Citrus Pest and Disease Prevention Committee (CPDPC)
Interim Science and Technology Subcommittee Meeting
October 5, 2020 Minutes

There was a quorum of the Science Committee and the following were in attendance:

Science Committee Members Present:

Dr. Ed Civerolo*	Kevin Olsen*	Ram Uckoo*
Aaron Dillon*	Dr. Etienne Rabe*	Jack Williams*
Dr. Melinda Klein*	Dr. Monique Rivera*	

CDFA Staff:

Karina Chu*	Karla Huerta*	David Phong*
Kiana Dao*	Anmol Joshi*	Lydia Rodriguez*
Paul Figueroa*	Zack McCormack*	Michael Soltero*
David Gutierrez*	Jana Miscevic*	Jennifer Willems*
Amelia Hicks*	Alex Muniz*	
Victoria Hornbaker*	Keith Okasaki*	

Other Attendees:

Bob Atkins*	Lisa Finke*	Cressida Silvers*
Holly Deniston-Sheets*	Jonathan Kaplan*	Dr. Greg Simmons*
Rick Dunn*	Dr. Neil McRoberts*	Sandra Zwaal*

*Participated via webinar

Opening Comments:
Dr. Etienne Rabe called the meeting to order at 2:02 pm. Dr. Rabe started the meeting by stating the Subcommittee's task is to quantify the effect of the current southern California residential program including risk-based survey, tree removal, and pest mitigation to curb the Huanglongbing (HLB) threat to California's citrus industry. Dr. Rabe further noted the following factors to consider, including timelines and workload for executing actions, effectiveness of finding HLB positive trees, the reservoir of asymptomatic polymerase chain reaction (PCR) negative trees, costs of actions, etc.

Background: Data and Projections
Dr. Neil McRoberts gave a presentation on the Data Analysis and Tactical Operations Center (DATOC) and provided a recap of DATOC's task which is to analyze data and activities to aid in slowing the spread of HLB into commercial groves until a permanent solution is found.

<u>Tree Removal Data and DATOC Models</u>
Dr. McRoberts presented on the projected expenditures for the 2019-2020 fiscal year. He stated that HLB delimitation surveys, treatment, and removal of positive trees are 26 percent of the total budget ($35 - $40 million). Survey work beyond this, including international border survey and surveys elsewhere is 18 percent of the cost of the

program budget. Diagnostics for trees and ACP combined is 15 percent of the program budget.

Dr. McRoberts discussed the costs to survey commercial perimeters. The hypothetical HLB detections and the resulting 400-meter delimitation zone to help project activity costs utilizing a diagnostic fee of $20 per sample. In response to the costs, Victoria Hornbaker stated that the costs shown may reflect the Central California Tristeza Eradication Agency lab costs, and not the California Department of Food and Agriculture (CDFA) or Citrus Research Board (CRB) lab costs. She further stated that in response to HLB, the diagnostics are done by the CDFA lab and that the current delimitation is done in a 250-meter area. If a grove is within 250 meters of an HLB detection, the entire perimeter of the grove would be surveyed, she added. Holly Deniston-Sheets said CDFA has previously stated their diagnostics cost are $22 per sample as opposed to $20 per sample.

Dr. McRoberts discussed pre- and post-tarping regulations and the observed difference in psyllid detections between California and Texas trends as a result of tarping. California has not seen the rapid increase in the proportion of bacterialiferous psyllids that was observed in Texas, where now about 60 percent of the population appears to have a high bacterial load. Dr. McRoberts speculated that this difference could be a result of California's HLB program activities that continuously interrupt the feedback loop between infected trees and the psyllid population, which may help keep the pathogen load in the vector population at a low level.

Dr. Melinda Klein added that there are significant differences in HLB response activities between Texas and California. In 2015, Texas stopped removing HLB positive trees, but the state does have a biocontrol program. She noted she is unsure if they currently employ an areawide treatment program after discontinuing the removal of HLB positive trees. Dr. McRoberts responded that there is a well-coordinated treatment schedule that Texas commercial growers tend to follow.

Dr. McRoberts shared work completed by Dr. Weiqi Luo that displays projections and estimates of the residential incidents of infected trees by square mile (created September 2019). The map provides an estimate for HLB incidents of many of the Section-Township-Range (STR) squares across southern California. If the false negative rate of PCR sampling is accounted for, there may be square miles in southern California where there is a high proportion of trees already infected with CLas. The Subcommittee requested an updated version of this map.

