

**Media contact:**

JoAnn C. Adkins

305-348-0398

[jadkins@fiu.edu](mailto:jadkins@fiu.edu)

news.fiu.edu

@FIUNews

**Scientists bait mosquitoes with one of Earth's most common scents**

Scientists have developed a new method for baiting mosquitoes to targeted sources of water for an innovative attract-and-kill approach to mosquito control.

Geosmin is one of the most recognizable and common microbial smells on the planet, and scientists from Lund University, University of Washington, and FIU have discovered the organic compound is particularly appealing to mosquitoes looking for a place to lay their eggs.

It's not just the egg-laying females who love the geosmin scent, according to lead author of the study Nadia Melo, a biologist from Lund University who first discovered how geosmin attracts female mosquitoes.

"In the laboratory, not only did females prefer to lay eggs near Geosmin-scented water, but mosquito larvae loved it too," she said.

The team designed an inexpensive container system with geosmin-scented water which successfully attracted mosquitoes and drew them away from unscented ones.

"It's the smell of rain as it drops on the parched earth," said FIU biologist Matthew DeGennaro, who was part of the team that made the discovery. "We now know geosmin is part of the story of how mosquitoes breed."

Once a mosquito laid its eggs, the container system could then trap and kill the larvae.

"If we can get mosquitoes to lay eggs in traps, we can break the breeding cycle and suppress mosquito populations," says FIU biologist Andre Luis da Costa da Silva who lead the field experiments in Miami.

Field tests were conducted in Miami and Brazil and the geosmin was effective in drawing mosquitoes away from other water sources when added at specific concentrations. While the findings were exciting, there was one challenge to the results — geosmin can be difficult and expensive to obtain.

The researchers decided to try beetroots as a cost-effective alternative since geosmin is the source of that plant's earthy taste. Even though peels from beetroots contain other chemical compounds, the mosquitoes appeared undeterred in their attraction as larger numbers of eggs were found in containers with beetroot peel than without.

“The use of beetroot peels as bait adds the benefit that the part of the beetroot that usually goes to waste now has a new use,” says Lund University biologist Marcus Stensmyr who led the international team of researchers who made this study possible. The beetroot portion of the research was a small-scale field study in Brazil, but DeGennaro says the results are promising enough to warrant further study at other sites.

DeGennaro has garnered international recognition as the first scientist to successfully create a mutant mosquito for behavioral study and for [discovering olfactory receptors](#) mosquitoes use to help find humans when looking for a meal. His research is focused on reversing the trend of deadly epidemics caused by mosquito-borne diseases. He hopes to create new mosquito-control techniques and improved repellants to make people less attractive, even invisible, to mosquitoes.

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