

Status of the NuPsyllid Project

By Harold Browning



This month's column is an update on the effort to develop an alternative Asian citrus psyllid (ACP) management tool. Chemical control of ACP has only allowed suppression of populations so far, and the need for alternative ACP management fits into the goal of an overall tree health management program. The project, titled "Rear and Release Psyllids as Biological Control Agents — An Economical and Feasible Mid-Term Solution for Huanglongbing (HLB) Disease of Citrus," emerged in 2012. Representing a wide array of scientific expertise, the project was approved for funding under the 2012 U.S. Department of Agriculture's National Institute of Food and Agriculture's Specialty Crop Research Initiative. The project involves 22 U.S. institutions and was awarded \$9 million over a 5-year period.

The goals of the project managed by the Citrus Research and Development Foundation (CRDF) were to:

1. Employ a coordinated, multidisciplinary and systems-based approach to stop the spread of the economically crippling plant disease, HLB
2. Eliminate citrus greening by blocking the ability of insects to move the disease from infected trees to healthy ones
3. Conduct outreach to growers and consumers to increase the adoption of this new biological control system

Eight sub-teams were established to develop the mechanisms to interfere with ACP/bacterium interactions, integrate the mechanism of choice into ACP populations in the grove, rear and release resulting ACP populations, monitor the impacts of this tool and share the information with growers. The net effect would be to develop psyllid populations incapable of transmitting CLas (nuPsyllid) and strategically release the nuPsyllid population to displace current ACP populations that have invaded the United States.

The project is now in its fifth year of funding. The team has met periodically during the course of the project to evaluate progress and to fine-tune the scope and resource allocations. While the project has not yet yielded an ACP population that is ready to be deployed in the field, significant progress has been made.

The outcome of the project is uncertain at present, but many lines of the research will continue, building on the progress made in the first four years. Several segments of the project have already captured funds to continue the effort beyond year five, and others are planning for continuation of the work.

One real benefit of the work has been progress toward identifying RNA interference targets in the ACP/bacterial interaction that are being exploited. Termed RNAi, this focus area has advanced in the nuPsyllid project and has stimulated a related effort to test the strategy in the field. CRDF, with several partners, is moving forward with best ACP/bacterial RNAi candidates as well as identifying and addressing steps that will allow for a proof-of-concept field trial in the next year. Progress in the nuPsyllid project makes this possible by assembling the teams and fueling the work.

A more comprehensive overview of the nuPsyllid project will be provided within the next two to three months. It will update growers on the outcomes expected from the work and provide more details on the next steps.

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.

