

Assessment of Asian Citrus Psyllid Populations and its Biological Control in High-Density Citrus Plantings

Researchers: Jawwad A. Qureshi, Jean Berisse, Ute Albrecht

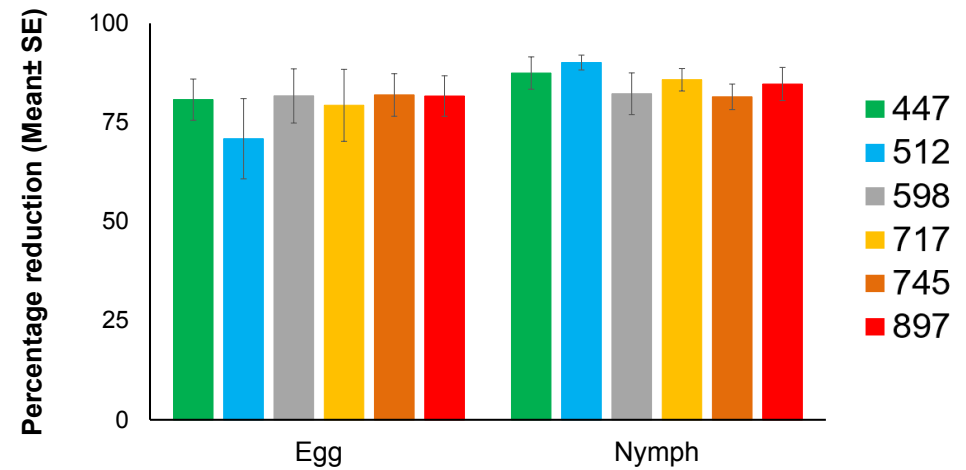
Contact: Jawwad A. Qureshi, jawwadq@ufl.edu

UF/IFAS SWFREC

Take Home Message:

- Shoot infestation with ACP increased with the increase in planting density.
- Lacewings, ladybeetles, and spiders were abundant in all planting densities.
- Developing colonies of ACP immatures suffered significant mortality in all densities.

Summary: The Asian citrus psyllid (ACP), *Diaphorina citri* is the vector of huanglongbing (HLB) or citrus greening. There is no cure for the disease yet. Several strategies, including high-density plantings (HDP), are being tested to increase profits in the early years of tree production. We conducted experiments to investigate



Percentage reduction in the immatures of ACP in developing colonies in different density plantings (trees/ha)

the influence of different planting densities on ACP populations and its natural enemies. The experiments were conducted at the UF/IFAS Southwest Florida Research and Education Center, Immokalee on four-year-old 'Valencia' sweet orange (*Citrus sinensis*) trees budded on 'US-897' (*C. reticulata* × *Poncirus trifoliata*) rootstock. Six planting densities were investigated at 447, 512, 598, 717, 745, and 897 trees per hectare. We assessed the incidence of ACP, natural enemies, and biotic mortality in ACP populations. There were 54-56% more shoots in the planting density of 897 trees per ha than 447 trees per ha between 2021 and 2022. The shoot infestation with ACP immatures increased by 6-9%

with the increase in planting density from 447 trees per ha to 897 trees per ha. There was a positive relationship between the increase in shoot density and infestation rate. However, the effect of HDP on adult ACP was not as consistent as seen with the infestation rate in shoots. The natural enemies including lacewings, ladybeetles and spiders were abundant in all planting densities and showed significant potential in reducing ACP populations. There were no significant differences in the biotic mortality of ACP immatures among planting densities, which averaged 49-99% between colonies initiated from eggs or nymphs of ACP.

Funding:

UF | IFAS
UNIVERSITY of FLORIDA