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STOP THE SILENT INVASION

COORDINATING GROUP ON
ALIEN PEST SPECIES

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Draft EA Posting on Strawberry Guava Impacts and Proposed Biocontrol Insect

Strawberry guava is a well-known ornamental plant that was introduced to Hawai‘i from Brazil in 1825. Its fruit are a tangy trailside snack for some, and the free and plentiful wood is used for smoking meat, easy fence posts, and more. However, strawberry guava is also a fast-growing tree from Brazil that is spreading in forests statewide, forming dense thickets, outcompeting and replacing virtually all other native and non-native watershed plants, and reducing surface and drinking water. Because of these impacts, the Hawai‘i Department of Agriculture is accepting comments on a plan to release a Brazilian scale insect, which has undergone more than 10 years of scrutiny to ensure its safety.

This issue has raised some controversy in the past, partly due to widespread misinformation, partly due to the fact that some people use strawberry guava (and they incorrectly believe that this bug will end their use of the wood and fruit), while others are unfamiliar with bug biology and the stringent selection and testing protocols of modern day biological control.

The draft Environmental Assessment is open for public comment through July 23. The 131-page document contains details, but here are a few of the common questions and answers.

Q: Why doesn’t the state hire workers or use prisoners to remove it manually?

A: There are 500,000 acres of moderately infested forests or true strawberry guava thickets, statewide. One study documented an average of 9 stems per square meter in a semi-infested forest. This would mean that one acre holds 36,000 stems that require cutting and treating, which seems like a lot, but it greatly underestimates the numbers of trees in dense thickets over thousands of acres. Anyone in the landscape industry that has tried to manage strawberry guava knows that cutting it is difficult, and herbicides don’t always kill the plant. Imagine the army, herbicides, and funding necessary for such an undertaking, now imagine that each mature tree produces hundreds of seeds each season, which will soon sprout.

Q: So why don’t they use bulldozers or controlled burns?

A: Bulldozers and controlled burns certainly have their place. However, this is an undesirable option where strawberry guava is just invading native forests--fire and bulldozers are indiscriminate and would harm native species and the watershed. In other areas, fire and bulldozers are completely impossible because the infestation is remote and there would be no way to move equipment or keep a fire from spreading. Finally, each of these options, from manual removal to fire and bulldozers would leave huge tracts of land bare and open to erosion and possibly other invasive plants.

Q: Isn’t the state concerned about introducing a new insect?

A: Everyone should be concerned about introducing new insects. Hawai‘i has too many examples of species introduced to control other species, without testing or even concern for non-target impacts. However, these hard lessons have not gone unheeded. Since the 1970s, strict regulations and protocols for selecting and testing potential natural predators (including insects) have served Hawai‘i well. Since then, more than 50 natural predators passed the selection and testing criteria, and have been released. None of these have switched hosts from the invasive species they were intended to control, none have resulted in the extermination of their host, and none have become pests in their own right. It may also be interesting to note that hundreds of other natural predators did not pass these tests, and these were not released.

Q: Since this Brazilian scale bug won't kill strawberry guava, what's the point of taking the risk?

A: This bug won't kill strawberry guava, but instead it feeds on the leaves, which makes the plants form galls. This diverts energy that it would normally use for growing quickly and putting out large numbers of fruit. It will still grow and put out some fruit, just not the overabundance that we would normally see. Native Hawaiian forest plants just need a more even playing field to be able to compete for space, light, water, and nutrients. Slowing the growth of strawberry guava does just that. Alternately, the risk of not managing strawberry guava is the loss of the native forest and the water that it provides.

Q: Where's the data on water impacts?

A: University of Hawai‘i researcher Thomas Giambelluca compared forests dominated by native ‘ōhi‘a (*Metrosideros polymorpha*) with strawberry guava-infested forests, and found that the infested forests lose 27% more water, with the difference rising to 53% during dry periods. For many decades to come forests dominated by strawberry guava will be diverting water that would otherwise recharge aquifers and streams for our drinking water and farms. If nothing is done to protect native forests, the spread of strawberry guava across island watersheds will result in widespread, perpetual reductions of water to our island water supplies.

Q: Won't wild pigs be affected if there are fewer fruit?

A: This isn't expected to impact wild pig populations because they feed on other food sources for the better part of the year when strawberry guava isn't in season.

Q: I have ‘ōhi‘a in my yard and there are bumps on the leaves. Is this the Brazilian scale?

A: No. The Brazilian scale has not been released. Furthermore, it cannot survive on ‘ōhi‘a, it has a mutual relationship only with strawberry guava. What you are seeing is the galls formed when a native Psyllid (*Trioza* spp.) feeds on ‘ōhi‘a leaves. This psyllid has a mutual relationship only with ‘ōhi‘a.

Q: I'd like to know more and look at the draft EA.

A: Visit www.strawberryguavabiocontrol.org for a link to the draft EA and more information. The draft EA is posted on the Office of Environmental Quality Control website.

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Christy Martin is the Public Information Officer for the statewide Coordinating Group on Alien Pest Species (CGAPS), a public-private partnership working to protect Hawai‘i from invasive species.