

Recovering from Hurricane Ian

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Effort Statement: Statewide survey of Hurricane Ian affected groves across the year.

Summary: Hurricane Ian harmed citrus trees in much of Florida, especially in the sweet orange growing areas. Reports from growers suggest that trees take a long time to recover from hurricanes. Unfortunately, we didn't know at what wind speeds or durations trees begin to see damage or how long they take to recover. We began this project to describe the recovery process as well as to document what grower practices protected trees from damage or helped trees recover more quickly. In 18 groves throughout the state, we followed trees of various varieties.

We observed that trees exposed to Category 1 winds, showed less defoliation initially, but the leaves were more stressed during the dry season. This is probably because the storm damaged the branches' ability to move water to the leaves, which only shows up later, when warm, dry weather causes high demand for water. Stronger winds showed more immediate damage, but less stress to new leaves in the dry season. Health of individual leaves recovered during the rainy season, while canopy recovery was slower. Canopy loss was still evident more than 15 months later in trees that had greater than 75 mph winds during Hurricane Ian. Gibberellic acid (GA) applications provided some

protection from Category 1 wind damage. Because of the effects of the hurricane on tree water transport capacity, treatments that improve water availability (frequent irrigation, particle film application) are most likely to hasten recovery.

Take Home Message:

- Hurricanes impact trees through both defoliation and damage to the xylem capacity to move water.
- Even trees with little obvious damage are stressed by dry and hot conditions in the following year.
- Windbreaks to reduce wind speed and GA can help prevent damage beforehand, while frequent irrigation and particle films can improve health during the recovery period.

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