

# **TEMPORAL OCCURRENCE OF BRONZE WILT IN TWO COTTON VARIETIES IN LOUISIANA**

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## **Abstract**

Severe outbreaks of bronze wilt can devastate yields in susceptible cotton cultivars. Using non-susceptible cultivars is the only option for managing this malady. The knowledge concerning bronze wilt epidemiology is limited and more research is needed before a reliable screening technique can be developed. Field experiments were conducted in 2000 and 2001 to better understand factors affecting bronze wilt epidemics. Stoneville 373 (2000-2001) and Delta and Pine Land Paymaster 1218 B/R (2000) were evaluated as susceptible cotton cultivars. Stoneville 474 was grown in 2000 as a non-susceptible check. These varieties were evaluated in two tests, one planted between April 27 (within recommended planting dates from the Louisiana Cooperative Extension Service (LCES)), and another planted June 1 (later than LCES recommendations) to assess planting date effects. Plants were monitored weekly for bronze wilt symptoms. To document epidemic progression, symptomatic plants were categorized by date of symptom expression to calculate weekly bronze wilt incidence. Plots were machine harvested to determine losses from bronze wilt. Initial symptoms of bronze wilt were observed in late June and early July in 2000 and 2001, respectively. In 2000, bronze wilt incidence in plots planted April 27 was less than one percent on June 28, but increased to 35 percent by August 18. Incidence in cotton planted June 1 was low and ranged from 0.11 on June 28 to 2.5 percent on August 18. In the test planted April 27, Stoneville 373 yielded 32 percent less than Stoneville 474. The late-planted test in 2000 was not harvested because of drought conditions. Incidence was low during 2001, regardless of planting date, and ranged from 0.11 to 3.9 percent. Bronze wilt epidemics progressed similar to that observed in 2000 until mid-July, but never developed appreciably after this date. Subsequently, there was no yield impact. Each year, initial symptoms of bronze wilt appeared at the same time in both tests regardless of plant growth stage, suggesting initiation of bronze wilt epidemics may be related more to environmental stresses than growth stage. However, epidemic progress is probably related to interactions involving environmental stresses, plant growth stage, and physiological stress. This was evident in 2000. Drought stress on older plants (early planted) intensified epidemics while the younger cotton (later planted) was able to withstand drought conditions resulting in less bronze wilt. Factors affecting the development of bronze wilt are still unclear, and more research is needed before definitive conclusions can be formulated.