

Sending dengue mosquitoes into a dead end

By McClatchy Foreign Staff, adapted by Newsela staff on 10.17.13

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A Health Ministry worker fumigates in an area near the Panama Canal in July 2013. Mosquitoes can breed in stagnant water collected in parked or abandoned autos, barrels, flowerpots and tires. Tim Johnson/MCT

PANAMA CITY — Scientists have created a new type of mosquito. They think it can help fight a deadly disease called dengue fever.

The insects have been called suicide mosquitoes, dead-end bugs and even Frankenskeeters. Panama is one of the countries that may use them to try to get rid of mosquitoes that carry the terrible disease. Other countries are also doing tests.

The mosquito that carries the dengue virus has spread to 100 countries. It could reach 2.5 billion people. Not all of them would get the disease. But 50 million to 100 million people do each year, health officials say. About 25,000 die.

People with the disease get dehydrated very fast. "In a matter of hours, the cases can grow more complicated," said Dr. Carlos Galvez. He is a health official in Panama.

A Mosquito Called OX513A ...

This has been a particularly bad year for dengue in the Western half of the world. Officials say there have been 1.4 million cases.

Panama has one of the best public-health systems in Latin America. Yet even Panama struggles with a type of mosquito known as *Aedes aegypti*. The mosquito originally came from North Africa. It is the main carrier of the dengue virus.

Teams patrol the streets spraying chemicals in a constant battle against the mosquito. The government reminds Panamanians to drain any water from anywhere it may collect. Buckets, flowerpots and old tires are perfect places for mosquitoes to lay eggs.

Before long, public health officials may have a new tool. A British company called Oxitec Ltd. has a mosquito called OX513A. The mosquito's genes have been changed. Genes are the building blocks of a living thing. For example, in people genes determine what color eyes someone will have. Some people have a gene that makes them likely to get a disease.

... Which Has A Death Gene

Oxitec mosquitoes are all male. They contain a death gene. When the mosquitoes are released into the wild, they mate with females, but the offspring don't survive. That's why they're called dead-end bugs.

Sometime early next year technicians will release tens of thousands of the mosquitoes in Arraijan. The community is across the canal from Panama City. But first, Panamanian officials have to say it is okay.

"We plan to do about 50,000 per week," said Dr. Nestor Sosa. He runs a research group. There need to be at least 10 of the special mosquitoes for every normal mosquito, he said.

If all goes according to plan, the mosquito population will drop. So would the chance of catching dengue, Galvez said.

Some people don't agree with the plan to use the OX513A mosquitoes. People think they may not work. Others don't think enough studies have been done on how they will affect other animals and plants.

But Will It Do The Job?

It is possible dengue could get worse, said Dr. Helen Wallace. She runs a British group that monitors genetic science. Wallace said another mosquito could develop and carry the virus.

The new mosquito is being developed too quickly to figure out what might happen, one expert said.

Olmedo Carrasquilla, an environmental lawyer in Panama, said his nation should better educate the public on mosquito control. Normal methods to control mosquitoes work, he said. Why spend millions on something that might not work?

Sosa, the health official, disagreed with some of the arguments.

“The mosquito dies in a few days,” Sosa said. It is not likely to affect the environment. “It’s not that we are doing something that is environmentally unfriendly.”

It Worked Well In Brazil

Hadyn Parry is in charge of Oxitec. He said that his company thought its mosquito was safer than using insecticides. Those chemicals “affect all insects in a given area,” he said. Insecticides can also get into other animals and the environment, and stick around.

Dead-end mosquitoes only affect one species, he said.

Mosquitoes live for about three weeks. They generally spend that time in an area 200 yards from where they were born. The Oxitec mosquitoes, he said, can always be detected.

Oxitec mosquitoes have been tested in several places, Parry said. He expects tests in India and in the Florida Keys, if state and U.S. officials give the okay.

In tests earlier this year in a village in Brazil, Oxitec said it got rid of 96 percent of the dengue mosquito.

Quiz

- 1 Read the section "... Which Has A Death Gene." Which of the following choices from the section shows why some people are uncertain about using the Oxitec mosquito?
- (A) When the mosquitoes are released into the wild, they mate with females, but the offspring do not survive.
 - (B) The community is across the canal from Panama City. But first, Panamanian officials have to say it is OK.
 - (C) "We plan to do about 50,000 per week," said Dr. Nestor Sosa. He runs a research group.
 - (D) Others do not think enough studies have been done on how they will affect other animals and plants.
- 2 Read the section "It Worked In Brazil." Which of the following paragraphs from that section shows why Oxitec believes the dead-end mosquitoes will work in Panama?
- (A) Hadyn Parry is in charge of Oxitec. He said that his company thought its mosquito was safer than using insecticides.
 - (B) Dead-end mosquitoes only affect one species, he said.
 - (C) He expects tests in India and in the Florida Keys, if state and U.S. officials give the OK.
 - (D) In tests earlier this year in a village in Brazil, Oxitec said it got rid of 96 percent of the dengue mosquito.
- 3 Read the following from the section "A Mosquito Called OX513A ..."

This has been a particularly bad year for dengue in the Western half of the world. Officials say there have been 1.4 million cases.

Which of the following is the BEST definition for "bad" as it is used in the article?

- (A) evil
- (B) rotten
- (C) intense
- (D) unpleasant

- 4 Read the following from the section "But Will It Do The Job?"

"The mosquito dies in a few days," Sosa said. It is not likely to affect the environment. "It's not that we are doing something that is environmentally unfriendly."

Which word could replace "unfriendly" and keep the meaning of the excerpt the same?

- (A) mean
- (B) unclean
- (C) offensive
- (D) destructive