



—Scientific Note—

Resistance to Cucurbit Leaf Crumple Virus In Squash

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The cucurbit industry in Florida is under threat from damaging outbreaks of Cucurbit leaf crumple virus (CuLCrV), a whitefly transmitted virus. Epidemics caused by CuLCrV have intensified over the last few years causing some growers to abandon their fields or face greatly reduced yields. Management of CuLCrV is difficult due to the development of pesticide resistance in whitefly populations, lack of resistant commercial cultivars, as well as limited knowledge on the biology of the virus and its interaction with plant hosts. Cultural management options rely on suppression of whitefly populations using reflective mulches, removal of volunteer plants and crop rotation; however these are not wholly effective, especially under high whitefly pressure.

The goal of the current study was to identify squash germplasm resistant to CuLCrV under field conditions. One hundred and seventy accessions of squash (*Cucurbita* spp) were grown at the North Florida Research and Education Center–Suwanee Valley Experiment Station, Live Oak, FL. Twelve seedlings per accession were transplanted on plastic mulch in Sept. 2019, and data on disease severity were collected every week for 5 weeks. Molecular diagnosis to confirm infection with CuLCrV was done using PCR or RPA. Area under disease progress curve (AUDPC) was calculated to determine the rate of disease progression. It ranged from 0–1852 across all accessions. Forty-three accessions showed moderate disease severity (AUDPC = 100–400), while the majority (n = 116) of the accessions were highly susceptible, including the commercial cultivars (mean = 1286). However, 11 accessions (8 *C. pepo* and 3 *C. moschata*) did not develop any symptoms (asymptomatic). Identification of these accessions presents the first step toward development of commercial squash cultivars resistant to CuLCrV for growers.

Further studies are underway in the greenhouse to confirm resistance.

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