

result of the selection work, the effect of their relative increase in the genotype in recent years can be observed from the results obtained in 2014-2015. possible

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Study of the manifestation of performances of economic traits in plants of several generations of cotton forms

Kahhorov Izzatulla Tilavovich, *dr.agr.sci., leading researcher*
Ergashev Orif Rakhmatullaevich, *dr.agr.sci., senior researcher*
Mutalov Abdusalom Abduazimovich, *independent researcher*
Zarlikov Azamat Sharapatdinovich, *independent researcher*

*Institute of Genetics and Plants Experimental Biology of SA of RUz. Tashkent region, Kibray district, Yukory-yuz coun.com.
E-mail: igebr_anruz@mail.ru*

Abstract: The article presents the results of the study of the phenotypic manifestation of the traits for cotton weight in one boll, fiber yield and fiber length performances of upland cotton varieties grown for the selection of initial sources in the scientific researches carried out in order to develop new hybrids of cotton. Comparative analysis of the phenotypic manifestation of the above-mentioned performances of economic traits in plants of three generations of the studied cotton forms in the years 2016-2018.

Key words: Cotton hybrids, initial materials, cotton weight in one boll, fiber yield and length, performances, genotype, phenotype, comparative analysis.

In the genetic-selection research conducted in order to isolate new cotton hybrids, it is important to carefully study the initial sources and to choose parental forms based on knowing in which aspects they differ from each other in terms of important economic traits performances. In this regard, the analysis of the phenotypic manifestation of the performances of economic traits of the initial materials in plants of several generations provides an opportunity to fully assess the indicators of the valuable economic traits of these materials. In the literature on this regard, special attention is paid to the extent to which the performances of the traits for cotton weight in one boll [1,4], fiber yield [2,5] and length [3] of cotton hybrids are reflected in the population phenotype.

The purpose of the research: Comparative analysis in order to select parental forms for new researches based on the study of the manifestation of some economic traits of the analyzed cotton varieties in the phenotype of three generations of plants.

The object of the research: Data showing the manifested performances of upland cotton varieties UzFA-703, UzFA-707, UzFA-710, UzFA-713 and Kelajak in the phenotypes of three generation plants.

The methods of the research: The population analysis method of genetics was used in conducting these studies. Mathematical statistical processing of the data was carried out according to the method of B.A. Dospekhov (M. 1985).

The results: Data reflecting the performances of some economic traits of the analyzed research materials are presented in the following tables:

Table-1

Data for economic traits as for 2016

№	Economic traits									
	Varieties	Cotton weight per boll, gr			Fiber yield, %			Fiber length, mm		
	in 2016									
		$\bar{X} \pm m$	Σ	v	$\bar{X} \pm m$	σ	v	$\bar{X} \pm m$	σ	v
1	UzFA-703	6,42±0.11	0.76	11.86	42.2±0,54	3.61	8.54	34.1±0.08	0.55	1.62
2	UzFA -705	5.58±0.10	0.69	12.40	40.3±0,50	3.30	8.18	34.1±0.12	0.78	2.27
3	UzFA -707	6.11±0.11	0.73	11.86	37.5±0,46	3.03	8.07	34.1±0.12	0.77	2.26
4	UzFA -710	5.77±0.10	0.64	11.11	40.8±0,38	2.50	6.13	34.4±0.09	0.63	1.83
5	UzFA -713	6.64±0.12	0.77	11.54	35.7±0,49	3.26	9.12	34.5±0.10	0.63	1.83
6	Kelajak	6.74±0.13	0.83	12.38	39.6±0,60	3.96	9.98	33.9±0.13	0.87	2.58

According to the data of table 1, in 2016, in terms of the trait of cotton weight per boll, Kelajak, UzFA-713 and UzFA-703 varieties showed similar indicators, and UzFA-710 and UzFA-705 varieties showed relatively low phenotypic manifestations. Although the scale of variation of the population according to the indicators of this trait was higher in UzFA-705 and Kelajak varieties compared to other varieties, no sharp differences were observed in any of the cotton forms. The highest indicators of fiber yield were observed in UzFA-703 variety, followed by UzFA-705 and UzFA-710 varieties. In other forms, it is reflected in less than 40%. Population variability was high in Kelajak and UzFA-713 varieties, and too low in UzFA-710 variety. It was found that the mean values of the fiber length trait were manifested in close proximity to each other in all forms. Kelajak, UzFA-707 and UzFA-705 varieties showed higher results compared to other hybrids.

