

# TULARE COUNTY PEST CONTROL DISTRICT

## SPECIAL MEETING TECHNICAL ADVISORY COMMITTEE LREC Conference Room

January 11, 2023

### MINUTES

#### **TAC MEMBERS PRESENT:**

On-site: Dr. Ray Yokomi, USDA-ARS; Dr. Sandipa Gautham, UCANR; Mr. Milo Gordon, Chair, TCPCD.

On-Zoom: Dr. Georgios Vidalakis (Chair), UC/CCPP; Dr. Beth Grafton-Cardwell, UC/LREC (Emeritus); Dr. John da Graca, TAMU (Emeritus); Dr. Svetlana Folimonova, UFL; Dr. Ashraf El-Kereamy, UC/LREC; Judy Zaninovich, Vector Control Program Coordinator.

**ATTENDANCE:** **CPDP Staff:** On-site: Dr. Subhas Hajeri, Plant Pathologist/Program Director; Karen Westerman, Field Operations Manager; Mia Neunzig, Administrative Manager; Cindy Thomas, Greenhouse Supervisor.

On-Zoom: Tony Patino, Testing Supervisor; Tina Acevedo, Tissue-Prep Supervisor; Dolores Molina, Field Supervisor.

- I. **CALL TO ORDER:** Chair Georgios Vidalakis called the meeting to order at 10:05 a.m.
- II. **INTRODUCTIONS:** Attendees made self-introductions.
- III. **REPORTS:** Dr. Hajeri provided a brief background on the CTV survey, including hierarchical subsampling (HS), composite, and singles surveys. Dr. Yokomi showed some concerns about the time delay between the HS block testing positive in year 1 to the composite and singles survey and the eventual removal of the positive tree in year 2. Dr. Hajeri made note of the suggestion that high-incident HS blocks need to be followed up immediately in the same year. However, Dr Hajeri explained that the CTV program is a suppressive program, not an eradication program. Plus, due to the narrow window of detectable CTV titer and operational logistics, the HS positive blocks are held onto the next year's follow-up survey.

Dr. Hajeri reported the number of MCA13-positive trees removed 1 mile around the LREC since 2010. In addition, he reported the number of CTV-positive trees removed on the LREC from 1990 until 2018. Since 2019, Non-MCA13-positive trees on the LREC have not been removed, and he showed a graph with a cumulative number of non-MCA13-positive trees on the LREC. Ms. Zaninovich gave a little background information about the Aphid Control Program, which started in the fall of 2008 with funding from TCPCD, and it is administered 2 miles around the LREC. Dr. Hajeri then reported data showing CTV incidence with aphid control (less than 2 miles from LREC) versus without aphid control program (2-3 miles from LREC). Dr. Grafton-Caldwell shared historical data on CTV incidence in and around LREC. Dr. Vidalakis commented about classical CTV biology and epidemiological behavior, where the rise of CTV incidence is not a linear graph but stays flat for a while, and huge spikes in incidence are suddenly seen, which happens in a staircase fashion. There was discussion about the difficulty of monitoring aphids and timing of treatments. TAC discussed about possible ways to monitor and repel/control the aphids on the LREC. Dr. da Graca shared the CTV situation in Texas and talked about brown citrus aphids, sour orange rootstock, VT, and

resistance-breaking isolates. In answering a question from Dr. Vidalakis, Dr. Folimonova talked about stem-pitting (SP) symptoms, which are due to the complex interaction between the CTV strain, host, and aphid vector. At the moment, her research suggests that there is no molecular/sequence signature on the CTV genome that can be used specifically for the diagnosis of severe SP strains.

Dr. Vidalakis talked about the discussion of TAC during the 2008-09 transition period, where they defined the wide-spread, endemic CTV isolate as 'San Joaquin Valley (SJV) benign isolate', which doesn't induce quick decline on tolerant rootstocks as well no stem-pitting symptoms; one of the reasons to introduce MCA13 antisera because the SJV benign isolate doesn't react to MCA13 while so-called exotic CTV strains to California do. Answering SP-related questions from Dr. Folimonova, Dr. Yokomi talked about the diversity of CTV strains found in the SJV. Then he shared the TCPCD-funded project where the impact of CTV on commercial cultivars was studied under greenhouse conditions. He talked about types of commercial citrus cultivars and types of CTV strains utilized. He gave the overall objectives of the greenhouse study, followed by the findings of 4 years study. He talked about the impact of greenhouse ambient weather on the titer of CTV, where VT strains had relatively higher titer than non-VT but MCA13 reactive strains as well as T30, an MCA13 negative strain. Furthermore, he described the impact of strains on vegetative growth and on SP symptoms development. Dr. da Graca shared his experience of seeing SP symptoms in commercial citrus cultivars in South Africa. He suggested reaching out to Mediterranean countries like Spain to know how they are dealing with the SP problem.

