

New phorid fly species turns red imported fire ants into 'zombies'

The parasite takes over robotic control of the fire ant's central nervous system.

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OVERTON – Zombie fire ants may not sound like a cool thing, but wait a minute, said a [Texas AgriLife Extension Service](#) expert.

On April 29, on the grounds of the Texas AgriLife Research and Extension Center at Overton in East Texas, Dr. Scott Ludwig released fire ants infected with a new type of phorid fly, a minuscule parasite that only preys on red imported fire ants.

The infected ants will soon exhibit some very bizarre behavior, he said.

"First they become zombies, their movements under the control of the parasite. Then their heads fall off and the parasite emerges," said Ludwig, AgriLife Extension [integrated pest management](#) specialist.

Previously released phorid flies only preyed on ants in disturbed mounds. In contrast, the species, *Pseudacteon obtusus*, Ludwig released in April is attracted to foraging red imported fire ants and not disturbed mounds, which is even better, he said, because attacks of ants are not dependent upon the mounds being disturbed.

The "zombified," fire ant is made to wander about 55 yards away from the mound to die.

"The parasite does this so it can complete development without being detected and attacked by the fire ant colony," Ludwig said. "By making their hosts wander away, the parasite is insuring its survival."

As with the new species, the previously released phorid fly species in Texas only attacks red imported fire ants. They inject their eggs into their bodies. In response, fire ants withdraw to their underground nests and reduce their foraging range, he said.

Once established, it was hoped that earlier releases of phorid flies would spread beyond the original release sites, and there has been evidence that they have, Ludwig said.

"Pseudacteon tricuspidis was first released near Austin in 1995. From 2003 to 2006, it spread over 10,000 square miles," Ludwig said. "The second species, P. curvatus, was established 2004 and is beginning its spread."

The parasite isn't attracted to native ant species, he emphasized.

"We're hoping the new parasite will reduce the foraging of fire ants, and thereby allow our native ants to regain some footing," he said.

The release was part of the [Texas Imported Fire Ant Research and Management Project](#).

"The project was initiated in 1997 as a result of the Texas Legislature funding an exceptional item requested by Texas AgriLife Research," Ludwig said. "The project's goals are the management of imported fire ant to below economic levels on agricultural lands and to eliminate the imported fire ant as a nuisance or health threat in urban environments." The phorid flies infesting the fire ants Ludwig released were raised by Dr. Lawrence Gilbert, director of the Brackenridge Field Laboratory at the University of Texas at Austin.

"UT researchers have taken the lead on phorid fly research in the state," Ludwig said.

More information on the project and fire ant research can be found at <http://web.biosci.utexas.edu/fireant/index.html> or <http://fireants.tamu.edu/>.

The new species was previously released in 2007 only in South Texas, where it was established but did not spread.

"It may not have spread because of the drought," he said.

Ludwig's release was the first in East Texas. In 2010, he plans to set out traps baited with live red imported fire ants to determine if and how rapidly the phorid fly has spread.

"Earlier data suggests they can spread 25 miles a year through wind-assisted dispersion," he said.

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