

RAPID SCREENING FOR RESISTANCE TO CLRDV: DEVELOPMENT OF AN APHID ASSAY

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Abstract

Cotton leafroll dwarf virus (CLRDV) is the first reported virus to infect cotton in the Southeastern United States and there is no known resistance. In 2019, a field screening trial was planted at Auburn University that tested 1,500 cotton lines ranging from landrace to commercially released. 6% of the lines tested negative in both reps and were then subjected to an aphid assay in which CLRDV viruliferous aphids were placed on leaf discs taken from these lines. The assay demonstrated that 10 aphids per leaf disc resulted in the highest transmission. All lines that underwent the assay tested positive for CLRDV using molecular methods. This assay screened for true resistance and would not distinguish tolerance. However, it can be completed in under a month compared to the length of a full field season.