

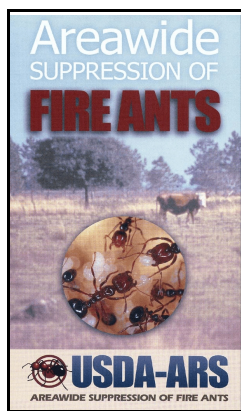


Fire Ant Trails: News from the Texas Imported Fire Ant Research & Management Plan

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AREAWIDE PEST MANAGEMENT PARTNERSHIP INITIATIVE: SUPPRESSION OF FIRE ANTS



The United States Department of Agriculture, Agricultural Research Service (USDA, ARS) has initiated a multi-state collaborative project to demonstrate the integrated management of imported fire ants (*Solenopsis invicta* and *S. richteri*). This program is focusing on area-wide

imported fire ant management in improved pasture sites using a combination of biological and chemical methods compared to use of chemical methods alone (see Brochure, "[Areawide Suppression of Fire Ants](#)").

Collaborators are from agencies in Florida, Mississippi, Oklahoma, South Carolina, and Texas and represent universities, Extension, USDA-ARS and USDA-APHIS.

This partnership initiative is the first multi-year, large-scale demonstration of an integrated approach using the new blended bait product treatment in combination with biological control agents. Over the coming years, demonstration sites will be monitored periodically for imported fire ants, other ant species, and presence of biological control agents. Re-application of these large plots will occur when an "action threshold" of 20 fire ant mounds per acre has been reached. Differences in the need for re-treatment between sites with or without established biological control agents can

provide an indicator of the impact of the biological control component part of this effort. An economic evaluation of treatments is being coordinated by Dr. Curtis Lard, Agricultural Economist at Texas A&M University. Data will provide information for landowners, ranchers and others considering area-wide management of imported fire ants in agricultural areas.

In each state at least two sites have been selected. Each site has been treated with the "hopper blend" treatment using hydramethylnon (Amdro® Pro or Seige® Pro) plus s-methoprene (Extinguish®)(see [Fire Ant Trails 5\(2\)](#)). Around one or more of these sites, two biological control agents of imported fire ants have been established or released: 1) parasitic phorid flies, *Pseudacteon tricuspis*, (*P. curvatis* in Mississippi) and 2) a disease of fire ants, a *Thelohania* sp. These sites have now been selected and treated at least once. The goal of these demonstrations is to document if releases or established biological control agents around the perimeter of these large treatment areas will reduce the need for re-treatment by prolonging the period of ant control using an action threshold to trigger re-application(s).



In Texas, efforts have been directed by Dr. Charles L. Barr, Extension Program Specialist (Fire Ant Project), with assistance from Alexandro Calixto, Extension Assistant (Fire Ant Project). Dr. Forrest Mitchell has developed a survey protocol for PCR detection of *Thelohania* from field samples and has assisted in detection of diseased ants. Two sites have been selected and treated in late May and again in mid-October, 2002. The “control” site, where no biological control agents were released, is the NK Cattle Company (1,800 acres) located 9 miles north of Bryan in Brazos County and owned by Marc and Diana Fratessa. The “treatment” site is the Five Eagle Ranch (2,800 acres) located 5 mi north of Caldwell in Burleson County and owned by Mr. H. Norman Eagleton and managed by Mr. Glen Rutherford.

At the treatment site, 3,595 phorid flies were released between April 29 and May 11, 2002. Only 3 flies have been recovered since the release (July 29). Of 20 1/8-acre circle plots within the treated area, 4 out of 20 were found to harbor *Thelohania* infections, and of 30 plots outside the perimeter of the treated area 11 had infected ants. A few plots (2/20 in treatment



area and 2/30 around perimeter) on the control site were also found to harbor *Thelohania* infected ants.

