

UF to release parasitic fly to combat 'evil weevil' destroying native bromeliads

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The free ride is almost over for the “evil weevil” destroying Florida’s native bromeliads.

Since 1989, the invasive insect has wreaked havoc on the state’s airplants, unchecked by natural enemies. But in the next few days, researchers with the University of Florida’s Institute of Food and Agricultural Sciences will release a parasitic fly that kills the weevil’s larvae and could help save the tree-dwelling plants, many threatened or endangered.

Fifty adult flies will be set free at Northwest Equestrian Park in Hillsborough County, where the Mexican bromeliad weevil is attacking four species of airplant unique to Florida, said Ron Cave, an assistant professor of entomology with the Indian River Research and Education Center in Fort Pierce.

“It’s been a long haul,” Cave said. “We’ve nurtured this thing and studied and lived with it so intimately, that to finally get it out there in the wild and see what it can do and if it can really help solve a problem, that’s what we’ve all been shooting for.”

Cave discovered the insect in the mountain forests of Honduras in 1993. After 14 years of study, researchers will learn if it can survive Florida’s hot, humid climate.

“I think the chances are good that it can, because insects are very

adaptive,” he said. “The flies will be able to find, I think, cool, shady, moist conditions in the canopy of an oak hammock, down amongst the leaves of a bromeliad holding water, they’ll be able to find little microhabitats where they’ll be able to survive very well.”

It’s the first release of an organism reared at UF’s Biological Control Research and Containment Laboratory in Fort Pierce, Cave said. The facility opened in 2004.

Graduate student Teresa Cooper built traps from wooden trays with wire-mesh bottoms that will be baited with pineapple tops, each containing a weevil larva to attract the flies, said Howard Frank, an entomology professor in Gainesville.

The traps will be put out six weeks after the flies’ initial release, Frank said. The results will show whether the second generation of flies can find and parasitize the weevils.

To breed the fly, researchers first had to raise the weevils. Finding a food source was a major hurdle.

“We’ve tried various ways of rearing the larvae,” Frank said. “We can’t take bromeliads from nature to rear the weevils because they’re protected. But pineapple tops are trash, they’re thrown away. So we have to be at the grocery store, persuade grocery store managers to save them for us.”

Pineapples are part of the bromeliad family, though not native to Florida, he said. The state is home to 16 species of bromeliads, all of which grow in trees. Larger species have thick leaves weevil larvae eat, tunneling through the plants and killing them.

The weevil, native to Mexico and Guatemala, became established in

Florida in 1989 when it arrived in Fort Lauderdale, apparently in a shipment of Mexican bromeliads.

In some South Florida areas, such as Myakka River State Park, the weevil has nearly eliminated several species including the endangered giant airplant, cardinal airplant and twisted airplant.

Researchers are most concerned about Fakahatchee Strand Preserve State Park, which contains the state's densest concentration of bromeliads, said park manager Dennis Giardina. So far, the weevil has had minimal impact at the park, home to 14 native species.

“We haven't seen the kind of wholesale die-offs that have been seen in other areas,” said Giardina, who funds expeditions to Central America with Howard Frank to seek more natural enemies to fight the weevil. “So it wouldn't be a good idea to release the flies here right now because they might not find enough weevil larvae to feed upon and perish.”

If the fly is effective, researchers will need to keep breeding and releasing the insect to ensure it's distributed throughout South Florida as quickly as possible, said Jay Thurrott, president of the Florida Council of Bromeliad Societies, which has supported the research for years.

“There's nothing like a success and a little glimmer of hope to get people going,” he said. “I think as people learn more there'll be more enthusiasm.”

Source: University of Florida

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