

CORRELATION RELATIONSHIPS BETWEEN VALUABLE ECONOMIC TRAITS IN COTTON CULTIVARS GROWN IN DIFFERENT REGIONS

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ABSTRACT

Based on the determination of the degree of variability of valuable economic traits, correlation and wilt resistance of introgressive lines under different soil-climatic conditions, productive, early maturing, fiber yield 41.0-43%, quality indicators and high adaptability, lines with high adaptability were isolated.

Keywords: Cotton, duration of the growing season, adaptability, geographical long-distance hybridization, introgressive forms, variety testing, correlation.

G'O'ZA TIZMALARINI TURLI XIL HUDUDLARDA YETISHTIRILGANDA QIMMATLI-XO'JALIK BELGILARI O'RTASIDAGI KORRELYATSION BOG'LIQLIKLAR

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Annotatsiya

Introgressiv tizmalarning turli tuproq-iqlim sharoitida qimmatli-xo'jalik belgilarining o'zgaruvchanlik darajasi, korrelyativ bog'liqlik va viltga bardoshlilikini aniqlash asosida

hosildor, tezpishar, tola chiqimi 41,0-43%, sifat ko'rsatkichlari hamda moslashuvchanlik imkoniyati yuqori bo'lgan tizmalar ajratib olingan.

Kalit so'zlar: g'o'za, vegetatsiya davri davomiyligi, moslashuvchanlik, geografik uzoq duragaylash, introgressiv shakllar, nav sinash, karrelatsiya.

Introduction.

Analysis of the effectiveness of selection work carried out in many countries of the world in the selection of agricultural crops shows that the selection methods used in this process should be adapted to the local soil-climatic, weather, as well as technological and socio-economic conditions of each country. Therefore, one of the promising directions in creating new varieties of agricultural crops is to assess the potential of genotypes in several geographical areas at the same time, to identify forms with a wide range of adaptability.

Research results. We determined the correlation coefficients between the duration of the growing season and some valuable economic traits in ten lines of medium-fiber cotton of the *Gossypium hirsutum* L. variety grown in three different regions of Uzbekistan.

As is known, for targeted selection processes, it is necessary to study the correlation between various traits. Thus, researchers have found a close relationship between yield and number of bolls in cotton (from 0.84 to 0.91), a moderate positive correlation was observed between boll size and yield ($r = 0.32$ to 0.61). A moderate to weak positive correlation was observed between yield and seed weight (from 0.28 to 0.39), and a weak negative correlation was observed between yield and fiber yield. A high degree of correlation was observed between yield and 1000 seed weight. A moderate positive correlation was observed between boll size and plant height; weak positive correlations were noted between seed weight and fiber length. Seed weight and fiber yield are, as a rule, negatively correlated [ibid.]. By identifying forms that embody different relationships, researchers can influence the recombination that occurs in hybrids.

A weak positive correlation was observed between the length of the growing season and the weight of cotton raw material per boll in 2019-2020 ($r = +0.21$ - $+0.48$) (see Table 5.1). In the tested lines in 2018, the indicated traits showed varying degrees of correct correlation, ranging from 0.19 (in Tashkent region) to 0.94 (in Fergana region). A close correlation was also observed in Kashkadarya region ($r = 0.54$). That is, boll weight increased with increasing growing season. It should be noted that the breeder is interested in a negative correlation between early maturity and any trait.

In most cases, the correlation between the length of the growing season and 1000-seed weight was absent ($r = -0.07$ - $+0.03$), or both inverse and direct correlations were weak ($r = -0.21$ - $+0.28$). The groups tested in Fergana region in 2018 were an exception, showing a high correlation ($r = 0.50$). Moderate to strong positive correlations between the length of the growing season and fiber yield were found in all regions during the three-year test (from 0.28 to 0.60).

Table 1 Correlation between the length of the growing season and the main valuable economic traits of cotton ridges.

Belgi		Hudud								
		Yillar	O' suv davri davom	1 ko' sak vazni	1000 dona chigit vazni	Tola uzunligi	Solishtirma uz.kuch	Mikroneyr	Mahsuldorlik	Hosildorlik
O'suv davri	Toshkent	2018	0.19	0.20	0.56	-0.09	0.28	0.74	0.15	-0.75
		2019	0.38	0.28	0.36	-0.05	0.12	-0.12	0.39	-0.33
		2020	0.31	-0.17	0.48	0.24	0.15	-0.24	0.31	-0.46
O'suv davri	Farg'ona	2018	0.94	0.50	0.35	0.32	0.50	0.20	0.91	0.08
		2019	0.32	0.03	0.49	0.29	0.59	0.33	0.32	0.19
		2020	0.48	0.04	0.49	-0.10	0.33	-0.02	0.47	0.35
O'suv davri	Qashqadaryo	2018	0.54	0.13	0.60	-0.15	0.39	0.54	0.38	-0.73
		2019	0.21	-0.07	0.28	-0.11	0.38	0.48	0.26	0.42
		2020	0.31	-0.21	0.40	0.35	0.22	-0.11	0.03	-0.07

A very weak correlation was observed between the duration of the growth period and fiber length: from no correlation ($r = -0.05$, $r = -0.07$) to a weak direct correlation ($r = 0.35$). Much closer correlations were observed between precocity and the relative breaking strength of the fiber (from 0.12 to 0.59). The correlations between precocity and fiber microneuron were manifested differently in different years of testing - from weakly negative ($r = -0.24$), no correlation ($r = -0.02$), to strong positive ($r = 0.74$ in the ridge groups tested in the Tashkent region in 2018). A high correlation was also found between the duration of the growing season and fiber microneura in the ridge groups tested in the Kashkadarya region in 2018 and 2019 ($r = 0.48$ and $r = 0.54$, respectively).

In most cases, a weak positive correlation was observed between the duration of the growing season and productivity (from 0.15 to 0.38). We observed a strong correlation between them in the ridge groups in the Fergana region in 2020 ($r = 0.54$) and 2018 ($r = 0.91$). In the experiments in the Kashkadarya region in 2020, there was no correlation between these traits ($r = 0.03$).

A weak inverse relationship between the duration of the growing season and yield was found in Tashkent and Kashkadarya regions in 2018 ($r = -0.75$ and $r = -0.73$, respectively). That is, early maturing forms showed higher yields. In a three-year trial in Fergana region, the correlation between the indicated traits was weak ($r = 0.19$ and $r = 0.35$) or absent ($r = 0.08$).

CONCLUSION

In plants, unlike the growing regions, it was found that fiber yield, productivity, specific breaking strength of fiber, and weight of cotton raw material per boll were strongly correlated with an increase in the duration of the growing season. It was shown that in most cases there is no relationship between early maturing and 1000-seed weight. A very weak correlation was found between early maturity and fiber length. A correlation of varying degrees and direction was noted between the duration of the growing season and fiber microneura. A negative correlation was characteristic of the studied ridges between the duration of the growing season and yield.

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