

TAKEAWAYS



Cotton Blue Disease Caused by *Cotton leafroll dwarf like virus*: Identification, Symptomology, and Occurrence in Alabama

Kathy Lawrence

*Auburn University
Auburn, Alabama*

- Symptoms of cotton blue disease, caused by *Cotton leafroll dwarf like virus* (CLRDV), were first observed in U.S. cotton fields in southeastern Alabama on August 29, 2017, and included foliar distortion along with leaf curling and rolling of the apical tissue. Walking the fields several days later revealed an infestation of whiteflies (*Bemisia tabaci* type B).
- A review of *Compendium of Cotton Diseases, Second Edition* (2001), suggested that the causal agent could be *Cotton leaf crumple virus*, a geminivirus, which had been found in the southwestern United States. Samples from the Alabama field were sent to Dr. Judy Brown, a geminivirus expert at the University of Arizona.
- After determining that the causal agent was not a geminivirus, Dr. Brown requested more samples. On March 16, 2018, she identified the causal agent as CLRDV, a polerovirus.
- APHIS was notified of this discovery of a new virus in the United States, and the Cotton Foundation and Cotton Inc. were informed, as well.
- A review of the literature indicated that CLRDV is common in Brazil and that successful management strategies include weed control. Weed hosts were collected from Alabama fields several times from April to August 2018 and sent to Dr. Brown, including some weeds infested with aphids. No CLRDV infections were identified.
- Samples were taken from a cotton field with Fusarium wilt in central Alabama in which CLRDV symptoms had been observed. The samples were sent to Dr. Brown, who made a positive identification of CLRDV and contacted APHIS.
- In 2017, CLRDV symptoms were observed in eastern Alabama; 3–30% of fields were infected, and the yield loss was 4%. In 2018, severe symptoms were observed in the southwestern part of the state; 3–100% of fields were infected, and the yield loss was 1%. Based on these findings, no changes in management strategies were recommended for 2019.
- In sum, CLRDV occurs sporadically and is transmitted by a flying vector. Crop age affects disease severity. Symptoms begin in late August, usually after full bloom, and intensify until harvest, which means planting date will be a factor in disease development.