.06
42	F_3(Line 45-2-1-2-37 x BC_3S_1 -1-6-3-15)	39.4	2.1	31.7	-0.7
43	F_3(Line 45-2-1-2-37 x BC_3S_2 45-2-1-2)	38.8	3.25	33.5	-0.2

$SAD_{(05)}$ = 2,8 $SAD_{(05)}$ = 1,7

US Samples Line 45-2-1-2-37 and fiber yield BC3S1-47-8-1-1-17 37.9; 37.2% had the largest variation among the options. An analysis of heredity in third-generation fiber hybrids has shown that hereditary traits of hereditary traits manifest themselves differently in cases of extreme dominance, intermediate and negative heterozygous. On average, F3BC3S1-47-8-1-17 x 0774-3-3 was the lowest, and the combination F3 BC3S1-1-6-3-15 x Lonren-1 showed the highest results (30.2, respectively). ; 51.7). Residual F30774-3-3 x BC3S2 45-2-1-2, F3 BC3S1 -1-6-3-15 x 0774-3-3, F3 BC3S1 -1-6-3-15 x 0774-3-3, F3BC3S2 45-2-1-2 x Line 45-2-1-2-37, F3Line 45-2-1-2-37x BC3S1-47-8-1-17 hybrids - the best results in fiber output combinations (37, 1; 37.5; 37.2; 37.8%, respectively, which suggests that recombinant plants with high fiber yields can be selectively selected by cross-sectioning various varieties of medium fiber in the United States.

In the line 45-2-1-2-37, the line in the form of the parent fiber (37.8 mm) predominates. Most third-generation hybrids showed signs of heterozygosity and high grades due to the appearance of positive transgressive plants. The fiber length in third-generation hybrids is 31.7 mm (F3Line 45-2-1-2-37 x BC3S1 -1-6-3-15, F3Line 45-2-1-2-37x BC3S1-47-8-1 -17) to 36.7 mm (F3 BC3S1-1-6-3-15 x 0808-1-6-1).

CONCLUSIONS

In conclusion, we can distinguish recombinant plants with a high yield of fiber on the basis of one sample by crossing different varieties of medium fiber in the United States. US template 0774-3-3, line 45-2-1-2-237, is recommended to increase fiber length. Analysis of the results of the study showed that the isolated plants with a high fiber content and recombinant plants from hybrids of the second and third generations were obtained from interspecific, ecologically-geographically distant species of *G.hirsutum* L., i.e. from the USA. it was found out.

REFERENCES

1. *Khuzhamberganov N.M., Amanturdiev A., Kim R.G. G'o'zaning G.hirsutum L. turiga oid bolgan past boyli F1 duragaylarida tola sifatining irsiyati // For Genetici, Breeding, Uruchiligi and Bedachilik toplami. – Toshkent, 1993.- 30-34 B.*
2. *Ismoilov N.Kh., Saydaliev X., Tozhiboev A.M. Аниancing ssp. punctatum kenja turi ishtirokidagi F1 ў simliklarida tola chiimi wa uzunlining shakllanishi: "The state of cotton breeding and seed production and the prospects for its development" nomli khalkaro ilmiy-amaliy conference teplami (Toshkent, 2006 July 18 August). – Toshkent, 2006. –11–12 B.*
3. *Abdullaev A.A. Forming during cotton hybridization. // J.Uzbek biological journal. - Tashkent, 1967. No. 2.- S.62-65.*

4. Abdullaev A.A., Lemeshev K.K., Uzakov Yu.F. Mexican types of cotton.-Tashkent. "FAN". 1978.-39 p.

5. Efimenko V. M. The output of cotton fiber (species Goss. Hirsutum L.) and ways to increase it .: Abstract. diss. ... Candidate of Agricultural Sciences - Samarkand .: SamSHI. 1964 .-- 20 p.