GALAXY INTERNATIONAL INTERDISCIPLINARY RESEARCH JOURNAL (GIIRJ)
ISSN (E): 2347-6915
Vol. 13, Issue 5 May (2025)

FORMATION OF EARLY MATURITY IN COMPLEX AND CONVERGENT COTTON FAMILIES

Maxsuna Xakimova
Tashkent State Agrarian University PhD Student

Guzal Ruziyevna Xolmurodova
Tashkent State Agrarian University
Doctor of Agricultural Sciences (DSc), Professor

Abstract
The article presents the formation of early maturity in complex and convergent cotton families. It is noted that all the isolated families were early maturing, especially the dominance of the O-357-68/18, O-155-58/18 and O-503-08/18 families. This indicates that they were formed in relation to the parental genotype. It is advisable to use these families in genetic and selection studies to improve the trait.

Keywords: Cotton, complex family, convergent family, early maturity, genetic and breeding research, genotype, variety, combing, flowering, ripening, fiber quality.

UO'T: 633.511.631.527:53

G'O'ZANING MURAKKAB VA KONVERGENT OILALARIDA TEZPISHARLIKNING SHAKLLANISHI

Xakimova Maxsuna Mamaraxim qizi
Toshkent davlat agrar universiteti tayanch doktoranti

Xolmurodova Go'zal Ro'ziyevna
Toshkent davlat agrar universiteti
Qishloq xo'jaligi fanlari doktori (DSc), professor

ANNOTATSIYA
Maqolada g'o'zaning murakkab va konvergent oilalarida tezpisharlikning shakllanishi keltirib o'tilgan. Ajratib olingan oilalarning barchasi tezpishar bo'lganligi, ayniqsa O-357-68/18, O-155-58/18 va O-503-08/18 oilalarining ustunligi qayd etilgan. Bu esa ota-onalik genotipiga nisbatan shakllanganligidan dalolat beradi. Ushbu oilalardan belgini yaxshilashda genetik-seleksion tadqiqotlarda foydalanish maqsadga muvofiq hisoblanadi.

Kalit so'zlar: g'o'za, murakkab oila, konvergent oila, tezpisharlik, genetik-seleksion tadqiqotlar, genotip, nav, shonalash, gullash, pishish, tola sifati.

INTRODUCTION
The creation of early-maturing varieties is of great importance in the selection of cotton varieties. Since our republic is located in the northernmost region among cotton-growing

countries, in a sharply continental climate, the creation of early-maturing varieties is a constant task for breeders. Breeders have conducted many studies on reducing the interval between the stages of budding, flowering, ripening and increasing the rate of boll opening. It is known that the early-maturing trait is negatively correlated with many valuable economic traits, in particular, with fiber quality indicators. Therefore, the creation of early-maturing, disease-resistant varieties with fiber quality corresponding to type IV is a very urgent and difficult task.

Early-maturing determines the yield, quality of cotton and fiber, machine harvesting, the cost of cotton, etc.

The structure of earliness is a complex trait, determined by several elements: the length of the vegetative phase, as well as the period required for the transformation of the ear into a flower and the one-day node into an opened boll. The period between the phases when the cotton is 50% in ear, in flower and when the boll is 50% open is a measure of the period.

The height of the first crop branch (hs) is a morphological indicator of earliness. The speed of ear, flower formation and opening of bolls is an important element of earliness. This is expressed in short and long periods of earing, flowering and boll maturation.

Earliness, in general, varies greatly depending on soil and climatic conditions and the level of agrotechnology. If nitrogen is applied excessively and the soil is watered excessively, cotton ripening is extremely delayed. The variability of the elements of precocity is not the same under different living conditions, for example, the height of the first fruiting branch or the length of the period from budding to flowering is less subject to paratypical variability, while the length of the period from flowering to ripening varies greatly depending on humidity, temperature, light, wind exposure to the bush and other factors. Thus, the variability of precocity of varieties and hybrid populations is the result of hereditary and non-hereditary variability. This should be taken into account when conducting genetic analysis.

According to most scientists, the length of the vegetative phase is determined by a small number of genes, and therefore, early onset of the phase is preferred over late onset.

