

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

Meeting Minutes
Monday, November 7, 2016

The Science Subcommittee Webinar was called to order at 2:00 p.m. on November 7, 2016.

Committee Members Present:

Dr. Beth Grafton-Cardwell* Dr. Jason Leathers* Dr. Etienne Rabe*

Committee Members Absent:

Tom Avinelis Jim Gorden George McEwen
Ed Civerolo

Interested Parties:

Victoria Hornbaker* Sylvie Robillard* Judy Zaninovich*
Melinda Klein* Dr. Spencer Walse*

*** 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 not a quorum for the meeting.

Etienne asked the program manager to review the attendance of the Subcommittee Members and provide the information back to him for consideration.

Mitigations for Fruit Movement

Etienne reviewed the October 20, 2016 Committee recommendation for the mitigations measures for fruit movement. The recommendation to the Secretary was to phase in the wet wash mitigation option for fruit movement across the adopted boundaries; also phase out the spray and move option. The field cleaning option will remain and other alternative mitigation measures will be added as it becomes available. The goal for implementation was based on a previously adopted motion that this would come into effect after March 31, 2017.

There was discussion about the capital outlay that would be required to develop the wet wash capacity and the annual cost associated with a wet wash program. It was noted that this might not be a viable option if HLB were detected in the Central Valley, but others on the call felt that it is a long term investment in maintaining a viable citrus industry.

Dr. Spencer Walse asked about tarping. It was explained that tarping is being handled independently of the mitigation measures and that the current plan is to require tarping on all loads regardless of origin or destination. The hope is to have this implemented by the end of the year.

Etienne called on Beth and Spencer to discuss the new options that are being developed/tested. There are two basic approaches discussed on the call, “wet options” and “dry options.”

Beth noted that she had a meeting last week with Joe Morse, Spencer Walse, Nastaran Tofangsazi, Sandipa Gautam, Julie Doctor and Alan Washburn to discuss all of the mitigations and what the pros and cons are of the various techniques. They focused on wet options and fumigations or dry options.

1. Wet options:

- a. The current wet wash mitigation, as recommended to the Secretary on October 20, 2016 includes dumping the bin and running fruit over a wet line; which may include power sprayers, flooding or soaking the fruit (similar to packinghouse activities); re-binning and then re-loading.
- b. Wet wash without bin dump is being analyzed. Spencer is confident that a bin immersion option with good water agitation/water jets will not need a chemical. If enough agitation occurs to knock the ACP off the fruit and prevent it from getting back on the fruit then a chemical would not be required. At the very most, a very benign chemical like surfactant or soap may only be needed.
- c. Bin drench (not truck drench) with soaps, insecticides and other ingredients is being analyzed by Nastaran Tofangsazi under the direction of Beth Grafton-Cardwell in southern California where there are psyllids. Spencer has looked at this in a study he did for Australia and noted that there wasn't complete coverage so likely an insecticide would be needed. Evergreen is a potential option.
- d. Truck drench would only be useful if there was an insecticide included and the group was not sure that this would be a viable option due to the volume of fruit and the lack of penetration throughout the load.

2. Dry Options:

- a. There are several fumigants that the group is looking at.
 - i. Hydrogen cyanide is very effective but interacts with copper and can cause phytotoxicity, therefore this fumigant is only used for packed fruit or perhaps a very limited market such as green lemons that have not been treated with copper. A label change would be needed.
 - ii. Phosphine is another fumigant that is only a tool for washed and waxed fruit.
 - iii. Ethyl formate (Vapormate) is a true volatile and will work very well by all accounts, however there are registration issues. The registration is pending a \$750,000 toxicological study.
 - iv. Propylene oxide (Propoxide 892) is also a true volatile and should be very effective, it has the toxicological data required for the registration, but it is only registered for use on dried fruit so data would need to be developed to add a food tolerance for citrus.

Note: Jim Cranney, CCQC will be meeting with EPA on the fumigants to move the process along.

- b. There are two "liquid fogs" that are being analyzed.
Cropfume and Evergreen have issues with distribution throughout the bin and loads due to lower volatility. There is work being done at Lindcove by Sandipa Gautam

and Spencer Walse to look at ways to distribute the fog for better penetration into bins of fruit. Both insecticides are registered. Beth and team will look at efficacy in various scenarios, including reefer trucks, tarped flatbeds, soft side trucks, and/or tent within which a truck can be parked.

Beth and Spencer noted that the short term effort should be to continue the work on Cropfume and Evergreen. Simultaneously, the drenches will be studied and how the inclusion of insecticides affect ACP. It was noted that there was an issue with the CDFA ACP colony which is causing a temporary research bottleneck, as there are no ACP available to utilize in the efficacy studies.

There are a number of concurrent efforts running at the moment to look at alternative mitigation steps to wet wash. It is suggested that the final decision regarding wet wash as the only immediate option for fruit movement be delayed to allow for time to determine additional progress with the alternatives.

Action Items

- Ask Nastaran Tofangsazi for updates on the working she is doing in Riverside on wet wash.
- Spencer, Sandipa and Beth to report back on Cropfume/Evergreen research in mid-December.
- Etienne to discuss issues with the Ethyl formate/propylene oxide regulatory process and options for a path forward.
- Victoria to contact the CDFA biocontrol program to inquire about ACP colony issues. Beth Mentioned that the colony should be back up in a few weeks.
- Dr. Jason Leathers to reconvene the SAP to seek input on alternate mitigation measures. It was noted that the SAP recommendation of wet wash as the only viable option for safe fruit movement was provided 3 years ago. A lot has changed in the meantime and alternatives are viable.

The meeting was adjourned at 2:45 p.m.