

Fish, other mosquitoes now warriors in Zika battle

February 10 2016, by Carlos Mario Marquez, With Roberto Cortijo In Lima And Alba Tobella In Bogota



Aedes aegypti mosquitos in a laboratory at the University of El Salvador, in San Salvador

With larva-chomping fish and genetically modified insects, Latin Americans are deploying legions of little helpers to destroy mosquitoes carrying the Zika virus in the world's latest mass health scare.

Scientists are devising numerous ways to try and stamp out the [mosquitoes](#) whose bites spread the virus, which they suspect can cause brain damage in babies and paralysis in adults.

Some want to wipe out baby mosquito [larvae](#) in standing water where the insects breed. Others propose to zap the [male mosquitoes](#)' privates with radiation to make them impotent.

Still others just want a plain old toad in their home to gobble any mosquitoes that buzz in.

In San Diego Beach on the Pacific coast of El Salvador, fishermen use fat sleeper fish to devour the mosquitoes while they are still wingless larvae.

"They are true warriors in the fight against Zika. They eat all the mosquito larvae in the barrels where we store our water," said Rafael Gonzalez, 30, a local fisherman.

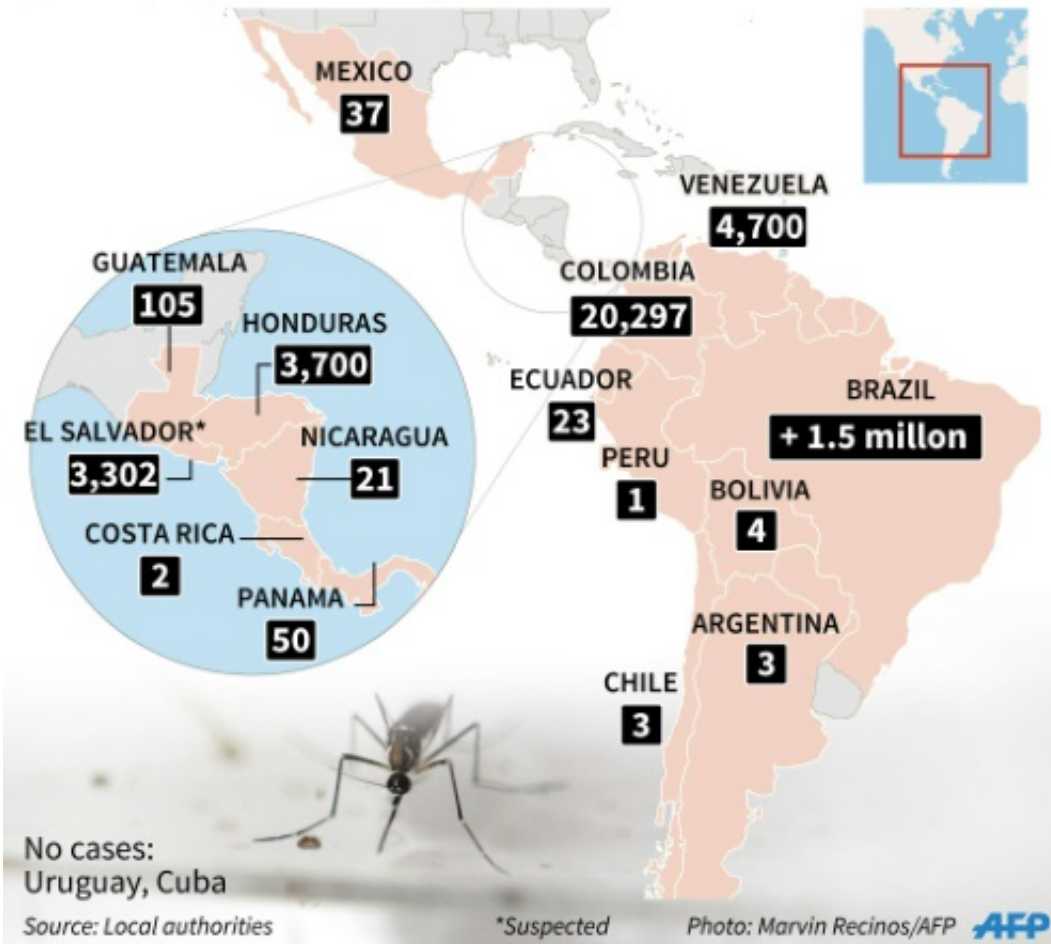
"Everyone helps out," adds Marielos Sosa, the initiative's organizer.

