

WAIAWI BIOCONTROL CONTROVERSY

Controversy Flares Over Proposal to Control Waiawi with Scale Insect

The proposed release of a scale insect to control strawberry guava, or waiawi (*Psidium cattleianum*), has sparked an outcry of opposition among some sectors of the public. Yet, although the opposition means a delay in the scheduled release, the scientists most closely involved with the project say they welcome the development as an opportunity to educate the public about what they do and the ways in which their plan can work to the state's benefit.

A draft environmental assessment for the release was published last March. At the time, all signs pointed to an uneventful conclusion to the last step in the regulatory process and, with a state Department of Agriculture permit already in hand, scientists with the U.S. Forest Service were moving forward with plans for field release of the insect, *Tectococcus ovatus*. The initial release was proposed for the state-owned Ola`a Forest Reserve on the Big Island.

Public interest in the project had been minimal, even though daily newspapers across the state had provided articles on the proposed release over the last three years, as the Forest Service scientists progressed through various state regulatory hurdles. At publicly noticed hearings in 2006 held by the state DOA on the rule changes needed to permit the import of *T. ovatus*, only a handful of people attended. On April 30, 2008, the state Board of Agriculture approved the permit that the Forest Service needed to import the insect. With the public comment period on the draft EA set to close May 23, everything seemed set.

And then, on Sunday, May 18, the *Hawai`i Tribune-Herald* published a paid display ad. "Urgent! Help Save the Guava" the top line screamed. "Oppose Plan to Release Alien Insect to Kill Strawberry Guava (Waiwi)" [sic]. The ad featured before-and-after photos showing the damage *T. ovatus* can do to strawberry guava leaves, and then let readers know that the Forest Service would be releasing "an ALIEN INSECT PEST that causes galls on the guava plant, stopping its fruit production. THIS IS A STATEWIDE PLAN WHICH WILL START IN PUNA THIS SUMMER, UNLESS WE STOP IT NOW!" Readers were urged to get their comments in by May 23 to the Forest Service. The sponsor of the ad was identified as "Save the Guava," a campaign of the Good Shepherd Foundation, Inc.

The next day, the *Tribune-Herald* carried a front-page article on the planned introduction of the insect. Sydney Ross Singer of Pahoehoe, the president of the Good Shepherd Foundation, was described as a "conservation biologist" by reporter John Burnett, who quoted Singer at length (although he did not link Singer to the ad). "I think it needs to be controlled," Singer was quoted as saying, "but ... we don't want to make it so nobody can enjoy guavas."

Representative Clift Tsuji, chairman of the House Committee on Agriculture, received so many calls about the proposal in the wake of Singer's ad that he organized an informational meeting, held in a packed lecture hall at the University of Hawai`i-Hilo on June 5.

A Walk-Out

Before the meeting began, Singer distributed handouts to people filing into the auditorium. "The government is planning to attack our strawberry guava by releasing an alien insect pest that will severely damage the leaves and stop the tree from making fruit," the flyer

said. It urged people to press Tsuji to allow half the allotted time for “opposing viewpoints and information... After all, this is not only about the forests. It is also about our right to use and enjoy strawberry guava on our private property and in the wild.... Help save our free, wild foods! Help stock this attack on property rights! Help save the environment from these ‘environmentalists’. Hawai`i needs food, not bugs.”

(On the website of the Good Shepherd Foundation – goodshepherdfoundation.org – Singer states that the group has begun to work “on the problems relating to so-called ‘invasive species’ and the hazards to the environment, humans, and non-target animals and plants associated with attempts to eradicate and control these populations,” which efforts Singer has described as “invasive species hysteria.”)

But Tsuji was not moved. When the meeting started, he explained the ground rules: For the first hour, there would be presentations by a panel of scientists from government agencies, plus one presentation by Derek Kurisu, of KTA Superstores, on the economic value of strawberry guava. After that, Tsuji would read questions submitted by members of the audience and give the panelists the opportunity to respond.

Singer objected loudly from the audience. Tsuji reminded him that this was not a meeting where testimony would be allowed. After several more outbursts from Singer, Tsuji warned him that if there were another, he would call security and have Singer removed from the hall. Eighty minutes into the meeting, after most of the scientists had made their presentation, Singer again objected to the meeting format. “The public needs to comment,” he yelled. Tsuji asked for security to be called. Singer then got up to leave, and urged others in the audience to follow: “People, you should leave. This is a fraud,” he said. Around half a dozen people followed him to the exit.

By and large, however, the audience was curious, polite, and attentive. One by one, the scientists addressed issues such as host specificity, the threat of waiawi to native forests, the economic and ecological damages inflicted by the plant, and the difficulty of controlling a species whose population can grow in Hawaiian forests at a rate of 14 percent a year.

Julie Denslow, a recently retired research professor with the Forest Service, noted that strawberry guava affects nearly 80,000 acres of agriculture land. “Strawberry guava fruit provides a food source for a variety of fruit flies, which have a severe impact on soft fruit agriculture in Hawai`i,” she noted. “Fruit flies depress the quality and yield of papaya. For papaya alone, fruit flies cost farmers \$7.8 million a year.” Some estimates of the “lost opportunity costs” brought about by waiawi, in terms of foregone economic activity, run as high as \$78 million a year.

