



Commission Hosts EPA Officials in SHB Infested Areas; Secures Additional Research Funding

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In January, the California Avocado Commission (CAC), hosted officials from the Environmental Protection Agency (EPA) and visited areas in San Diego County infested with the Kuroshio shot hole borer (SHB) and *Fusarium dieback* (FD).

Ron Carlton, EPA agricultural counselor, and Kerry Drake, EPA associate director of Region 9, toured avocado groves and the Tijuana River Valley (TRV) to see the devastation firsthand. The Commission has submitted a Section 18 emergency registration for Hero® (bifenthrin) as a possible control for the SHB and is awaiting approval. As of this writing, EPA had yet to issue the emergency registration.

Both Carlton and Drake expressed their level of shock at the damage the SHB had brought, especially to the TRV, and assured the Commission that EPA would complete the review for the Hero Section as soon as possible.

The devastation in the TRV is absolutely shocking. Willow trees are snapped in half as if they had been cut down by artillery fire. Based on images taken in April of the same area, the destruction has moved very rapidly. The Commission believes the TRV provides a critical opportunity to get non-avocado stakeholders involved in supporting research for possible solutions.

As part of that strategy, the Commission met with San



in laboratory conditions. Because these bacteria isolates are naturally occurring in the plants, Eskalen hypothesizes that they may be used as an effective and long-lasting injectable biological control method to limit the growth of FD in treated plants. He believes this research could be applied on native tree species in riparian areas to control SHB/FD. The Commission is pursuing funding from other stakeholders to support this biocontrol work.

Recently the Commission received \$175,000 to aid in CAC's ongoing SHB surveying and grower outreach efforts. The grant funding was awarded through the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service Section 10007 of the 2014 Farm Bill. This marks the third time

Diego County Parks Department Director Brian Albright, representatives from the U.S. Fish and Wildlife Service and non-profit organizations to discuss collaborating on funding opportunities. The majority of the highest risk areas outside of avocado groves — parks, riparian right of ways, conservation areas — will likely face significant limitations for pesticide applications due to their sheer size and risk of the public being exposed. The best option for controlling SHB in these areas will likely come through biocontrol measures.

Through the Commission's funded research, Dr. Akif Eskalen has identified biological control agents — endophytes (fungi and bacteria within plant tissues) — that have shown promise in preventing pathogen establishment in numerous hosts. In one of Dr. Eskalen's ongoing projects he is developing a biological control method to inhibit the growth of FD. Using xylem samples from relatively healthy and uninfested members of host trees species within infestation sites, he was able to isolate species of plant-endophytic bacteria that are able to inhibit the growth of FD



the Commission has secured USDA funding to help support our SHB work. In addition, the California Department of Food and Agriculture has committed \$31,000 in emergency funding towards the Commission's SHB surveying and monitoring. The Commission will continue to explore any possible sources for additional research funding. 🍌