## MONITORING THE SEASONAL OCCURRENCE OF COTTON LEAFROLL DWARF VIRUS SPREAD IN RELATION TO APHID VECTOR FLIGHTS IN ALABAMA Jessica Mahas John Mahas Charles Ray Adam Kesheimer

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## <u>Abstract</u>

Cotton leafroll dwarf virus (CLRDV) was first discovered in the southeastern U.S. on cotton, *Gossypium hirsutum* L., in 2017 and reported to cause yield loss. The cotton aphid, *Aphis gossypii* Glover, transmits this virus to cotton. Research in India has shown CLRDV can be transmitted to chickpea by the cowpea aphid, *Aphis craccivora* Koch, and the green peach aphid, *Myzus persicae* Sulzer, but their vector status in the Americas is unknown. A total of eight aphid species are reported to feed on cotton in the USA, but vector status and seasonal dynamics in cotton agroecosystems has only been studied for the cotton aphid. In this study we monitor weekly population dynamics of these eight aphid species and CLRDV spread to gain a better understanding of the timing of virus spread and determine which aphid species are present when it occurs. Weekly collections of yellow pan traps were used to study dispersing aphids throughout the year. Cohorts of sentinel plants, 2-3 true leaf virus-free cotton seedlings, were used in conjunction with these traps to monitor CLRDV spread each week. Monitoring was conducted in south, central, and north Alabama. Dispersing cotton aphid populations peaked in summer and fall, coinciding with recorded positives of CLRDV in sentinel plants in all regions of Alabama. Fewer positives were recorded in north Alabama than the others, yet one possible explanation for this is the lower total recorded numbers of *A. gossypii* in that area. Other species trends in relation to sentinel plants and variation across the state will be discussed.