

SAP Meeting 31 May 2017

SAP members present on the teleconference call: Tim Gottwald, Beth Grafton-Cardwell, Mark Hoddle, Charla Hollingsworth, Joseph Morse, Mamoudou Setamou, and Georgios Vidalakis

Public presentations were made via webinar to the committee and other attendees (9-11 am):

Update on ACP in California - Victoria Hornbaker

Update on HLB in California - Debby Tanouye

ACP and HLB Response Protocols - Debby Tanouye

Nursery Update - Nawal Sharma

Questions and Answers - Jason Leathers

At 11:00 am the public portion ended and the committee members began a discussion of the CPDPC finance committee's request for recommendations. Rather than review the CPDPC's questions point by point, we chose to have a general discussion of how to direct activities and resources to achieve the best control of huanglongbing (HLB) possible given it is an increasing problem and resources are limited. Respectfully, it was not feasible for us to quantify likely outcomes in the way the CPDPC Budget TF Subcommittee requested because there are too many unknowns, especially the current distribution of the bacterium CLas in California. We were uncomfortable in considering costs of activities, but focused on the best control of HLB in light of the current situation.

For the purpose of this discussion, regulatory qPCR positive trees are those whose tests result in <37 CT values with confirmation by APHIS, while an inconclusive category should be added as a non-regulatory, decision threshold for producers and industry at 37-37.99 CT values, and negatives should be represented by CT values of 38-40. For ACP, positive psyllid results have ≤ 32 CT values, inconclusives have 33-37.99 values and negative psyllids have 38-40 CT values. Note that we are not suggesting that regulatory agencies revise their validated work instruction thresholds, only that industry should consider trying to influence growers and homeowners to take more aggressive action by removing trees at higher, inconclusive CT plant thresholds and/or based on the presence of CLas in psyllid nymphs found on a tree, in addition to actions taken based on the currently mandated regulatory CT levels.

General recommendations:

1. We recognize that detection by PCR lags behind infections because of the difficulty in sampling at a level sufficient to detect CLas and because the current regulatory thresholds for action are conservative. Going forward, tree removal efforts must be expanded beyond regulatory PCR positive trees. That is, the industry must take action against trees or insects with CT values <38 whether or not they are considered regulatory positives. In addition, the citrus industry should use EDT methods when their effectiveness is validated to increase tree removal activities.

2. We suggest that the citrus industry Intensify activities and resources in the San Joaquin Valley where the bacterium and the psyllid have not become well-established and where increased efforts could postpone their establishment. It is critical to protect the citrus in this region by more aggressive psyllid control and expanded tree removal in both urban and commercial citrus.
 - Increase resident CDFA manpower in Fresno, Tulare and Kern counties to be able to respond more quickly.
 - Conduct a higher level of HLB risk survey in the SJV (we recommend 4 cycles/year).
 - More aggressively manage psyllids in both urban and commercial citrus in the SJV with the goals of postponing their establishment and minimizing disease spread.
 - Minimize the human-assisted spread of psyllid and HLB movement from southern California to the SJV in as many ways as possible.
3. Conversely, reduce activities (see below) in many areas of southern California where the disease detection and tree removal is no longer keeping pace with disease spread and instead use those resources in the San Joaquin Valley.
4. Promote the testing and validation of EDTs throughout California, especially when positive or inconclusive decision thresholds of trees are met. Have mechanisms in place to utilize the time between first detection and confirmation of the disease to test the tree with EDTs, prior to tree removal.
5. Growers should be prepared to remove all trees with <38 CT values. As EDTs are verified, they can be used to help make non-regulatory tree removal decisions.
6. Biological control agents: generalist predators and parasitic wasps have not been demonstrated to stop disease spread. There is currently insufficient research to demonstrate that commercially-reared predators would reduce ACP levels sufficiently (such research should be done realizing it is unlikely that disease spread will be affected). *Tamarixia* releases should continue in areas of concern in southern California and releases should shift to the San Joaquin Valley as the psyllid becomes established there. It is a bit early to properly evaluate *Diaphorencyrtus* establishment and impact in southern CA, and thus, that work should continue for now.

Southern California

The committee was in agreement, that the increasing number of CT values in the range of 37-37.99 for plants and 33-37.99 for ACP, indicate that the CLas bacterium has spread well beyond Los Angeles and Orange counties and the current activities of testing and tree removal will not stop this spread. The regulatory inconclusive CT values for ACP are frequently leading the sampling teams to the regulatory PCR positive trees, however, lack of removal of the trees with higher decision threshold CTs is likely leaving a reservoir of CLas that is being spread by psyllids. Based on the pattern of inconclusive CT values, HLB is not just found in the HLB quarantine areas, it has spread through much of southern California (Los Angeles, San Bernardino, Riverside, Orange, Imperial and San Diego counties).

Recommendations:

- Reduce the high-risk survey to 1 cycle per year in southern California (inland and the coast), continuing to identify regulatory PCR positive trees and mandatorily removing them.
- Request that homeowners, in addition to the mandated conclusive PCR positive trees, voluntarily remove all decision threshold inconclusive PCR trees (including those with immature ACP <38 CT value) and replant with something other than citrus.
- Stop buffer treatments in residential areas around commercial citrus in Los Angeles, Orange, San Bernardino, Riverside (with the exception of around UCR), and San Diego counties.
- Consider continuing residential buffer treatments in Imperial and Ventura counties for PMAs that have 90% grower participation during areawide treatments and as long as decision threshold inconclusive CT value trees remain at low frequency and regulatory positive trees are not detected. This subject needs more detailed analysis and discussion.
- Increase plant sampling, tree removal activities and ACP urban treatments around the UCR Rubidoux facility, CDFA *Tamarixia* rearing facility, and UC Riverside citrus plantings to preserve precious germplasm and protect research programs.
- Continue the ACP urban buffer treatments along the Mexico border.
- ACP trapping should be stopped in much of southern California, but continue 2 miles north of the Mexico border, Imperial County, Ventura County and around UC Riverside where buffer treatments around commercial citrus occur. This subject needs more detailed analysis and discussion.
- Prepare to shift releases of *Tamarixia* from southern California to the San Joaquin Valley when the ACP population becomes better established in that region.

San Joaquin Valley California

Put greater effort into protecting commercial citrus in the San Joaquin Valley, since the incidence of ACP is still low and PCR positive trees and psyllids (thus far, only regulatory inconclusive PCR positives) are rare. Continue to aggressively reduce psyllids so that they do not become established and do not pick up and spread CLAs.

Recommendations:

- Increase the high risk survey for HLB to 4 cycles to improve detection of decision threshold inconclusive and regulatory PCR+ trees and remove both types of trees.
- Increase ACP trapping and treatments around trees with <38 CT values (both urban and commercial citrus) and remove both positive and decision threshold inconclusive CT value trees when found.

- Increase the general program of voluntary residential citrus tree removal in areas where CT values are <38 and/or where psyllids are found repeatedly, as has been done in Kern County.
- Continue treating ALL psyllid find sites (1 or more psyllids triggers a response) and surrounding citrus at the 400 meter distance for residential and 800 meter distance for commercial citrus. There was discussion, but not total agreement, on the subject of expanding the treatment distance around find sites even further (as much as 1.2 miles because of the distance that psyllids can fly) to more aggressively locally eradicate/suppress psyllids in the SJV.
- Treat residential citrus in the buffer areas 400 m around commercial citrus when growers conduct coordinated treatments.
- Release *Tamarixia* and *Diaphorencyrtis* in urban areas in the San Joaquin Valley as ACP populations develop.