Research results. According to the results of our research in 2022 (see table), the standard variety had a characteristic indicator of 119 days, ranging from 110.5 (O-155-58/18) days to 120 (O-385-90/18) days. Only the O-385-90/18 family ripened in 120 days, 1 day later than the standard variety. This year, the O-155-58/18 (110.5 days), O-539-40/18 (111.3 days) and O-143-48/18 (111.5 days) families showed relatively early maturity.

G‘o‘zaning murakkab va konvergent oilalarida tezpisharlikning shakllanishi

Oilalar	Oilalarni kelib chiqishi	M±m	σ	V, %	M±m	σ	V,%	M±m	σ	V,%
	2022 yil				2023 yil			2024 yil		
O-229-32/18	**SG-1** -[F_1(S-9070 x S-6532) x (F_1 An-415x S-6532)]	118,5±0,4	2,9	2,7	115,5±0,5	2,6	4,5	107±0,73	1,3	2,0
O-197-200/18	**SG-1** -[F_1 (S-9070 x S-6532) x (F_1An-415x S-6532)]	114,4±0,2	3,5	3,3	115,7±0,2	1,7	2,7	106,7±0,5	1,4	2,3
O-155-58/18	**SG-1**- [F_1 (S-9070 x S-6532) x (F_1 An-415x S-6532)]	110,5±0,2	4,6	4,3	110,0±0,3	1,1	1,7	106,2±1,2	3,3	5,6
O-241-42/18	**SG-1** -[F_1 (S-9070 x S-6532) x (F_1An-415 x S-6532)]	115,4±0,1	2,9	2,7	111,0±1,1	1,3	2,1	109,6±0,7	0,9	1,5
O-189-90/18	**SG-1**- [F_1 (S-9070 x S-6532) x (F_1An-415x S-6532)]	117,4±0,2	2,2	1,9	115,5±0,5	3,5	5,9	112,1±0,9	2,7	4,6
O-51/18	**SG-2**- [F_1 (Oqdaryo-6 x S-6532) x (F_1Yulduz x S-6532)]	117,8±0,2	3,1	2,9	113,5±0,5	1,9	3,3	107,3±1,0	1,3	2,2
O-31-34/18	**SG-2**- [F_1 (Oqdaryo-6 x S-6532) x (F_1Yulduz x S-6532)]	113,1±0,1	2,7	2,5	108,5±0,5	1,2	1,9	108,2±0,9	3,2	3,3
O-143-48/18	**SG-5**- [F_1(Oqdaryo-6 x Toshkent-6) x (F_1S4911 x Toshkent-6)]	111,5±0,2	2,8	2,5	110,5±0,5	2,1	3,6	110,0±0,8	4,5	2,1
O-71-74/18	**SG-7**-F_1(S4911 x Toshkent-6) x (F_1Oqdaryo-6 x Toshkent-6)]	117,6±0,3	2,4	2,9	111,3±0,5	2,1	3,7	107,0±1,2	0,7	1,2
O-451-58/18	**VK-1**-{[F_1(Yulduz x S-6532) x (Oqdaryo-6 x S-6532)] x [(F_1S9070 x S-6532) x (F_1 An-415 x S-6532)]}	115,7±0,1	3,6	3,3	108,5±0,3	2,6	4,5	109,6±0,7	3,0	3,5