"The young people help catch the fish in the estuary. The adults keep an eye on the water stocks in their homes."

This prevents the need to fumigate homes and water storage sites, as many towns are doing.

Zika in Latin America

■ Cases (indigenous and foreigners)



Map showing the number of cases of the Zika virus in Latin America

"Fumigation can be effective in reducing the adult mosquito population, but it is not as effective against other forms of the mosquito such as larvae," said Carissa Etienne, head of the Pan American Health Organization.

Fumigation by workers in overalls spraying smoke "has a political impact because it is visually striking, but we are not sure whether it is

really effective in fighting the *Aedes Aegypti* mosquito," the species that carries Zika, she said.

Killing mosquitoes with asparagus

Before Zika hit the region, Latin American countries had developed various techniques for fighting these mosquitoes, which also carry fevers such as dengue and chikungunya.

In Peru, biologist Palmira Ventosilla in 1992 devised an organic insecticide made from coco, yucca, asparagus and potatoes—a recipe endorsed by the World Health Organization.

Natural so-called biolarvicides "are cheap and non-toxic and can be used by the public," Ventosilla told AFP.

The treatment devised by her team at Peru's Cayetano Heredia University uses the vegetable mixture to nourish and multiply a bacteria that destroys the larvae.

A kit developed by the university including a sprinkler to apply the insecticide costs about a dollar and can kill off larvae in 10 minutes, Ventosilla said.



Health Ministry employees fumigate against the *Aedes aegypti* mosquito, vector of the dengue, Zika and Chikungunya viruses in Guatemala City

"It is a simple method that we are showing to the public so they can produce it themselves."

In neighboring Colombia, the second worst-hit country in the Zika outbreak after Brazil, scientists are fighting mosquitoes with mosquitoes.

Tropical disease specialists at Antioquia University are trying to spread among mosquitoes a bacteria known as *Wolbachia*, which blocks their ability to pass on disease to humans.

"No one is really thinking they can eradicate the *Aedes Aegypti* mosquito completely. The aim is to keep its numbers so low that it does not pass on the illness," said the director of the project, Ivan Dario

Velez.

Teams in Brazil and Panama meanwhile are experimenting with male mosquitoes that are genetically modified in such a way that when they mate, the resulting larvae die off.

Sterilizing mosquitoes

In Mexico, the head of the International Atomic Energy Agency, Yukiya Amano, said it was testing the use of radiation to stop the mosquitoes breeding.

Scientists hope to use radiation "to make the male mosquito sterile, so then he goes back to his habitat and even if he mates, the female will not have any offspring," Amano was quoted as saying by Mexican magazine Reforma.

"Bit by bit, the insect's population gets reduced and in the end it is eradicated."

In Argentina, online vendors are hawking frogs and toads for \$7 each.

They are touting them as a protection against Zika, and especially against the more common dengue fever—and as an alternative to mosquito repellents or insecticides.

Those chemical products are often sold out in shops and the government has warned that *Aedes Aegypti* is resisting fumigation efforts.

Argentina has only reported a handful of Zika infections among travelers returning from abroad, but like Mexico it has thousands of cases of dengue.

In the 1960s Latin America brought *Aedes Aegypti* under control but "it started multiplying again due to carelessness by the authorities," Velez said.

"Right now, the situation is more complicated. The mosquito is present in more towns, there is more population movement and global warming is helping it survive," he warned.

"But if the government adopts policies to bring it under control, it can be done."

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