

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

**Meeting Minutes  
June 8, 2023**

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

**Science Subcommittee Members Present:**

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

**CDFA Staff:**

Fernando Berber	Marina Kaiser	Keith Okasaki
Kiana Dao	Sara Khalid	Lea Pereira
Paul Figueroa	Daniel Lee	David Phong
Stephanie Fragoso	Zachary McCormack	Rathkiry Siv
David Gutierrez	Jeremy Morales	Nilan Watmore
Victoria Hornbaker	Alex Muniz	Jennifer Willems

**Other Attendees:**

Dr. Robert Clark	Jasmine Lopez	Dr. Georgios Vidalakis
Rick Dunn	Dr. Neil McRoberts	Judy Zaninovich
Dr. Jonathan Kaplan	Dr. Sandra Olkowski	Sandra Zwaal
Jessica Leslie	Cressida Silvers	

All attendees participated via webinar

**Opening Comments**

Dr. Etienne Rabe called the meeting to order at 1:05 p.m. Dr. Rabe welcomed and introduced Dr. Robert Clark, who recently joined the Citrus Research Board (CRB) Data Analysis and Tactical Operations Center (DATOC) as a consultant.

**Review Science Advisory Panel (SAP) Recommendations**

**Ethyl Formate**

Dr. Rabe gave an update regarding Ethyl Formate registration on behalf of Jim Cranney. The Environmental Protection Agency (EPA) issued another 75-day deficiency letter in mid-May on the Ethyl Formate application and has requested additional information regarding tarp leakage and label language for chamber fumigations. Mr. Cranney's team submitted a response to the request for additional information, and the new Ethyl Formate registration date has moved to August 1<sup>st</sup> assuming no additional setbacks. Victoria Hornbaker asked if the EPA registration is running concurrently with

the California Department of Pesticide Regulation (DPR) registration, to which Dr. Rabe replied that DPR registration was not mentioned by Jim Cranney.

### **Regulatory Aspects**

Keith Okasaki gave an update regarding the Huanglongbing (HLB) Working Group, which met on March 30<sup>th</sup> to discuss regulatory items. Topics of discussion were validating quarantine requirements like tarping and other mitigations, grate cleaning, quarantine impacts on organic growers, exit strategies for removing counties from an Asian citrus psyllid (ACP) quarantine, and Animal and Plant Health Inspection Service (APHIS)-approved greenhouse breach policies. Another HLB Working Group meeting will be scheduled soon to discuss information that was requested to be gathered regarding these topics.

### **Risk-Based Survey**

The next topic of focus was discussion on the SAP's recommendation to deemphasize the risk-based survey (RBS) program in the core area of current HLB detections in southern California and concentrate surveys on the outskirts and commercial orchards by re-evaluating the weightings of the RBS factors. The weightings used in the southern California RBS model will differ from those used in the model for central and northern California. Dr. Ram Uckoo presented potential changes for weightings of the RBS factors as discussed in recent RBS Working Groups on May 3<sup>rd</sup> and May 25<sup>th</sup>. Military & Native Lands were removed as an RBS factor after these discussions. The RBS factors were given evidence-based weightings between zero and one based on current data and are presented as a percentage. The risk factors and recommended weightings for southern California RBS include eight percent for Introduction Risk (Census Travel), 40 percent for ACP Density, 40 percent for *Candidatus Liberibacter asiaticus* positive (CLas+) locations, one percent for Plant Nurseries & Big Box Stores, one percent for Citrus Roads, two percent for Packing Houses, six percent for Farmers Markets (Swap Meets/Flea Markets), and two percent for Organic Citrus. Dr. Rabe asked how ACP Density is determined in residential areas, to which Dr. Uckoo answered that they use ACP detections as well as past ACP trapping data. Mr. Okasaki added that the California Department of Food and Agriculture (CDFA) does not perform any general ACP detection trapping in southern California as the area is considered generally infested; some ACP trapping is performed at packinghouses for export purposes. Ms. Hornbaker added that CLas+ ACP specimens confirmed at the CDFA lab are also counted for the ACP density factor, but ACP detections from trapping performed during coordinated treatments around commercial citrus groves are sent directly to the Citrus Research Board lab in Riverside for CLas testing and are not counted as ACP detections. Dr. Rabe asserted and Mr. Okasaki agreed that the lack of current ACP population data for the ACP density risk factor could be a drawback to the model and are concerned with the high weighting for this factor.