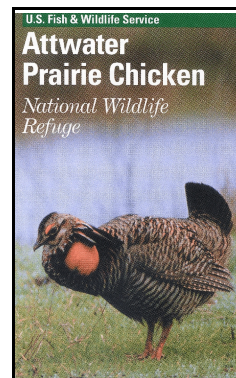
Survey crew (left to right): Charles Barr, Nathan Riggs, Anna Kjolen, Beth Hickman, Neal Lee and Paul Nester.

Treatment results: The “hopper blend” treatment, applied using aerial equipment at 1.5 lbs blended product per acre or at 2.0 lbs blended product per acre using Herd GT77

ground application equipment (in Oklahoma) most treatments provided roughly 90 percent control (range: <80 to 98%). At this point, the chemical treatment has been shown to be highly effective. Only in one instance (Florida control plot), did initial treatment fail to perform as expected, requiring re-application.

Location	Site	Size (acres)	Percent Control
Florida	Control	324	<80% (4 wks)
	Treatment	336	>93% (4 wks)
Mississippi	Control	253	98% (4 wks)
	Treatment	228	85% (4 wks)
	Treatment	253	90% (4 wks)
Oklahoma	Control	150	89.4% (8.6 wks)
	Treatment	150	96.7% (8.6 wks)
	Treatment	150	91% (8.6 wks)
South Carolina	Control	300	not reported
	Control	300	not reported
Texas	Control	300	90% (10 wks)
	Treatment	300	88% (10 wks)

PHORID FLY RELEASE PROGRAM FOR ATTWATER PRAIRIE CHICKEN NATIONAL WILDLIFE REFUGE
<http://southwest.fws.gov/refuges/texas/apc.html>



The Attwater's prairie chicken (*Tympanuchus cupido attwateri*) has become dangerously close to extinction.

Today, less than one percent of the original prairie once occupied by this subspecies remains. The 8,385-acre

Attwater Prairie Chicken National Wildlife Refuge (APCNR) offers one of the last hopes for survival of this endangered bird. Typically, about half the adults die each year from predation and other natural causes. A hen lays a dozen eggs in the spring and if she's lucky, they'll hatch about 26 days later. Only some 30 percent of all nests escape predators that include opossums, skunks, racoons, coyotes, snakes, and domestic dogs and cats. Less than half the chicks make it to adulthood.

The red imported fire ant, *Solenopsis invicta*, has been reported to be one of the predators of the Attwater's prairie chicken. Ants were monitored in the Refuge in the 1991 and 1992 (Drees, Hoskins and Morrow, <http://fireant.tamu.edu/research/arr/category/ecological/90-91Pg08/90-91Pg8.pdf>) and found to be largely of the single queen or monogyne form occurring at relatively low ant mound numbers per acre (range: 29 to 89). Use of insecticides in this site could provide temporary ant suppression, but could not be maintained over geological time. If treatments were discontinued, re-infestation to ant population levels that may exceed the current level could occur, particularly if the multiple queen or



polygyne form of the fire ant were to replace the monogyne form. Thus, a sustainable biological approach to suppressing this population is desirable.

Drs. Rich Patrock (front left) and Mike Morrow (front right) releasing phorid flies, 8 July 2002.

This site is ideal for release and

establishment of the parasitic phorid fly, *Pseudacteon tricuspis*, and other natural enemies of the imported fire ant. This phorid fly species orients to ant mounds disturbed by cattle or predators. Female flies are produced in ants of larger workers which are more numerous in monogyne fire ants.

Releases began on the 8th of July 2002 at the request of Dr. Mike Morrow, Assistant Manager of the Attwater Prairie Chicken Wildlife Refuge in Colorado County. Phorid flies were provided for release by Dr. Rich Patrock of the University of Texas at Austin. Dr. Patrock works under the direction of Dr. Larry Gilbert. Assistance was provided by Dr. Bastiaan M. Drees, Director of the Texas Imported Fire Ant Project.

