Citrus Pest and Disease Prevention Committee (CPDPC)
Science and Technology Subcommittee Meeting

Meeting Minutes
February 14, 2024

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

Science Subcommittee Members Present:

Franco Bernardi	Jim Gorden	Dr. Etienne Rabe
Brad Carmen	Dr. Subhas Hajeri	Dr. Ram Uckoo
Aaron Dillon	Dr. Melinda Klein	

CDFA Staff:

Dr. Ravneet Behla	Victoria Hornbaker	Raymond Niem
Kiana Dao	Anmol Joshi	Keith Okasaki
Paul Figueroa	Lucita Kumagai	David Phong
David Gutierrez	Alex Muniz	Nilan Watmore

Other Attendees:

Dr. Jim Adaskaveg	Dr. Saurabh Gautam	Kurt Metheny
Alejandro Alaniz	Dr. Jonathan Kaplan	Dr. Ivan Milosavljevic
Dr. Bodil Cass	Dr. Weiqi Luo	Dr. Sandra Olkowski
Dr. Robert Clark	Marcy Martin	Cressida Silvers
Richard Dunn	Mark McBroom	Keith Watkins
Dr. Dhiraj Gautam	Dr. Neil McRoberts	Sandra Zwaal

All attendees participated via webinar.

Opening Comments
Chair, Dr. Etienne Rabe called the meeting to order at 10:02 a.m. Dr. Rabe introduced Dr. Ravneet Behla, a Senior Environmental Scientist for the Citrus Pest and Disease Prevention Division (CPDPD). Dr. Behla will now be coordinating the CPDPC Science and Technology Subcommittee meetings, formerly led by Keith Okasaki.

Ethyl Formate Update
Jim Cranney updated the committee on Ethyl formate registration process. He noted that the Environmental Protection Agency (EPA) is expecting the product to be registered by April 1, 2024.

Sweet Orange Scab (SOS) Update
Dr. Jim Adaskaveg updated the committee on SOS detection results from his lab. He stated that his lab has not been able to validate the SOS detections that were positively confirmed by the California Department of Food and Agriculture (CDFA). Dr. Adaskaveg's lab has been following protocols set by Hyun et. al., (2007). He further

noted that they used five PCR based molecular markers to identify SOS. Only one primer pair was able detect two samples out of 29 sent by CDFA and the remaining samples tested negative for SOS. The primer pair that detected positive sample, has also been shown to amplify a type of yeast not related to SOS which could result in false positives. Dr. Adaskaveg's lab was able to validate a reference culture of SOS sent from Florida using the five primer pairs. Ms. Hornbaker noted that CDFA lab follows the work instruction provided by the United States Department of Agriculture (USDA). Dr. Adaskaveg noted that he will follow up with CDFA's lab, and others to confirm testing protocols to ensure all diagnostics steps are consistent.

Huanglongbing (HLB) Genotyping

Lucita Kumagai provided an update on genotyping work that was performed by the USDA. Six DNA samples were sent to the USDA lab; comprised of four samples from Santa Paula in Ventura County and two samples from Valley Center in San Diego County. All samples were classified as *C*Las Type 1 group, which is most prevalent in California and makes up 70% of the strains identified. Ms. Kumagai noted that these findings suggest that the detections in Santa Paula and Valley Center are likely spread from local *C*Las positive source rather than new introductions.

Multi-Pest Survey Report

David Phong reported on the 2023 multi-pest survey cycle 2, which started in August 2023, is 46% complete. The survey is complete in nine of the 34 counties assigned. To date, 5,747 properties have been surveyed with 1,649 samples taken. With current staffing shortages due to various fruit fly projects, the goal is to have this cycle completed by the end of April.

Data Analysis and Tactical Operations Center (DATOC) Update

Dr. Robert Clark provided an update on the effectiveness of *C*Las positive (*C*Las+) tree removal based on timeliness of removal. He noted that quick removals were classified as trees that were removed less than 40 days from initial detection, while slow removals took more than 40 days to remove. Dr. Clark looked at 1.4 km^2 grids where a *C*Las+ tree was removed and had subsequent detections of *C*Las+ trees. Findings showed that the cycle threshold (CT) values were higher at locations with quick removals, meaning the trees had lower inoculum levels of HLB. Dr. Clark reported that HLB-positivity rates in quick removal locations were much lower with a rate of 11.7%, whereas slow removals had a rate of 22.4%. Dr. Clark concluded that quick tree removals appear to be impactful in small areas and can help reduce the HLB disease reservoir. Dr. Clark further noted that DATOC is continuing their analysis to examine how quick removals affect HLB reservoirs on a larger scale.

HLB Prevalence Report

Dr. Weiqi Luo presented the analysis results titled "Actual HLB Situation Estimation in Southern California". He collaborated with Dr. Neil McRoberts for this study. Dr. Luo started with an update on the current status of HLB in Southern California. He noted that they used the binomial probability theory to estimate HLB prevalence and provided estimated minimum and maximum HLB prevalence rate in each STR. Based on the

analysis, Dr. Luo concluded that Riverside, San Bernardino, San Diego, and Ventura Counties are still within the early phase of HLB infection and may avoid exponential growth with increased efforts. Orange County shows greater clustering of HLB detections. He notes that 25 % of Orange County area has confirmed HLB infected trees. Assuming ACP can spread up to 5 Kilometer from a confirmed HLB location, he estimates that HLB infected trees could potentially be as high as 60% of the county area. Dr. Luo noted that the analysis will help inform decisions for best management practices and efficient allocation of resources. Dr. Rabe noted that these analysis results will be discussed in detail in the next subcommittee meeting.

Other Items and Adjournment
The meeting was adjourned at 12:01 p.m.