Dr. Neil McRoberts expressed his concerns that running the proposed RBS model with the new weightings would focus the surveys more in the core urban areas of current HLB detections rather than the current RBS model unless other criteria are added. Dr. Uckoo stated that under the proposed model, 50 percent of survey efforts are adjusted

towards the buffer zone for properties within one mile of commercial citrus to account for the interface between residential and commercial citrus. Dr. Subhas Hajeri stated it was decided that proximity to commercial citrus was to be used for operational purposes, and not for the RBS model itself. Dr. McRoberts and Ms. Hornbaker suggested that distance to commercial citrus should be added as a risk factor and given a weighting to achieve the SAP's recommendation of emphasizing survey efforts around commercial citrus groves. David Phong added that for current survey grids selected by the RBS model, grids that are near commercial citrus groves are selected to increase the sampling density by 25 percent. This increase in sampling density is done as an extra step after the RBS model is run and does not affect which grids are selected. Mr. Phong continued that the point of the RBS model is to assign risk values to survey grids, therefore grids at and around ACP and HLB detections have a higher risk and should have a higher risk value. However, the current model also has a factor to select random grids that have a lower risk value for sampling to cover other areas apart from the core HLB area. Dr. McRoberts and Dr. Melinda Klein expressed concern that the proposed risk factor weightings and adjustments for 50 percent of surveys to be focused in the residential and commercial citrus buffer zone would emphasize risk survey grid selections around commercial groves in the core area. The group agreed more discussion is needed on the data collected for each of the risk factors and the ideology for the weightings for each of the risk factors. Dr. McRoberts asserted that the logical path to reassessing the RBS model would be to discuss how much effort overall should be allocated to the urban core and commercial citrus, then to run a risk-based model that prioritizes risk factors to optimize surveying.

Dr. Uckoo continued with the proposed weightings for risk factors in the central and northern California RBS model. The risk factors and recommended weightings for central and northern California include 12 percent for Introduction Risk (Census Travel), 40 percent for Asian Citrus Psyllid (ACP) Density, 20 percent for CLAs+ Locations, three percent for Plant Nurseries & Big Box Stores, six percent for Citrus Roads, six percent for Packing Houses, eight percent for Farmers Markets (Swap Meets/Flea Markets), and six percent for Organic Citrus. Dr. Uckoo noted that there are no CLAs+ finds in central and northern California. Introduction risk is given a higher weighting for this model due to the risk of travelers bringing unregulated citrus north from southern California, and the highest weighting is given to ACP Density. Weightings for plant nurseries are lower in comparison due to regulatory interventions. Ms. Hornbaker expressed concerns with the weightings due to the high amount of ACP detections at packinghouses and organic citrus groves even with tarping and other regulatory interventions. A reassessment of the weightings and other factors will be discussed in future RBS Working Group meetings.

### **Batch Sampling**

Dr. Klein stated that to move forward with implementing the mass grove sampling approach, the United States Department of Agriculture (USDA) APHIS would need to review and approve of the approach. Dr. Klein added there is currently not an established methodology for detecting the bacteria is a large number of leaves but is working with the Citrus Tristeza Agency (CCTEA) and using Citrus Tristeza Virus as a

testing model. Dr. Rabe, Dr. Klein, and Dr. Hajeri agreed that the testing protocol needs to be worked on and validated. Ms. Hornbaker reiterated that approval and permitting from USDA and CDFA is needed.

### **DATOC**

Dr. McRoberts continued the meeting by discussing recent DATOC projects, including analyzing recent trends in HLB in southern California. Dr. McRoberts presented an overview of recent trends which have shown that there has been an increase in detections of CLas+ trees and ACP, an increase in the percentage of plant and ACP samples positive for CLas, and an increase in the bacterial load of CLas in ACP samples based on CDFA lab data through mid-February 2023. Dr. McRoberts ascertained that this increase could be driven by intensive sampling in Orange County in response to HLB detection delimitations, as there could be a bias from sampling in areas that are more saturated with CLas. Titer levels for CLas in ACP and in infected trees have been lower in California than in other states/areas where the disease has been detected, but CLas levels are increasing to be close in comparison. According to Lucita Kumagai's data from CDFA's lab, the CLas bacterial load is increasing. Minimum and maximum titer levels for CLas are higher than past trends and nearly all the samples are from Orange County. Because this data is largely driven by delimitations in Orange County, there might be a decreasing spike when more data is collected from other counties throughout the year, and therefore trends must be monitored to determine if the HLB epidemic is increasing. Dr. McRoberts lastly pointed out that plant and ACP sampling for CLas has decreased from a wider area to mostly the core HLB area compared to recent years, so it may be hard to tell if the epidemic is increasing if sampling is only occurring in the core. DATOC suggests that this gap in monitoring which could be remedied by changing trapping protocols in commercial groves.

### **Other Items and Adjournment**

The meeting was adjourned at 2:27 p.m.