

Program Name: Biological Control of Imported Fire Ant
Project ID: 2803
Lead Agency: Florida Department of Agriculture and Consumer Services Division of Plant Industry

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Species Strategic Action Framework Goal: 4

Project Synopsis: The imported fire ant (IFA) currently infests over 325,000,000 acres in thirteen southern states and Puerto Rico with an average density of 1,500-3,000 ants per square meter. Isolated colonies have also been found as far west as California and as far north as Kansas City, Missouri. Additional counties are regularly added to the quarantine zone, particularly in the northern and westernmost infested states. Because of their ferocious sting and aggressive behavior, the IFA is considered a major public nuisance. They have also been found to decrease the diversity and number of native ant species and have a negative impact on wildlife, particularly ground nesting animals such as rodents, birds, turtles, alligators, and deer. The IFA is estimated to cost \$6 billion annually to households, businesses, schools, governments, and institutions. Annual agricultural losses to IFA are over \$750 million, including crop damage, livestock loss, treatment expenses, and repair and replacement of equipment. Treating all infested land 2-4 times a year with an effective insecticide would cost \$10 an acre per treatment for a total annual cost of between \$6-12 billion. Because of these facts the IFA remains a top priority target organism for biological control in the southern states.

Phorid decapitating flies from South America, the native home of the IFA, are promising biological control agents because they are highly host specific, are active throughout most of the year, and they appear to have population level impacts on IFA colonies. Potentially, there may be as many as fifteen species or biotypes of the fly that will have an impact on the IFA, and thus are candidates for rearing and release in the United States. The establishment of phorid flies throughout the south will be an important initial step in building an effective management program for the IFA and lessen its impact as an agricultural and public nuisance pest. It is hoped that if several species of phorid flies are established in the IFA infested area of the U.S. over the next ten or more years, the added stress caused by these flies on the IFA colonies will allow native ants and other ground dwelling organisms to better compete for food and territory. The phorid fly-IFA interaction will also hopefully allow homeowners, municipalities, and farmers to make fewer chemical control applications annually to suppress the IFA to acceptable tolerance levels, reducing these compounds adverse effects on humans, wildlife and the environment.

The phorid fly rearing and release project, a cooperative venture between DPI and the USDA, has been a tremendous success. Since 2001, two species of *Pseudacteon* sp. flies have been released at numerous sites in all quarantined states in the contiguous southeastern states and Puerto Rico. No field releases have occurred in New Mexico and only one species has been released in California. *P. tricuspis* is well established in the southern areas of the IFA regulated area (AL, FL, GA, LA, MS, TX and PR), and moderately established in Arkansas, North Carolina and South Carolina. To date, *P. tricuspis* is not known to be established in California, Oklahoma or Tennessee. The second species, *P. curvatus*, is moderately to well established in all southern states (AL, AR, FL, GA, LA, MS, NC, OK, SC, TN and TX) and Puerto Rico. *P. curvatus* has not been released in California. By the end of 2011 *P. tricuspis* and *P. curvatus* were estimated to respectively occur in almost 65% and 90% of the fire ant quarantined area. Two additional species, *P. obtusus* and *P. cultellatus*, have also been released in several states and data on establishment and spread is still pending.

Current Status: Ongoing (project up for renewal annually)

Project Schedule:

Start Date: 7/1/2014

Finish Date: 6/30/2016

Detailed Project Budget Information

	2014	2015	2016	2017	2018	Balance to Complete	Total
Federal	\$278,000	\$260,000	\$243,000				
SFWMD**							
Total	\$278,000	\$260,000	\$243,000				TBD

Contact: Dr. Greg Hodges, Assistant Director, Division of Plant Industry, Florida Department of Agriculture and Consumer Services.

Hyperlink: <http://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Science/Biological-Control/Phorid-Fly-Rearing>