

BRONZE WILT FIELD SYMPTOMS IN GEORGIA

S.M. Brown
University of Georgia
Tifton, GA

Abstract

Bronze wilt is a plant malady for which the causal agent(s) is not universally agreed upon. What has been described as bronze wilt possibly has varied across the U.S. and world, and thus it may be difficult to ultimately agree as to the definitive plant symptoms. The first occurrence of bronze wilt in Georgia was observed in 1997 in 'Stoneville 132' and several of the 'Paymaster 1200' varieties of cotton. Incidence was extremely low across the state and severity in all but a couple of fields was inconsequential. Recognized symptoms were initially observed just prior to bloom through mid-bloom and included reddened foliage in the upper canopy, loss of fruit and foliage, and wilting of the entire plant. Most often affected plants occurred randomly throughout fields. Typically, incidence did not increase as the season progressed. In 1998, the problem was observed on at least 30,000 acres. Severity was greatest in fields planted in late May and June and in the southern extremes of the state. In many of these fields, yields were greatly reduced. Occurrence was common in 'Paymaster 1220 B/RR' and 'Paymaster 1220 RR,' which were planted on approximately 200,000 acres in Georgia in 1998. Symptoms included not only those described above, but also severe wilting and plant death in the 6 to 8 leaf stage. This is contrary to most earlier reports from other regions of the U.S. which have indicated the initiation of symptoms at mid-bloom. Affected plants typically had no internal stem discoloration and no observable root abnormalities. In some cases, boll weight was extremely reduced because of the lack of seed and lint production. In many fields, occurrence of the problem increased through August. Because of concerns about bronze wilt and the link to 'Paymaster 1220,' acreage planted to these varieties was greatly reduced in 1999. The problem was noted only in a couple of fields in 1999, while at other locations, 'Paymaster 1220 B/RR' performed extremely well. Symptoms which have been confused with bronze wilt include premature defoliation associated with early cutout, drought, and K deficiency. Stem injury from mechanical devices (cultivators, etc.) and contact herbicides may also cause similar foliar symptoms.