Table-2

Data for economic traits as for 2017

№	Economic traits									
	Varieties	Cotton weight per boll, gr			Fiber yield, %			Fiber length, mm		
	in 2017									
		$\bar{X} \pm m$	Σ	v	$\bar{X} \pm m$	σ	v	$\bar{X} \pm m$	σ	v
1	UzFA-703	5,76±0.12	0.81	14.02	39.7±0,38	2.53	6.35	34.2±0.09	0.60	1.76
2	UzFA -705	4.89±0.11	0.75	15.38	42.4±0,63	4.20	9.90	34.0±0.09	0.58	1.70
3	UzFA -707	5.62±0.10	0.68	12.02	38.2±0,73	4.87	12.7	33.7±0.09	0.57	1.68
4	UzFA -710	5.01±0.10	0.63	12.60	42.7±0,46	3.08	7.19	33.7±0.08	0.50	1.49
5	UzFA -713	6.12±0.11	0.74	12.07	36.8±0,89	5.87	15.9	34.2±0.09	0.57	1.67
6	Kelajak	5.91±0.10	0.67	11.38	41.4±0,74	4.89	11.8	33.4±0.11	0.76	2.28

According to table 2, in 2017, the trait for weight of cotton in one boll showed the highest values in UzFA-713 and Kelajak varieties compared to other materials, and the variability rate was higher in UzFA-705 and UzFA-703 varieties, and the lowest in Kelajak variety. In terms of fiber yield, UzFA-710 and UzFA-705 varieties were superior to other forms, and UzFA-713 variety had the lowest values. UzFA-713 and UzFA-707 varieties differed from other varieties in terms of variability rate. The fiber length performances of UzFA-703, UzFA-713 and UzFA-705 varieties were positively different from other materials, and they were close to each other in other forms. The variability rate of population for this trait was shown in the Kelajak variety in a higher rate than in other varieties.

Table-3

Data for economic traits as for 2018

№	Economic traits									
	Varieties	Cotton weight per boll, gr			Fiber yield, %			Fiber length, mm		
	in 2018									
		$\bar{X} \pm m$	σ	v	$\bar{X} \pm m$	σ	v	$\bar{X} \pm m$	σ	v

1	UzFA-703	5,24±0.13	0.87	16.68	36.5±0,45	2.98	8.15	33.7±0.14	0.91	2.70
2	UzFA -705	5.02±0.59	3.89	77.55	41.0±0,46	3.08	7.50	33.6±0.15	1.02	3.03
3	UzFA -707	5.12±0.12	0.77	15.13	34.8±0,74	4.88	14.0	34.1±0.13	0.87	2.55
4	UzFA -710	4.59±0.11	0.73	15.79	41.8±0,38	2.50	5.97	34.4±0.11	0.75	2.19
5	UzFA -713	5.40±0.11	0.72	14.07	37.0±0,44	2.93	7.91	34.9±0.10	0.65	1.87
6	Kelajak	6.38±0.12	0.81	12.63	38.3±0,79	5.26	13.7	34.3±0.23	1.52	4.41

Table 3 shows that in 2018, the weight of cotton in one boll was the highest in the Kelajak variety and the lowest in the UzFA-710 variety, while other forms showed close indicators. The variability rate was negatively reflected in UzFA-705 and UzFA-703 varieties compared to other materials, and positively in Kelajak variety. The highest performances of fiber yield was observed in varieties UzFA-710 and UzFA-705, and the rate of variation of the population according to this trait was reflected phenotypically in varieties UzFA-707 and Kelajak. In terms of fiber length, the lowest performances were found in UzFA-703 and UzFA-705 varieties, and all other forms showed similar performances. The rate of variation was higher in Kelajak and UzFA-705 varieties compared to other populations.

