

HIGH-RESISTANT INTERVARIETAL HYBRID COMBINATION F₅ TO VERTICILLIUM PATHOGENS GENUS UNDER FIELD CONDITIONS**DSc. Kurbonov Abrorjon Yorkinovich, Xojaqulova Naima Shaxriqizi***Cotton Breeding, Seed Production and Agrotechnologies Research Institute (CBSPARI), Republic of Uzbekistan. Tashkent region, Kibrai district, University street. e-mail: kurbonov.abrorjon@mail.ru.*

Abstract. *In this paper, we studied the stability of intervarietal F₅ hybrid combinations to Verticillium pathogens at the natural background in the fields. New intervarietal hybrid combinations showed a high index of resistance to pathogens in natural wilt background, compared with varieties.*

Key words: *cotton, Verticillium, pathogen, intervarietal hybrid, F₅ generation*

Uzbekistan is one of the cotton producing countries, located in the northern part of the world. No less important and actual problem in the cotton selection for Uzbek cotton-gatherers is still creation of cotton new sorts of that would have very high quality and quantity; productivity and quick-fertility that are characterized by their resistance to pathogens that correspond ecological conditions of Uzbekistan.

It is really important to create the sorts with high pathogen resistance. Some resistant sorts of cotton become very sensitive as a result of new more aggressive races V. dahliae [1,3]. For example, superior local sorts C-6524 and Namangan-77 that in the past demonstrated up to 10-15% harvest losses because of V.dahliae, now it reaches 70-80% harvest losses and up to 30-50% with low fiber quality. In order to overcome the problem, the extensive researches on creation of cotton resistant sorts to V. dahliae and Fusarium oxysporum f. sp. Vasinfectum [2] using intervarietal hybrids F₅ were held. These efforts are as usual important to accelerate and optimize the breeding process at an early stage by selecting suitable initial form. To the end, the inheritance will be determined.

The experiments have been conducted under the field conditions of experimental part of the Scientific-Research Institute of Selection, Seed Production Agro-technologies Research Institute. The initial form used in this study were Sulton, Namangan-34, Gulbaxor-2, Andijan-35, An-16 hybrid combinations and An-16, Andijan-35 standard sorts.

The experiments were conducted using the method of randomization in triple frequency. Also, all plants of hybrid F₅ were marked. The plants quantity provided the reliability of variation-statistical processing of research results. Research was conducted in fields heavily infected by V. dahliae.

For an objective and exact estimation of wilt tolerance the Popov method [3] have been used where susceptibility is defined as the wilt expression on leaves and quantity decrease of generative organs.

The most resistant to V.dahliae was F₅[An-16 x Sulton] among hybrids with susceptibility score of 0.48. F₅[Gulbaxor-2 x Namangan-34], F₅[Andijan-35 x An-16] and F₅[An-16 x Andijan-35], F₅[Namangan-34 x An-16] had relatively low susceptibility scores, up to 0.57. Among zoned varieties, An-16 had a comparatively low susceptibility score up to 0.73. The comparative analysis of standard deviation (δ) and variation (V%) of parental lines and progeny showed that the parental varieties were in 1.5 times more susceptible than in the F₅ generation.

Further, were the received research results analyzed with the following conclusions:

- the best trait average value among the parental forms is An-16 variety;

- the best feature average value among the F₅ hybrids, created by us are the F₅ [An-16 x Sultan], F₅ [Gulbaxor-2 x Namangan-34], F₅ [Andijan-35 x An-16] and F₅ [An-16 x Andijan-35], F₅ [Namangan-34 x An-16] hybrids, which should be used later at creation of the cotton new varieties with high resistance to V.dahliae.

References

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