Based on the discussion so far, Dr. Vidalakis brought up a question to the committee, "How to run a CTV program in a situation when ACP/HLB is a bigger threat, where the greater resources will be allocated; recent evidence suggests SJV climatic conditions are not favorable for SP-CTV strains to induce symptoms and most effective vector, brown citrus aphid, is not found in California. He directed the TAC discussion toward a multi-pest survey to effectively use resources. Ms. Zaninovich gave a brief report of recent ACP findings near LREC as well as findings of a new citrus virus, *Citrus yellow vein clearing virus* (CYVCV), in Tulare County. Mr. Gordon, as the chair of TCPCD, shared his opinion of shifting the district's efforts from controlling only CTV/aphid to considering multiple citrus pests and diseases of concern to the district growers. He shared his perspective that to achieve the target of addressing multiple pest and disease problems, the TCPCD needs to come up with reasonable resources, and that might take a few years to materialize. He asked the TAC to give advice on what to know in the next year or two as well for the next 5-10 years into the future. Dr. Yokomi gave a brief background on CYVCV and talked about his research project on CYVCV. Dr. Vidalakis talked about how, technologically, strategically, and politically, the TCPCD can expand its service to the growers participating in the program. Then he added that the boots on the ground are the biggest strength of the CTEA, and once the sample comes to the lab, technology is there to look for all possible threats very effectively and cheaply. Dr. Vidalakis talked about technology that currently exists to test multiple pathogens from a single sample, for example, using RNA templates to test RNA and even DNA pathogens since there will be 1,000s of more copies of mRNA in a cell compared to a few copies of DNA per genome. There was a discussion about current expenditure on aphid control and the CTV survey funded by TCPCD. Even though the budget plays a significant role in operational decisions, Dr. Vidalakis wanted the TAC to make recommendations based on data rather than the budget. Along the same lines, Mr. Gordon reiterated that he is only asking the TAC to make scientifically sound recommendations while leaving the decision to generate and allocate resources to TCPCD. Dr. Vidalakis asked Dr. El-Kereamy if UCANR can pick up a certain percentage of the cost of protecting LREC and/or a certain percentage

if added to the cost of research projects. Dr. Grafton-Caldwell talked about historical contributions from other pest control districts, but with budgetary constraints, the funding to protect LREC in the recent past was taken up by TCPCD alone. Answering a question from Dr. El-Kereamy, Dr. Hajeri mentioned the overall cost of aphid control and CTV survey for the current fiscal year.

TAC wants to see the CCTEA become a multi-pest survey and detection program, which will eventually help the TCPCD achieve the district's expectations, which is increasing the return on their investment. Dr. Grafton-Caldwell asked Mr. Gorden to make sure that the growers understand who funds what, how the TCPCD fits in terms of money being spent, and how TCPCD plays a unique and significant role in pest and disease control in the valley. Mr. Gorden shared his opinion about channeling more resources from the state to the local level, like TCPCD, to take action swiftly and cost-effectively. Mr. Gorden wants to see all the entities, such as CDFA, Ag Commissioner, and PCDs, have a defined role and complement each other. **TAC discussed about the recent science advisory panel recommendations to CDFA for a statewide program. TAC discussed the effectiveness of local control and management of various pests and diseases; furthermore, working coordinately with CDFA with an appropriate memorandum of understanding for the local pest control districts, the CCTEA should become an extension of what CDFA's statewide program is doing.**

**IV. RECOMMENDATIONS:** *TCPCD should work on developing a multi-pest survey and detection program for the district while keeping the current Aphid Control and CTV Survey Program, protecting the LREC, as is for at least one more fiscal year. Additionally, if the MCA13 hot spot is found during the HS survey, then address the issue in the same year by conducting a composite and single survey rather than waiting for the next spring season. The recommendation was moved by Dr. Yokomi and seconded by Dr. Vidalakis. The motion carried on a roll call vote; all members present voted AYE.*

**V. ANNOUNCEMENTS:** None.

**VI. ADJOURNMENT:** The meeting was adjourned at 12:57 p.m.

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Georgios Vidalakis, Chair

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Subhas Hajeri, Program Director