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Determining the manifestation of performances of some economic traits in populations of varieties and lines of *G. hirsutum* L.

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Abstract: The article presents the results of the research carried out to study the manifestation of performances of traits for cotton weight per boll, fiber yield and fiber length in the populations which were grown in 2020 in the conditions of Tashkent region and belonging to upland cotton varieties and lines created by breeders of a number of scientific research institutes operating in the Republic of Uzbekistan. At the end of the article, it was stated that forms such as Bukhara-102, T-

1391, T-1278, Mehnat, Yulduz, C-8290 showed higher results in terms of weight of cotton per boll, UzFA-710, Yulduz, T-19, T-1278, Kelajak varieties in terms of fiber yield, T- 1470, Bukhara-102, Kelajak, UzFA-707, C-6524, UzFA-710, T-1336, T-41 and T-1326 varieties and lines in terms of fiber length trait than other sources of research.

How the manifestation of performances of cotton weight per boll trait are determined in cotton genotypes is important for landowners and farmers. Because they get profit from the sale of each kilogram of cotton. In the relevant scientific literature, the authors focus on the study of the performances of this trait [2, 4-5, 7.].

The increasing demand for varieties and lines that retain the high fiber yield in their genotype, which is recognized as one of the important economic traits of the cotton plant, can be explained by the further development of the light industry for cotton fiber processing in the country in recent years. Researches on the study of the performances of this trait and control of their manifestation in hybrid generations are covered in many scientific literatures [1, 5-7.].

The cost of cotton fiber in the world market is related to its staple length. Therefore, this trait of cotton hybrids is considered one of the most important aspects for light industrial production. In the scientific sources analyzed on the subject, special importance is attached to the careful study of the manifestation of the fiber length trait in new plant families and to the formation of hybrid generations as high-performance genotypes, to maintain it even after stability has been achieved [3, 5-7.]. Breeders always try to isolate and develop both agricultural and industrial hybrids [1-7.].

The object of the research: Data on the performances of traits for cotton weight per boll, fiber yield and length of a number of varieties and lines of upland cotton in the populations grown in 2020 are the object of this study.

The methods of the research: The research was carried out using methods of population analysis and comparison of genetics. Mathematical statistical processing of data was carried out according to the method of B.A.Dospekhov (M. 1985).

The results of the research: The data on the manifestation of the general average performances of the studied traits in the plants of *G.hirsutum* L. varieties and lines cultivated in 2020 are presented in the following table:

Table 1

Manifestation of performances of some economic traits in the varieties and lines of upland cotton

№	Research objects	In 2020								
		Cotton weight per boll (gr)			Fiber yield (%)			Fiber length (cm)		
		X ± m	σ	v	X ± m	σ	v	X ± m	σ	v
1	2	3	4	5	6	7	8	9	10	11
2	Namangan-77 (standard)	5,59±0,05	0,32	5,71	38,7±0,28	1,83	4,73	33,3±0,14	0,92	2,75
3	C-6524	5,80±0,07	0,47	8,15	34,6±0,28	1,85	5,34	34,2±0,10	0,63	1,84
4	Sulton	6,19±0,08	0,51	8,23	35,5±0,30	2,01	5,66	33,2±0,13	0,89	2,67
5	C-8290	6,37±0,08	0,56	8,71	37,1±0,31	2,09	5,62	33,4±0,13	0,85	2,56
6	Bukhara-102	7,09±0,10	0,69	9,17	37,8±0,30	2,00	5,30	34,5±0,13	0,87	2,53
7	Khorezm-127	6,12±0,08	0,56	9,17	36,7±0,30	2,01	5,48	33,8±0,09	0,62	1,85
8	Kelajak	6,34±0,08	0,56	8,87	38,7±0,32	2,15	5,54	34,4±0,13	0,86	2,49
9	UzFA-707	6,10±0,08	0,55	9,05	38,6±0,26	1,73	4,48	34,4±0,14	0,90	2,61
10	UzFA-710	5,78±0,08	0,50	8,72	41,2±0,25	1,67	4,06	34,2±0,14	0,95	2,77
11	Mehnati	6,70±0,10	0,67	9,96	38,9±0,31	2,09	5,37	33,6±0,15	1,00	2,98
12	Yulduz	6,53±0,11	0,76	11,6	39,1±0,24	1,56	3,99	33,3±0,15	1,01	3,03
13	AN-Boyovut-2	6,12±0,10	0,66	10,7	35,1±0,30	2,00	5,70	33,7±0,14	0,91	2,72
14	T-19	6,33±0,12	0,80	12,7	39,1±0,34	2,29	5,85	33,9±0,14	0,91	2,67