Dr. McRoberts stated the proximity of commercial citrus to residential properties influences the risk of detecting HLB at those residences. Risk layer calculations lead to a selection of STRs that are selected for survey. Those STRs are then surveyed according to protocol.

Dr. McRoberts proposed a "defensive border" where the industry can adopt a more defensive approach and focus activities around commercial citrus. HLB risk-based

survey currently covers about 1,000 square miles each year and HLB delimitation zones add an additional 25 square miles. Ms. Hornbaker clarified that when doing risk-based survey, CDFA focuses on the square miles identified as highest risk, and the surveying of the properties in those square miles are conducted randomly as opposed to surveying every property.

If a "defensive border" approach is implemented, a one-mile containment area around existing detections would result in a 290 square mile survey area. A two-mile defensive buffer would result in a 400 square mile survey area, which equates to roughly 40 percent of the current risk-based survey area.

DATOC discussed a regionally tailored program when evaluating the environmental suitability for ACP as a possible cause for why HLB is progressing more slowly in California than other citrus production areas. Graphs were shown illustrating that San Diego has about 75 percent occupancy of the commercial grove traps and the traps screened typically resulted in finding at least one ACP. Conducting pesticide applications when the seasonal environmental climate is favorable for eliminating ACP was discussed.

Other options discussed were to switch the focus from HLB eradication to ACP management, or to quickly contract with ACP-detector dogs to scout areas without established ACP populations.

Kevin Olsen, regarding the focus of HLB eradication to ACP management, would like to know what criteria would be used to change strategies to go between the two, and what would be the advantages and disadvantages.

<u>Southern California HLB Program Cost</u>
Anmol Joshi shared a presentation regarding the total number of HLB positive trees from 2012-2020, adding that over the weekend prior to the Subcommittee meeting, four more positive trees were found in Orange County. In 2020, 13 positive trees were found in San Bernardino compared to only two in 2019. Of the 13 trees, five were found in the Rancho Cucamonga area, which brought that area under a five-mile radius quarantine. The total number of HLB positive trees in California to date is 2,102. Mr. Joshi shared the optimum and average timelines for removing HLB positive trees. Dr. Klein asked to have the real-time timeline for HLB positive tree removal displayed at the next meeting.

Mr. Joshi further shared that the HLB quarantine area encompasses 1,415 square miles, wherein regulatory activities are conducted. Since scaling down from a 400-meter treatment area to a 250-meter treatment area, the amount of properties and square miles treated has reduced significantly. He further stated that in Los Angeles, 8.52 square miles have been treated; roughly 1.5 percent of the total quarantine area.

Ms. Hornbaker stated that the information presented by Mr. Joshi is in response to HLB detections only, but areawide buffer treatments are also conducted around the commercial citrus. She further noted that the find site and adjacent properties are

treated with residential concurrence as quickly as possible. Treating find sites and adjacent properties serve as initial knock down, but it can take some time to treat the rest of the area.

Dr. McRoberts added that ACP in these areas potentially have a high bacterial load, making eradication a top priority. Ms. Deniston-Sheets added that biocontrol releases are also occurring outside of the quarantine areas which maximizes the effective range of treatments.

Dr. Rabe noted that treatment is not areawide but pinpointed and stated that even on the optimal timeline, it takes at least three weeks from the date the sample is collected until the treatment and the tree is removed. He further noted that sometimes takes two to three months to treat the area from the detection date. Ms. Hornbaker identified the delay is a result of the sample processing and the time for public notifications and noted the comparatively low incidence of *C*Las positive psyllids collected by CDFA. Dr. Rabe noted the importance of ensuring we are being effective under the current constraints.

Mr. Joshi explained that CDFA does not normally collect plant samples from asymptomatic trees during risk-based survey, but if psyllids are observed on the tree, CDFA will collect 20 leaf samples from the tree. Due to COVID-19, the number of sites visited and treated, and samples collected in delimitation and risk surveys, is lower in 2020 compared to previous years.

Closing
Dr. Rabe adjourned the meeting at 3:33 pm. The next meeting will be held via webinar on October 29, 2020.