

**CALIFORNIA CITRUS PEST AND DISEASE PREVENTION PROGRAM  
SCIENCE AND TECHNOLOGY SUBCOMMITTEE MEETING**

Meeting Minutes  
Tuesday, September 4, 2018

The Science and Technology Subcommittee meeting was called to order at 2:00 pm on September 4, 2018.

**Committee Members Present:**

Dr. Ed Civerolo*	Dr. Melinda Klein*	Kevin Olsen*
Aaron Dillon*	Dr. Jason Leathers	Dr. Etienne Rabe*
Dr. Beth Grafton-Cardwell*		

**Committee Members Absent:**

George McEwen

**Interested Parties:**

Craig Armstrong*	Karen Jetter*	Sylvie Robillard*
Bob Atkins*	Sara Khalid	Dr. Mamadou Setamou*
Jill Barnier*	Raymond Leclerc*	Greg Simmons*
Holly Deniston-Sheets*	Brianna McGuire*	Cressida Silvers*
Jim Cranney	Mark McBroom*	Roger Smith*
Rick Dunn*	Dr Beth Mitcham	Keith Watkins*
John Gless*	Tracy Moehnke*	Bob Wynn*
Jim Gorden*	Joel Nelsen*	Judy Zaninovich*
Subhas Hajeri*	Curtis Pate*	Sandra Zwaal*
Victoria Hornbaker	Lea Pereira*	

**\* Participated via Webinar.**

**Opening Comments**

Dr. Etienne Rabe welcomed the Subcommittee, staff, and members of the public participating in person and online. It was noted that there was a quorum for the meeting.

**Strategy 1-Quickly Detect and Eradicate Diseased Trees**

**Cost/Benefit Analysis Update**

Karen Jetter gave an update on the economic risk analysis of Asian citrus psyllid (ACP)/and Huanglongbing (HLB) management in Southern California. She stated that results were obtained for different costs for surveying using canines and people. The economic model is running, however there are still no results from Dr. Tim Gottwald's model. Different assumptions were calculated in Riverside, Los Angeles, and Orange counties. The first assumption was that all the section, township ranges (STR)'s would be included, which is 25 square miles. Dog teams and people teams would be used. For dog teams, it was asked how much one dog would be able to

cover in one year. It was determined that one dog would be able to survey between 50-75 houses a day. The team would consist of four dogs, two handlers, one California Department of Food and Agriculture (CDFA) representative, equipment, and personnel. In this scenario, they would be able to survey between 13,000 and 19,000 homes in one year. The cost would be the same. A one-person team would be able to survey 4,680 homes, with the assumption that 60 percent of the households will be surveyed once. This calculation is based on past averages. The cost to survey for this would be \$143,007. If the entire area was covered during a year, it was asked how many teams that would take and what the cost would be. For Riverside County, if the dog teams were able to survey 50 houses a day, nine teams would be needed, and they would be able to survey 118,000 houses, and the cost would be around 5.6 million. For people, 25 surveyors would be needed, the same number of houses would be surveyed, and that would cost 3.6 million. What was not included in this analysis are the benefits and how well the dogs will pick up the disease compared to people. This is included in Dr. Tim Gottwald's model. The next assumption was surveying within a two-mile radius of an infestation or looking at a two-mile radius around a commercial grove. The results for one dog and one person is the same for this scenario. 6,000 houses will be covered, and three dog teams will be needed. This will cost 1.7 million. If the number of houses increased per day from 50 to 75, that would cost 1.3 million. In a STR two miles within a commercial grove, only one team will be needed, and they would be able to cover between 13,000 and 19,000 houses. This will cost \$612,000. For a four-person team to cover 50 houses a day in this scenario, this would cost \$518,529. It was concluded that this model was still a work in progress and more work needed to be done to determine benefits. It was asked where the numbers for the costs came from, and Karen Jetter answered it was from CDFA. It was also asked why this analysis is being done, as dog teams are not a proven Early Detection Technology (EDT) method in California. It was also mentioned that there are other EDT tests that are ongoing in California, however, they are more expensive than the canines. It was mentioned that the people teams would be collecting samples for PCR testing, and the lab costs for the PCR is not included in the chart presented.

## **Strategy 2-Control Movement of Psyllids around the State: Regulations**

### **Post-Harvest Quarantine Treatment of Bulk Citrus**

#### **Ethyl Formate Fumigant Efficiency, Use Restrictions, Registration Update**

Jim Cranney provided an update on registering Ethyl Formate. A meeting was held with Jim, Dr. Spencer Walse, the registrant and the Environmental Protection Agency (EPA) on August 2<sup>nd</sup>. The EPA is eager to register this product due to its low toxicity and as an alternative to methyl bromide. The registrant has been working with a laboratory in Ohio to determine what studies need to be conducted, and they are in the process of scheduling the studies. There has been a study already published that might be able to supplant one of the necessary five toxicology studies. It would save the registrant around \$400,000 if this study can be included. A petition has been sent to the EPA for a waiver, and this process takes about 90 days. Everything is on track for the regulatory side of things, one outstanding issue is how quickly the registration can be obtained. The EPA has committed to a 17-month review after everything has been submitted. One theoretical way to shorten this time frame is to submit a Section 18. When discussed with the registrant, it was decided to shelve this issue for the time being because of the possible risk that EPA would want to add additional ecological studies because of the change in the way that the chemical would be used.

