Cooperative dormant spray program against Asian citrus psyllid in SW Florida

By Phil Stansly, Alejandro Arevalo, Mongi Zekri and Ron Hamel

> Stansly Phil 8 hotos

he Asian citrus psyllid Diaphorina citri vectors the bacteria Cd. Liberibacter asiaticus, causing citrus greening disease or Huanglongbing (HLB). In Florida, HLB was first detected in 2005 and has already caused tree decline in many groves in the southern tier of the state's citrus belt.

During late fall and early winter, weather in Florida is generally dry and cool, causing citrus trees to cease producing new foliage that psyllids depend on to lay eggs and reproduce. Adults must then "overwinter" by feeding on mature leaves until the spring flush, generally in mid- to late-February.

An effective tool to suppress the pest is the "dormant spray", a foliar application of insecticide directed against overwintering adults. The dormant spray attacks the pest at its weakest point, when beneficial insects like ladybeetles and lacewings are generally absent from the groves. The larger the treated area of citrus, the greater the effectiveness of dormant sprays.

BY AIR AND GROUND

The 2008-2009 cooperative dormant spray effort promoted by Gulf Citrus Growers Association in Southwest Florida covered almost 80.000 acres by air and most of the rest of the citrus acreage in the five-county region by ground. Professional applicators were contracted by the growers to apply precision aerial sprays, and ground sprays were either contracted or applied by growers themselves.

Data on psyllid populations before, immediately following, and several months after the applications was obtained by a scouting team from the Florida Department of Agriculture



and Consumer Services (FDACS) Citrus Health Response Program (CHRP) or the grower's scouting team. The UF Cooperative Extension Service surveyed grower responses to the program and UF-IFAS provided analyses.

Psyllid adults were surveyed in November 2008, and February and May 2009 using a "tap" sample, striking a branch under which is held a white laminated sheet upon which the insects fall and can be counted.

Comparing the November and February samples, the initial effect of aerial sprays was to reduce the population by 60 percent, while ground sprays reduced an initially higher population by 74 percent (see chart). However, populations more than doubled during this time in the only untreated block that could be identified. Much greater differences were seen in May-June, four to six months after treatment. By then, psyllid populations in blocks sprayed

by air or ground had only increased by 50 percent or 83 percent, respectively, compared with pre-treatment levels, whereas psyllids in untreated blocks increased a full 28-fold (2800 percent)!

GROWER PRACTICES

This summer, we surveyed growers in Southwest Florida about their psyllid management practices, receiving 22 responses representing citrus groves ranging from 90 acres to 15,000 acres for a total of nearly 67,000 acres. All had applied at least one dormant spray with an average of 1.6 sprays, 70 percent by air. All planned on spraying again this dormant season.

Monitoring psyllids was part of almost everyone's program, with all but 18 percent scouting more than three times a year. Thirty-two percent, representing more than 36,000 acres, indicated that they scouted more than 12 times a year. Methods used were

the tap sample (76 percent), flush inspection (62 percent) and sticky traps (10 percent).

The number of sprays during the growing season through August averaged 3.4 with 40 percent going out by air. Seventy-seven percent said they were very satisfied or somewhat satisfied with their program. However, 68 percent said they were seeing increased problems with secondary pests, including leafminers (47 percent), scales (27 percent) and mites (23 percent).

There has clearly been good buy-in by growers to this voluntary program.

This season, we are recommending two dormant sprays, one before and one after the first of the year. Future plans are to reinforce the effect of dormant sprays with mass release of beneficial insects such as the parasitic wasp *Tamarixia radiata* early in the growing season. The hope is to reduce or even eliminate the need for additional insecticidal sprays to control the pest during the growing season.

Phil Stansly and Alejandro Arevalo are



Average number of adult psyllids counted per 10 tap samples before, immediately following and four to five months after dormant sprays.

with UF-IFAS, Immokalee; Mongi Zekri is with UF-IFAS Cooperative Extension,

LaBelle; Ron Hamel is with Gulf Citrus Growers Association, LaBelle.