To control strawberry guava in managed forest areas, she said, costs \$155 an acre for “initial knockdown costs, plus \$123 per acre per year thereafter for maintenance.” Overall, maintenance costs of managing strawberry guava on some 132,000 acres of natural areas on the Big Island would come to nearly \$18 million, Denslow said. But with biocontrol, she added, the figure would be just a tenth of that.

Tracy Johnson, the entomologist with the Forest Service who has done the bulk of the research on *T. ovatus*, addressed questions about the potential for the insect to spread beyond the target species. This insect, Johnson said, “is not at all like the wiliwili gall wasp,” which spread like wildfire across the entire island chain two years ago. *T. ovatus* “spread passively, with the wind or by crawlers,” a juvenile stage in the life cycle. “They can’t control where they end up. The gall wasp has wings and is good at flying, finding exactly the right plant. *T. ovatus* can’t direct its distribution in this way.”

Johnson said that the impacts of release of the insect may “extend across large areas over a period of decades,” but for backyard trees, the insect’s limited mobility “lowers the likelihood that it will find isolated trees... If it does become a problem, and you want to grow waiawi with lots of fruit, you can always control it with the application of organic oils.”

‘On the Brink’

Art Medeiros, who works with the U.S. Geological Survey at Haleakala National Park, flew over from Maui for the Hilo meeting. “Our mauka lands are at the brink,” he told the crowd. “Is there a future for them, or not?”

“Some people may think strawberry guava is just something in the forest,” he said, but, like miconia, strawberry guava isn’t just a part of the forest, it *becomes* the forest.”

“There aren’t too many magic bullets out there,” Medeiros said. “In my mind, this is not a minor issue. This is make-or-break. We’re either going to protect our forests, or not.... I’m working with Hawaiian groups to try to restore koa. We’re trying to develop watershed forests that have cultural value, have watershed value, and are home to Hawaiian plants and animals. But it’s all dependent on strawberry guava not being the super plant like it is right now. This is a critical issue.”

Julie Leialoha, with the Big Island Invasive Species Committee, described the difficulty of controlling strawberry guava. “For those who say we don’t want to get rid of strawberry guava because it’s good firewood, I say go for it. We’ve got 80,000 acres of it.”

“We need something to stall its spread,” she said, “so we can buy time. ... *T. ovatus* won’t kill the population, just stall seed productivity.”

Roger Vargas, a research entomologist with the USDA’s Agricultural Research Service, outlined the tremendous economic losses associated with the rampant spread of strawberry guava, mainly related to its function as a host for the Oriental fruit fly and Mediterranean fruit fly. “The two species of fruit fly that you find on strawberry guava and common guava are the two worst,” he said. “They attack more than 400 varieties of fruits and vegetables and are one of the primary reasons Hawai`i hasn’t had successful agricultural diversification.”

In recent years, the focus of his work has been on area-wide pest management, Vargas said, trying to increase the production of a variety of different agricultural products in Hawai`i. “In doing these technology transfers to farmers, consistently the No. 1 problem with every crop you look at – papaya, mango, cherimoya, lychee – was the impact of strawberry guava. Strawberry guava serves as a reservoir for the fruit flies, which go straight to the crops and just destroy most of it. This is an aspect of the problem that can’t be underestimated,” Vargas said.

Starting Over

At the end of the meeting, Johnson announced that the environmental assessment process would begin anew, so that anyone and everyone who had comments could be assured that their concerns would be addressed.

Johnson told *Environment Hawai'i* that there were a couple of reasons for restarting the process. "First," he said, "there was confusion over the original notice" published by the state Office of Environmental Quality Control. "The proposing agency was listed as the state Department of Agriculture instead of the U.S. Forest Service," he said. "Since it is the proposing agency that receives comments, there was some confusion about where to send comments. So we ended up getting comments, and so did the DOA. I'm not worried that we missed anyone's comment, but the general confusion leaves me feeling that this justifies a re-doing."

"The other reason," he said, "is that I think we need to improve our EA." The draft EA released in April, he said, "was based on a federal EA, modified to meet state EA requirements. But in talking to more state people, it seems like this EA doesn't adequately address everything required in a state EA. So we're going to improve it based on consultations with state people, making sure we follow all those procedures."

But with permits allowing the insect to be released in hand from both the state Department of Agriculture and the federal U.S. Department of Agriculture, why was there a need for an EA in the first place?

"We are proposing an action on state lands," Johnson said, "so the trigger for the state EA is the use of state lands." While past releases of biocontrol agents have been subject only to federal EA requirements, he said, this year, he and colleagues at the state level decided it would be appropriate to go through the state EA process as well. "I am trying to put together as thorough an assessment as I can that captures both the concerns as well as the best science we have."

At this point, he said, there had been no decision as to what agency would have responsibility for determining if the re-drafted EA was sufficient or if a more extensive environmental impact statement would have to be prepared. Paul Conry, head of the state Department of Land and Natural Resources' Division of Forestry and Wildlife, told *Environment Hawai'i* that he would be sitting down with folks from the state DOA to decide which office would be cast in the role of determining agency.

-- **Patricia Tummons**

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