O-539-40/18	**VK-2**-{F_1[F_1(S-4911 x S-6532) x F_1(Oqdaryo-6 x S-6532)] x [F_1(S-9070xS-6532) x F_1(Yulduz x S-6532)]}	111,3±0,1	1,2		110,0±0,5	2,3	2,1	109,4±0,8	3,2	3,4
O-495-500/18	**VK-5**{[F_1(Qirg'iz-3 x Toshkent-6) x (Oqdaryo-6 x Toshkent-6)] x [(F_1 4911 x S6532) x (F_1 S-9070 x Toshkent-6)]}	116,06±0,13	2,8	2,1	108,5±0,3	2,1	1,8	108,9±0,9	4,5	2,1
O-127-30/18	**VK-5**-{[F_1(Qirg'iz-3 x Toshkent-6) x (Oqdaryo-6 x Toshkent-6)] x [(F_1 4911 x S6532) x (F_1 S-9070 x Toshkent-6)]}	119,23±0,14	2,2	1,9	115,00±1,90	3,9	3,5	111,2±0,5	1,8	1,8
O-503-08/18	**VK-5**-{[F_1(Qirg'iz-3 x Toshkent-6) x (Oqdaryo-6 x Toshkent-6)] x [(F_1 4911 x S6532) x (F_1 S-9070 x Toshkent-6)]}	115,97±0,14	2,4	2,3	111,50±1,52	3,0	2,7	106,4±0,5	2,9	2,8
O-165-72/18	**VK-5**-{[F_1(Qirg'iz-3 x Toshkent-6) x (Oqdaryo-6 x Toshkent-6)] x [(F_1 4911 x S6532) x (F_1 S-9070 x Toshkent-6)]}	116,16±0,42	2,2	2,7	117,94±1,52	0,8	0,7	107,0±1,0	3,2	3,0
O-357-68/18	**VK-9**-{[F_1(S-9070 x S-6532) x (YulduzxS-6532) x [(F_1S-4911 x S-6532) x (F_1Oqdaryo-6 x S-6532)]}	115,08±0,12	2,5	2,1	115,25±0,85	1,7	1,5	105,9±0,6	2,5	2,4
O-541-52/18	**VK-9**-{[F_1(S-9070 x S-6532) x (YulduzxS-6532) x [(F_1S-4911 x S-6532) x (F_1Oqdaryo-6 x S-6532)]}	119,02±0,10	2,1	2,9	113,1±0,5	2,1	1,9	112,5±0,3	2,2	2,3
O-313-22/18	**VK-12**-{[F_1(S-4911xToshkent-6) x (Oqdaryo-6 xToshkent-6)]x[(F_1S-9070 x Toshkent-6) x (F_1Yulduz xToshkent-6)]}	112,7±0,12	2,2	2,5	112,4±0,3	3,3	2,9	109,7±0,4	2,6	2,5
O-385-90/18	**VK-12**-{[F_1(S-4911 x Toshkent-6) x (Oqdaryo-6 x Toshkent-6)]x[(F_1S9070 x Toshkent-6) x (F_1Yulduz xToshkent-6)]}	120,00±0,12	2,1	2,4	112,7±1,2	2,6	2,3	108,4±0,6	2,9	2,6
	S-6524 andoza nav	119,0±1,50	2,6	3,80	118,5±0,5	0,70	1,69	115,0±0,5	0,78	1,65

Observations in 2023 showed that the fastest ripening was 108.5 days, which was manifested in the O-451-58/18 and O-495-500/18 families. The O-165-72/18 family had 117.9 days, and the standard variety had this indicator of 118.5 days, which was 1.4 days earlier than the standard variety. In 2024, the fast ripening was manifested in the O-357-68/18 (105.9 days), O-155-58/18 (106.2 days) and O-503-08/18 (106.4 days) families. This year, relatively late ripening was observed in the O-541-52/18 family, which amounted to 112.5 days, and in the standard variety - 115 days, and all the isolated families were noted to be early ripening compared to the standard variety.

In conclusion, it should be noted that all the isolated families were early ripening, especially the O-357-68/18, O-155-58/18 and O-503-08/18 families were noted. This indicates that they are formed in relation to the parental genotype. It is advisable to use these families in genetic and selection studies to improve the trait.

REFERENCES

1. Xolmurodova G.R., Rasulov I.M., Jo'raev S.T., Toreev F.N., X.T., Ergashev J.A.. G'o'za genetikasi, seleksiyasi va urug'chiligi. Darslik. Lesson press nashriyoti. Toshkent, 2021 y. 320 b.
2. Xolmurodova G.R., Barotova A.R. G'o'zaning kompozit duragaylarida tezpisharlikning shakillanishi. O'zbekiston agrar fani xabarnomasi jurnal. № 2 (8) 2023. 174-179 betlar (06.00.00)
3. Rustamov N.S., Raxmonkulov M.S., Xolmurodova G.R., Abdiev F.R.. Madartov B.K. Analiz formirovaniya priznaka skorospelosti u sortov vida G. hirsutum L. F3 pokoleniya, poluchennыy metodami dvoynoy i slojnoy gibridizatsii. Aktualnыe problemы sovremennoy nauki №2(119) 2021 g. s.-95