

Florida Keys to release modified mosquitoes to fight illness

20 August 2020, by Curt Anderson



In this Jan. 27, 2016, file photo, an *Aedes aegypti* mosquito known to carry the Zika virus, is photographed through a microscope at the Fiocruz institute in Recife, Pernambuco state, Brazil. Sometime next year, genetically modified mosquitoes will be released in the Florida Keys in an effort to combat persistent insect-borne diseases such as Dengue fever and the Zika virus. The plan approved Tuesday, Aug. 18, 2020, by the Florida Keys Mosquito Control District calls for a pilot project in 2021 involving the striped-legged *Aedes aegypti* mosquito, which is not native to Florida. (AP Photo/Felipe Dana, File)

Sometime next year, genetically modified mosquitoes will be released in the Florida Keys in an effort to combat persistent insect-borne diseases such as Dengue fever and the Zika virus.

The plan approved this week by the Florida Keys Mosquito Control District calls for a pilot project in 2021 involving the striped-legged *Aedes aegypti* mosquito, which is not native to Florida. But it does transmit several diseases to humans, particularly in the Keys island chain where nearly 50 cases of Dengue fever have been reported so far this year.

The plan by the Oxitec biotechnology company is to release millions of male, genetically-altered

mosquitoes to mate with the females that bite humans because they need the blood. The male mosquitoes, which don't bite, would contain a genetic change in a protein that would render any female offspring unable to survive—thus reducing the population of the insects that transmit disease, in theory.

Kevin Gorman, an Oxitec scientist, said Thursday in a phone interview from the United Kingdom that the company has successfully done such projects in the Cayman Islands and Brazil.

"It's gone extremely well," Gorman said. "We have released over a billion of our mosquitoes over the years. There is no potential for risk to the environment or humans."

Oxitec points to numerous studies by government agencies, ranging from the Environmental Protection Agency to the U.S. Centers for Disease Control and Prevention, that underscore the safety of the project. Several Florida government agencies have approved it as well.

Yet, there are people who worry about using genetically-modified organisms, or GMOs, that they believe could alter the planet's natural balance. At a meeting Tuesday of the Florida Keys mosquito control board, several people questioned the wisdom of the project.

"You have no idea what that will do," Barry Wray, director of the Florida Keys Environmental Coalition, told the board.

Whether or not the modified mosquitoes can efficiently crash the population of these mosquitoes in Florida remains an open question, some experts say.

"The mosquitoes created in a lab have not gone through a natural selection process, in which only the fittest survive and mate. Once they are released

in the natural environment, will they be as fit as the naturally occurring males and able to outcompete them for mates?" said Max Moreno, an expert in mosquito-borne diseases at Indiana University who is not involved in the company or the pilot project.

Another question is whether the mosquitoes may have other unintended effects on the environment. If a spider, frog or bird eats the mosquito, will the modified protein have any effect on the predator?

"An ecosystem is so complicated and involves so many species, it would be almost impossible to test them all in advance in a lab," said Moreno.

Still, Keys mosquito board members voted 4-1 in favor of the project. One of the supporters, Jill Cranny-Gage, said at the meeting that insecticides and other chemical means have become less effective against the *Aedes aegypti* mosquito.

"The science is there. This is something Monroe County needs," Cranny-Gage said. "We're trying everything in our power, and we're running out of options."

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