CLRDV UPDATE

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Abstract

Cotton Leafroll Dwarf Virus (CLRDV) was first observed in the U.S. in Alabama in 2017. Similar to cotton blue disease reported in Africa (1949) and South America (1980s), CLRDV is a *Polerovirus* transmitted by cotton aphid and possibly other aphid species. Significant yield losses are reported in the literature from Brazil; however, serious losses have been observed in only a few fields in the Lower Southeast, though yield reductions on scattered, severely affected plants are observed in this region. Symptoms include leaf malformation, stunting, fruit shed, pollen effects, and bronzing, though there is not full agreement on what is consistent with CLRDV. Confirmation with PCR is important though analytical sensitivity can be an issue. Sentinel plots in the U.S. Cotton Belt indicate that CLRDV occurs from Virginia to Texas and that it is more prevalent and consequential in the Lower Southeast. Incidence and impact were less in 2021 than in previous years. Scientists from multiple disciplines are involved in associated research. The consensus is that CLRDV is slightly different than blue disease and that there are presently not multiple variants of the virus in the U.S. Plant breeding, and perhaps broad in-plant resistance to aphids may provide the ultimate defense. Insecticide applications targeting aphids have proved ineffective for CLRDV elimination. Generally, in the Southeast later planted cotton is at greater risk for infection and impact. What triggers severe plant effects and yield loss remains unclear.