The release site was chosen with a predominately monogyne social form, and fire ant mound densities typical for that part of the state. The spot was adjacent to a semi-permanent water tank in a grass-forb pasture. To date 8 releases have been made (8-Jul-02, 11-Jul-02, 15-Jul-02, 18-Jul-02, 23-Jul-02, 11-Sep-02, 18-Sep-02 and 4-Oct-02) totaling 8,952 flies; 4,224 of these were females.

Phorid fly establishment will be monitored to document successful establishment, overwintering and spread. Documenting fire ant suppression from phorid fly establishment may require several years.

NEW FACT SHEET PROVIDES AN ORGANIC VERSION OF THE TEXAS TWO-STEP METHOD FOR IMPORTED FIRE ANT CONTROL

Fire Ant Plan Fact Sheet, FAPFS039, "An Organic Two-Step Method for Imported Fire Ant Control," provides a discussion of state and federal organic certification programs. It proposes a certifiable program using: **Step 1**) a broadcast application of a spinosad fire ant bait product; and **Step 2**) treating nuisance ant mounds using a product containing d-limonene as a mound drench.

This program demonstrates that the Two-Step method is a "product neutral" approach in which any combination of a broadcast-applied

bait and individual mound treatment products can be used. The goal of the Two-Step program is to reduce or eliminate the over-use of expensive, labor-intensive mound treatments in areas infested with more than 20 imported ant mounds per acre.

This fact sheet is available on the Project's web site, <http://fireant.tamu.edu>, and copies can be requested from the Fire Ant Project office.

USDA-APHIS APPROVES FIPRONIL AS AN APPROVED FIRE ANT QUARANTINE TREATMENT
http://www.aphis.usda.gov/lpa/press/2002/09/fantchem_ppq.html

SUMMARY (Federal Register 67(181)7 CFR Part 301) : The United States Department of Agriculture - Animal and Plant Health Inspection Service (USDA-APHIS) is amending the imported fire ant regulations to add the insecticide fipronil (Chipco®) (see [Fire Ant Trails 5\(2\)](#)) to the list of chemicals authorized for the treatment of regulated articles and to provide instructions for its use in soil or potting media and on grass sod. This action makes another authorized treatment available to persons wishing to move containerized plants and commercial grass sod interstate from quarantined counties. The agency is also updating the regulations by making rates of application of chlorpyrifos (Dursban®), a currently authorized insecticide, consistent with current product labeling (Effective date: September 18, 2002). Other approved insecticides include pyriproxyfen (Distance®), fenoxycarb (Award®), hydramethylnon (Amdro®) and bifenthrin (Talstar®).

ELIZABETH "WIZZIE" BROWN, THE "NEW" EXTENSION AGENT-IPM (FIRE ANT PROJECT), SERVING TRAVIS AND SURROUNDING COUNTIES

The Texas Imported Fire Ant Research and Management Project is pleased to announce our new Extension Agent - IPM (Fire Ant Project) for Travis and surrounding ("touch") counties, Elizabeth "Wizzie" Brown. She replaces Lisa

Lennon, who previously held this position. Wizzie started with the Texas Cooperative Extension in Austin on October 1, 2002. Wizzie obtained her undergraduate degree in entomology from Ohio State University. While there, she was employed at the Insectary where she had the opportunity to rear a variety of arthropods. After graduating, she moved to Texas to attend Texas A&M University to continue her studies in entomology. Her master's work consisted of aspects of the biology of *Aprostocetus hagenowii*, a parasitoid of peridomestic cockroaches. Once she left Texas A&M, she moved into the private sector working for a pest control company in Houston.

TEXAS COOPERATIVE EXTENSION BOOKSTORE NOW AVAILABLE:
<http://tcebookstore.org>

This new web site provides access to educational resources with a convenient and attractive storefront for browsing and purchasing Extension educational products.



Prepared by: Bastiaan "Bart" M. Drees,
Fire Ant Project Director

A handwritten signature in black ink, appearing to read 'B.M. Drees', is written over a white background.

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