15	T-41	6,20±0,10	0,65	10,4	38,1±0,32	2,15	5,64	34,1±0,12	0,80	2,34
16	T-1278	6,80±0,10	0,68	10,0	38,9±0,24	1,61	4,13	33,9±0,16	1,03	3,05
17	T-1326	6,12±0,09	0,63	10,2	36,9±0,30	2,01	5,45	34,1±0,15	1,01	2,97
18	T-1336	6,04±0,09	0,63	10,4	37,8±0,30	2,00	5,30	34,1±0,15	1,02	2,97
19	T-1391	6,82±0,11	0,72	10,5	38,4±0,30	1,99	5,18	33,9±0,16	1,09	3,22
20	T-1470	5,51±0,09	0,57	10,4	35,8±0,28	1,83	5,10	35,1±0,18	1,23	3,49
21	T-1477	6,11±0,10	0,64	10,4	38,1±0,34	2,28	5,10	33,8±0,16	1,06	3,13
22	T-1777	6,14±0,11	0,73	11,9	38,1±0,34	2,28	5,99	33,1±0,13	0,85	2,52
23	T-8588	6,51±0,10	0,67	10,2	38,1±0,33	2,20	5,79	33,8±0,15	1,01	3,00

According to the data in the table, in this research year, it was observed that the highest values of upland cotton in terms of cotton weight per boll were manifested in such forms as Bukhara-102, T-1391, T-1278, Mehnat, Yulduz, C-8290. It was found that the Namangan-77 variety taken as a standard option showed low indicators compared to all the analyzed varieties and lines. The range of variation of the population according to the studied trait was found in the genotypes such as T-19, T-1777 and Yulduz compared to other materials.

It is known to everyone that the main part of the income from the cotton yield of the cotton plant corresponds to the contribution of its fiber, and in this article, special importance was given to determining the indicators of the fiber yield of the varieties and lines in the analysis. It was found that at the end of this study, the highest values were found in UzFA-710, Yulduz, T-19, and T-1278 varieties, the Kalajak variety manifested the same performances as the Namangan-77 standard variety, and the lowest values were found in AN-Boyovut-2, Sultan, T-1470 varieties and lines.

According to the results of the study on the manifestation of the performances of the fiber length trait of the research materials in 2020, varieties and lines such as T-1470, Bukhara-102, Kelajak, UzFA-707, C-6524, UzFA-710, T-1336, T-41 and T-1326 have been found to have higher rates than other sources of the research. The range of variability of the population according to the trait was the highest in the T-1470, T-1391, T-1377 lines, while the C-6524 and Khorezm-127 varieties showed low indicators compared to other forms.

Based on the results of the data analyzed above, we can conclude that such forms as Bukhara-102, T-1391, T-1278, Mehnat, Yulduz, C-8290 belonging to *G. hirsutum* L. species which were grown in 2020 manifested higher performances in terms of cotton weight per boll trait, sources such as UzFA-710, Yulduz, T-19, T-1278, Kelajak in terms of fiber yield, T-1470, Bukhara-102, Kelajak, UzFA-707, C-6524, UzFA-710, T-1336, T-41 and T-1326 varieties and lines showed higher data in terms of fiber length performances than other sources of the study.

Taking into account the aforementioned analytical data, it is recommended to use the genotypes with positive differences by some traits compared to other samples of the study as initial sources for the researches that will be carried out in order to isolate plant families with positive differences in terms of the traits analyzed in the article compared to the standard Namangan-77 variety.

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**Formation and stabilization of some economic traits of new cotton variety UzFA -710
belonging to *G.hirsutum* L.**

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The article presents analytical data on the processes of formation and strengthening of such average indicators of valuable economic traits as the weight of cotton in one boll, fiber yield and fiber length in plants of several generations of the population of the cotton variety UzFA-710.

Key words: Economic traits, cotton weight per boll, fiber yield, fiber length, genotype, phenotype, formation, stabilization.

Introduction: Well-organized seed management helps to increase the yield of the crop to some extent. Therefore, crop productivity depends on the level of agrotechnics used, as well as on the correct selection of varieties and the quality of seeds used for planting.

Like selection, the theoretical basis of seed breeding is genetics. Breeding conducts all its practical activities following the theory of heredity and variation. Based on this, the rules and methods aimed at fully realizing the productivity potential of the variety and preserving its economic and biological properties are developed and used widely. Every seed breeder must know the biological and variability characteristics of the cultivated varieties in order to carry out the seed breeding work correctly.

All varieties of plants are created by the method of selection and their valuable economic traits and properties are enhanced. Each variety, which is perfect from the point of view of selection, has the ability to preserve its genetic characteristics for a long time (M. Yigitaliev, S. Muhammadkhanov. 1981).

Several researchers in the analyzed literature also pay special attention to the formation of indicators of economic traits in their research (Ibragimov P.Sh., Allashev B.D., Amanturdiyev Sh.B., 2010, Matniyazova H.H., Sherimbetov A.G., 2015, B. Kh. Amanov, F. R. Abdiev, 2016).