Dr. Beth Mitcham mentioned that they have been working on obtaining new Ethyl Formate materials for the registrant. It was decided that the registrant would formulate this in cylinders and blend it with carbon dioxide. The cylinders will be air shipped next week and will be available for work in the lab. Dr. Spencer Walse has been working on field applications and field fumigations with Ethyl Formate and different methods of applying in the field including doses, and effectiveness under potential commercial conditions. The next step after these results is conducting phytotoxicity testing on different types of citrus. It is hypothesized that citrus will be able to tolerate the required dosage to kill ACP, but if possible, a higher dose is desired to kill Bean Thrips as well. These studies will be conducted on unwaxed fruit. It was estimated that the studies and writing up the studies in Ohio will take around six to eight months.

#### Evergreen Fogging Efficiency, Use Restrictions, Registration Update

Joel Nelsen provided an update on Evergreen. Dr. Beth Grafton-Cardwell, Dr. Spencer Walse, and Lori Apodaca have been involved with the technical side with EPA, and CDFA and the industry are working on the advisory notice regarding the use for Evergreen. Residue data was submitted to Department of Pesticide Regulation (DPR), and DPR is expediting the review, and there are not expected to be any delays. Joel mentioned that he is expecting this to be registered by naval harvesting season. To be able to register other mandarins, Joel will be meeting with EPA. It was also noted that the term “fogging” will not be used for applying Evergreen to bulk citrus. It will be a spray application due to the label, however the methodology will be the same. Jim Cranney also pointed out that a Section 18 was created to allow the use of the bactericide in Orange County.

#### **Strategy 3-Suppress Asian Citrus Psyllid Population**

##### Research on Area-wide Buffer Treatment Efficacy and Duration Update

Dr. Beth Grafton-Cardwell provided an update on buffer treatments in Riverside County and noted that after over 22 weeks post treatment, there is complete suppression of the psyllids, and populations only started to pick back up in one site around June. Treatments in backyards can be effective, and the December treatment is effective because it is knocking the population down in the winter. In Ventura, due to delayed treatment, all stages of the psyllid were present up until the treatments were applied. Dr. Grafton-Cardwell also pointed out that instead of conducting responsive treatments, if local groups like Pest Control Districts (PCD)s can schedule residents to be treated in December-January, there will be better efficacy and suppression. This would change the residential program from responding to psyllids to scheduling treatments. Due to the high pressure of psyllid populations in the fall, there should also be a treatment at that time. Scheduled treatments would reduce costs and improve efficiency. A recommendation was put forth by Dr. Grafton-Cardwell and states: In regions where area wide management of psyllids is ongoing in the commercial orchards, neighboring residential areas should be treated with Tempo plus Merit in the fall (date to be determined), and Tempo in the winter (December-January period) in a scheduled manner rather than a reaction to a threshold of psyllids or treatments by the growers. This recommendation was seconded by Kevin Olsen. This will be taken to the full committee next week.

## **Strategy 4-Improve Data Technology, Analysis, and Sharing**

### Review of Science Task Force Meeting

A small task force was assembled with Kevin Olsen as chair to debate a few issues and to come up with current recommendations and a forecast for future issues.

### Risk Based Survey

The task force determined that moving forward, under two different scenarios, that there should be more emphasis on commercial groves. The first scenario would be limited dollars, and the second is expressed evidence that HLB is reached of exponential phase of disease development, like Southern California. Under these two scenarios, emphasis for the risk-based survey would be on commercial groves, and residential areas approximate to commercial groves. However, the risk-based survey as it is set up now is effective. Victoria mentioned that CDFA is working with Dr. Tim Gottwald to develop a commercial grove survey like his risk-based survey with the intention to be implemented simultaneously. Dr. Gottwald has also been asked to bias the current risk-based survey towards 20 percent commercial citrus. This should not change the budget.

### Removal of *Candidatus Liberibacter asiaticus* (CLas) Positive Trees

Everyone on the task force commented that removal of CLas positive trees is an important function and needed to continue. As a long-range outlook, once the exponential growth of HLB becomes apparent, there may need to be a deemphasis of taking out trees that are distant from commercial groves. Etienne commented that there should be a definition of “exponential growth” so it will be easier to decide in the future if we are there. Dr. Grafton-Cardwell commented that scientists have agreed that exponential growth has already been reached, but tree removal should still be a priority.

### Treatment Around HLB Detection Site

The scientists agreed that treatments around HLB detection sites should remain a core function and may shift more towards commercial groves under certain scenarios in the future. There was a discussion around treatments being proactive regarding area wide treatments.

### Buffer Treatments Around Commercial Groves

The group felt that buffer treatments around commercial groves should be operated under local PCD, it may be more effective. This could be mixed response due to not all areas having PCD's. Ray Leclerc will follow up on border treatments and report at the next subcommittee meeting.

The meeting was adjourned at 3:28 pm. The next Science and Technology subcommittee meeting will be held on November 7, 2018.