

## Genotypic Resistance of F<sub>1</sub> Cotton Hybrids by Inoculation with Different Virulent Isolates of the Fungus *Verticillium Dahliae* Klebahn

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The plant pathogen *Verticillium dahliae* causes severe cotton losses in Uzbekistan. To create cotton varieties that are resistant to the more virulent races of *V. dahliae* we wanted to determine genotypic resistance of varieties and lines of cotton to more virulent isolates of different geographic populations of the fungus *V. dahliae* isolated from different cotton varieties in Uzbekistan and determine the inheritance of wilt resistance with hybrids of the first generation to various isolates of *V. dahliae*. We found that the highest wilt resistance was observed in the variety Omad and lines L-44, L-408, L155 and L-1708 to the isolates 28, 30, 32, 36, 40 and 44. These varieties and lines exhibit hypersensitivity when the pathogen is inoculated into the plant, but they do not display external symptoms of wilt. Wilt resistance of hybrids of the first generation as determined by inoculation with the isolates of *V. dahliae* is inherited according the type of super dominance and dominance toward the resistant or susceptible parent independent from the method used to determine the disease index. Also intermediate inheritance is observed. The degree of dominance depends on the combinational ability of parents and genotype reaction of F<sub>1</sub> hybrids when pathogens are introduced into the plant, and also on the virulence of the isolates found in different varieties of cotton from different soil-climatic regions of the Republic of Uzbekistan. The varieties with the highest phenotypic wilt resistance (i. e. , tolerance) are Omad, C5621 and lines L-162, L-842, L-44 and L-1708. Among hybrids, the hybrid combinations L162 × C-5621, L-162 × L-44, L-155 × C-5621 and L1708 × C-5621 had the highest phenotypic wilt resistance. The degree of tolerant resistance to wilt varied from 50 to 80%. Genetic control of inheritance of tolerant resistance to *V. dahliae* isolates and F<sub>1</sub> hybrids was characterized by negative and positive super dominance, dominance toward the best or the worst parent and intermediate inheritance. The hybrid combinations L-155 × C-5621 and L-155 × L-44 have the best combinational wilt resistance toward the *V. dahliae* isolates studied, as compared to other hybrid combinations with the maternal forms Omad, C-8284, L-162 and L408.