Table-4

General average data for economic traits as for 2016-2018

№	Economic traits									
	Varieties	Cotton weight per boll, gr			Fiber yield, %			Fiber length, mm		
	In 2016-2018									
		X ± m	σ	v	X ± m	σ	v	X ± m	σ	v
1	UzFA-703	5,80±0.12	0.81	14.18	39.4±0,45	3.01	7.68	34.0±0.10	0.68	2.02
2	UzFA -705	5.16±0.26	1.77	35.11	41.2±0,53	3.52	8.64	33.9±0.12	0.79	2.33
3	UzFA -707	5.61±0.11	0.72	13.00	38.9±0,64	4.26	11.5	33.9±0.11	0.73	2.16
4	UzFA -710	5.12±0.10	0.66	13.16	41.7±0,40	2.69	6.43	34.1±0.09	0.62	1.83
5	UzFA -713	6.05±0.11	0.74	12.56	36.5±0,60	4.02	10.9	34.5±0.09	0.61	1.79
6	Kelajak	6.34±0.11	0.77	12.13	39.7±0,71	4.70	11.8	33.8±0.15	1.05	3.09

From the data of table 4, it is known that in terms of the general average manifestation of the phenotypic traits of the studied plants of the three generations, cotton weight per boll was found to be higher in Kelajak and UzFA-713 varieties, fiber yield was higher in UzFA-710 and UzFA-705 varieties, fiber length was higher in UzFA-713, UzFA-710 and UzFA-703 varieties compared to other materials.

Based on the collected data, we can conclude that, taking into account the specific characteristics and traits of all analyzed forms, it is possible to recommend the use of these cotton varieties as initial forms in future scientific research in the direction of genetic selection and breeding.

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TRAITS OF FIBER YIELD, INDEX AND LENGTH IN NATURAL COLORED COTTON SAMPLES

¹Rakhimova Gulzor Kho'jabergan qizi, ¹Nabiev Saydig'ani Mukhtorovich

¹Institute of Genetics and Plant Experimental Biology of the Academy of Sciences of the Republic of Uzbekistan

Abstract: In the article, the indicators of fiber yield, fiber index and fiber length of natural brown and green cotton samples of *G.hirsutum* L. species and the results of their analysis are mentioned. It is known that cotton is grown mainly for its fiber. Yield, index and length of cotton fiber are the most important agronomic indicators. According to the results of our research, the parameters of fiber yield, fiber index and fiber length in *G.hirsutum* L. colored fiber samples differed from each other depending on the fiber color. That is, in terms of fiber yield and fiber index, it was found that brown fiber samples have much higher indicators than green fiber samples. According to the indicator of the fiber length, which is an important quality trait, on the contrary was found to have higher indicators in green fiber samples (A-800 sample 29.7±0.3 mm and 010764 sample 29.0±0.1 mm) compared to brown fiber samples (catalog numbers 26.6±0.2 mm in sample 011250 and 25.7±0.2 mm in sample 010108).

Key words: *G.hirsutum* L., colored cotton, trait, fiber yield, fiber length

ПОКАЗАТЕЛИ ВЫХОДА, ИНДЕКСА И ДЛИНЫ ВОЛОКНА В ОБРАЗЦАХ С ЕСТЕСТВЕННО ОКРАШЕННЫМ ХЛОПКА

¹Рахимова Гулзор Хужабеган кизи, ¹Набиев Сайдигани Мухторович

¹Институт генетики и экспериментальной биологии растений Академии наук Республики Узбекистан

Аннотация: В статье приведены показатели выхода волокна, индекса волокна и длины волокна с естественно окрашенным бурным и зеленым волокном у образцов хлопчатника вида *G.hirsutum* L. и результаты их анализа. Известно, что хлопок выращивают в основном ради волокна. Признаки выхода, индекса и длины хлопкового волокна являются наиболее важными ценными сельскохозяйственными признаками. По результатам наших исследований показатели выхода волокна, индекса волокна и длины волокна в образцах с естественно окрашенным хлопком *G.hirsutum* L. отличались друг от друга в зависимости от цвета волокна. То есть по выходу волокна и индексу волокна установлено, что образцы бурого волокна имеют гораздо более высокие показатели по сравнению с образцами зеленого волокна. По показателю символа длины волокна, которая является важным признаком качества, то было обнаружено, что образцы с зеленым волокном (образец а-800 29,7±0,3 мм и образец 010764 29,0±0,1 мм) имеют более высокие показатели по сравнению с образцами с бурным волокном (каталожные номера 011250 26,6±0,2 мм в образце 010108 25,7±0,2 мм).

Ключевые слова: *G.hirsutum* L., цветной хлопок, признак, выход волокна, длина волокна

Cotton is planted mainly for fiber, more than 100 different types of products are produced from its fiber. Cotton fiber is widely used in the textile, paper, chemical, mechanical engineering industries and is considered the most desirable raw material for mankind. In today's cotton farming, much attention is paid to organic production. Fertilizers, along with abandoning toxic chemicals, did not use artificial chemical dyes, which are widely used in the process of dyeing gauze in the