## Short-Term Focus Areas

By Harold Browning

rowers facing the continued impacts of HLB report the need for immediate relief in the form of stabilized productivity from existing trees.



While we know that some of the more sustainable solutions are farther out in time, recent committee and board discussions have focused on what the Citrus Research and Development Foundation (CRDF) can do to meet the short-term needs. Here are a few of the areas that emerged from the discussions:

- Improved application strategies for bactericides are needed. Impact from current bactericides may be limited most by delivering the materials into phloem and throughout infected plants. CRDF has approved several projects to look at improved application through testing of alternative adjuvant compounds, use of laser-assisted leaf application and exploration methods to measure absorption of bactericides applied under different circumstances. Plans include next-phase study of how trunk applications might be used for more effective delivery of bactericides. Testing of additional bactericide candidates continues, but delivery of new materials might pose the same delivery challenges faced with current materials.
- Asian citrus psyllid (ACP) management concerns grow as higher ACP
  populations are experienced. CRDF has invited follow-up proposals on
  several aspects of this situation, including the need to monitor for the possible
  emergence of pesticide-specific resistance in ACP populations. Ongoing work
  is expanding to more monitoring locations, as well as best methods to track
  ACP susceptibility to pesticides currently in use.
- Nutrition and irrigation combinations continue to be tested by growers around
  the state, and CRDF is reviewing completed work to determine if there are
  testable questions that could be addressed with next-phase, field-research
  projects. While considerable nutrition work has been completed, additional
  studies can be invited to address specific questions.
- Grower experience with management of tree health in the presence of HLB may provide clues on combinations of programs that lead to local "success." The components vary widely, as do rates of application, timing and formulations of materials applied through a range of delivery systems. Prior efforts at CRDF to organize evaluation of these programs has been met with challenges, but we are again working on plans to understand what individual growers are doing that may be leading to better-than-expected performance, and common denominators among these cases. While this may lead to testable questions, sharing information about management tools that are being deployed may have more immediate value.
- Coordination of all aspects of work underway to identify and deliver plant germplasm to aid in HLB management remains a short- and long-term priority. CRDF has recently approved a project to look at natural variation among plants in commercial plantings.

These project areas will be the primary focus for research and delivery from CRDF in the coming year. Short-term stability of infected trees has been an evasive goal, but efforts must continue.

Harold Browning is Chief Operations Officer of CRDF. The foundation is charged with funding citrus research and getting the results of that research to use in the grove.



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