

# Mosquito research shows 'your worst enemy could be your best friend'

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(PhysOrg.com) -- Your worst enemy can sometimes also be your best friend, according to entomologists from the University of Florida and Illinois State University.

Their research has shown how one mosquito species is being saved by the very predator that usually eats it — and how that helps protect humans from diseases like dengue fever.

In the 1980s the U.S. began importing a large number of used tires from Asia. Water that had collected in these tires carried the larvae and eggs of the Asian tiger mosquito, a pest with a voracious appetite known to carry disease.

This invasive mosquito is more aggressive in its search for food than the more docile native mosquitoes, and theoretically, should have driven the native species to near extinction as it spread, said Phil Lounibos, an entomologist with UF's Institute of Food and [Agricultural Sciences](#).

However, as the researchers explain in the March issue of the journal *Oecologia*, the invasive mosquitoes seem to be the preferred meal of the predatory midge, *Corethrella appendiculata*. The paper is titled, "Your worst enemy could be your best friend: predator contributions to invasion resistance and persistence of natives."

As observed during an experiment at UF's Florida Medical Entomology Laboratory at Vero Beach, the larvae of the midge usually consume the

larvae of the invasive mosquito instead of their natural prey, the larvae of the native treehole mosquito.

“This keeps the invasive mosquito in check and gives the [native species](#) a fighting chance,” Lounibos said.

He said it’s not entirely clear why the midge seems to find to prefer the Asian cuisine, although it may have to do with the fact that the [larvae](#) of the invasive mosquito are smaller and easier to handle.

Whatever the reason, the researchers say the study illustrates the importance of [biodiversity](#). If it weren’t for its own predator, the native mosquito might have been starved out of the food chain.

And if it weren’t for one pest and its natural enemy, we humans would face a much more dire threat from another.

In large numbers, the Asian tiger mosquito could have hurt Florida’s tourism industry and created a more significant public health concern from diseases such as dengue fever. Dengue sickens as many as 100 million people each year in the tropics, and produced an outbreak in Key West in 2009 for the first time in more than 50 years.

“I’m not saying that spraying for the native [mosquitoes](#) or other pest control efforts aren’t necessary,” said Steven Juliano, an entomologist with Illinois State University. “But it’s important to understand that there is a balance, and that you can’t tweak one aspect of nature without affecting many others. We owe it to ourselves to try to understand that balance.”

Provided by University of Florida

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