

Improved Irrigation Practices to Enhance Fruit Growth and Retention in Huanglongbing-affected Sweet Orange

Researchers: Tripti Vashisth

Contact: Tripti Vashisth,
tvashisth@ufl.edu

UF/IFAS CREC

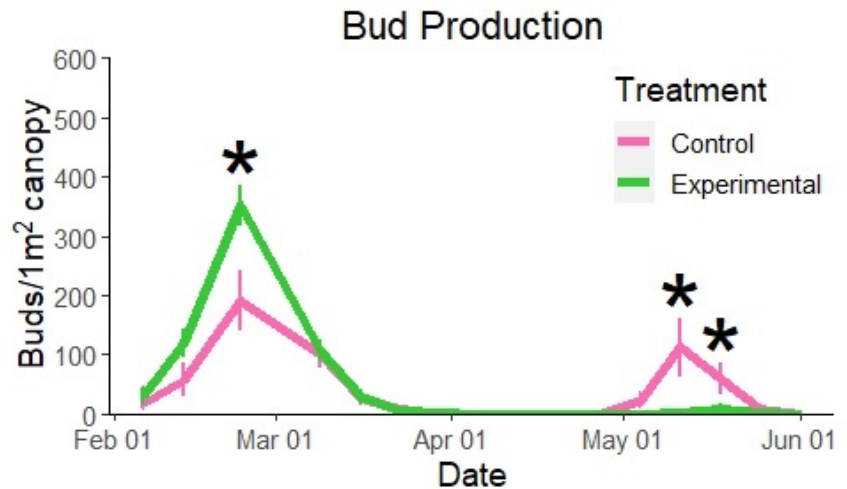
Take Home Message:

- Canopy density largely limits flowering, fruit set, and final fruit numbers.
- Mildly affected HLB trees experience less water deficits than severely affected trees.
- Frequent, small doses of irrigation increase bud production, fruit set, and improves yield.

Summary: Huanglongbing (HLB) severity is associated with small fruit sizes and lower fruit numbers at harvest. Moreover, small fruit are more likely to drop and drop earlier during pre-harvest fruit drop. Unfortunately, management practices suggested to increase fruit size or

reduce drop have had mixed results. So, before looking for ways to increase fruit size and number, we need to first identify when and why differences in size and retention occur. To do this, we followed fruit on mildly and severely symptomatic trees from bud to harvest. Mild trees had a higher rate of flowering and fruit set suggesting HLB affects fruit number early on. Mild trees have a denser canopy with more fruiting wood and better source-to-sink ratio available for flower and fruit production. Maintaining canopy density should be a priority in maintaining fruit numbers. While HLB-affected trees are more susceptible to drought stress, mild trees experience less water deficits. This may

contribute to their improved flowering and fruit set as these processes correspond with the Florida dry season. We are currently investigating irrigation practices to further mitigate this susceptibility. The experimental treatment involved irrigating three times daily for twenty minutes each while the control involved irrigating every other day for two hours. The experimental schedule increased bud production, fruit set, and improved yield at harvest. Trees under the control regime experienced a late burst of flowering consistent with drought stress. This was not seen in the experimental schedule suggesting frequent, smaller doses of irrigation maintain trees in a well-watered state.



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