

Effect of *Fusarium* Wilt on the Cotton Yield and Fiber Quality

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Abstract: Ten varieties (strains and crosses) participated in the cotton regional test of Yangtze River Valley in 2002 were tested for their resistance to *Fusarium* wilt. 30 plants from each variety in the trial were randomly picked up for the analyses of yield, fiber quality, and resistance to *Fusarium* wilt. The result showed that there were 2 resistant varieties, 6 tolerant ones and 2 susceptible varieties to the disease. The percentages of reduced lint yield for the varieties that expressed wilt disease were as follow: 26.48% for grade I, 45.50% for grade II, 54.50% for grade III, and 77.76% for grade IV. The main causes related to the yield loss were that the ma-

ture boll number per plant, the single boll average weight, and the lint percentage reduced along with the increase of the incidence of the disease. The fiber quality was also affected by the incidence of the disease, showing that the span length, uniformity, strength, and the elongation of the fiber were lowered compared with control, and all the variances statistically reached highly significant levels, except the micronaire value that was less affected. Correlation analyses indicated that the incidence grade of the disease was negatively correlated with the fiber strength, micronaire value and the fiber span length, and reached significant or highly significant levels.

Key words: cotton; *Fusarium* wilt; disease resistance; yield character; fiber quality