

Millions of dead bees are a side effect of spray meant to control Zika spread

By Alan Yuhas, The Guardian, adapted by Newsela staff on 09.08.16

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In this August 18, 2016, photo, a queen bee (center left) is visible in a beehive. Around the United States, bees and other pollinators contribute an estimated \$29 billion to farm income. Photo: AP Photo/Gemunu Amarasinghe

Beekeepers around the southeastern U.S. have been huddled around their hives. They fear a new threat to their livelihood: a fine mist beaded with neurotoxin, sprayed from the sky by officials at war with mosquitoes that carry the Zika virus.

Earlier this week, South Carolina beekeepers found millions of dead honeybees carpeting their apiaries, or beehives. The bees had been killed by an insecticide. Video posted by a beekeeper to Facebook showed thousands of dead insects heaped around hives. Meanwhile, a few survivors struggled to move the bodies of fellow bees.

“This is what’s left of Flowertown Bees,” a depressed keeper says in the video. Company co-owner Juanita Stanley told the Associated Press her farm looked “like it’s been nuked.” She estimated that 2.5 million bees were killed.

Around the U.S., bees and other pollinators contribute an estimated \$29 billion to farm income. Insects which carry pollen between plants are vital to the growth of many fruits and vegetables.

Zika Is A "Clear And Public Health Crisis"

Clemson University's department of pesticide regulation is investigating the incident. The program head, Dr. Mike Weyman, said South Carolina has strict rules about protecting pollinators. However, county officials were allowed to use the neurotoxin, Naled, because of a clause that permits them to spray the poison in a "clear and public health crisis."

More than three dozen people have tested positive for Zika in South Carolina, Weyman said. Officials have made it a priority to prevent the disease from spreading through the *Aedes aegypti* mosquito. Mosquitoes can pick up Zika from humans when they bite them in order to feed on small amounts of their blood. Once infected with the disease, the mosquitos spread it to other humans they bite. Many people have only mild symptoms from the disease. It is particularly dangerous for a pregnant woman to get Zika. It can cause severe head and brain malformations and other birth defects for her child when it is born.

South Carolina's procedure for dealing with Zika infections is to alert local officials of a carrier's residence, Weyman said. Local authorities then target the mosquitoes in a 200-yard radius, in this case with spray.

Beekeepers Worried About Future Effect On Bees

Flowertown Bees was listed on local records but not in the state's voluntary registry of pollinators, according to Weyman.

Despite the investigation into what went wrong, the killing has beekeepers worried about what might happen next.

"Everyone that I've spoken to has major concerns about the effect" of insecticides, said Jennifer Holmes, vice president of the Florida State Beekeepers Association. Holmes is the co-owner of a company with about 300 colonies north of West Palm Beach.

Holmes has spent the last week working with beekeepers and state and county officials. The keepers, she said, fear "not just the immediate die-offs, but possible genetic die-offs or sterility" for bees that survive the first sprays.

"We understand the serious threat of possible disease," she said, "but we also have to maintain our agricultural livelihood."

Naled Considered Safer Than Other Chemicals

Experts at the Centers for Disease Control and Prevention (CDC), the Environmental Protection Agency (EPA) and independent universities say Naled is far safer than other chemicals. It breaks down rapidly and, in the very low doses at which it is prescribed, should not pose a risk to humans.

"A lot of people don't realize that we always have the environment in mind," says Dr. Kirsten Healy, a public health entomologist at Louisiana State University.

Even the mosquitoes targeted “quickly bounce back,” she said. Healy recommended a multipronged approach. There would be aerial and ground sprays along with removing the trash cans, bird feeders and other containers where water collects and mosquitoes breed.

Butterflies Also In Danger

Aerial sprays threaten other pollinators. Dennis Olle, director of conservation programs for the North American Butterfly Association, noted the effect of chaotic ocean winds near his office in Miami. The chemicals being sprayed don't necessarily hit the intended targets.

Olle admits he is an attorney, not a scientist. But he described a 2015 Florida International University study that found Naled application was uneven and harmful to butterflies.

“It kills everything,” he said.

He is worried about repeated low doses of chemicals to both pollinators and his children.

Benefits And Risks Must Be Considered

Others have similar worries in Florida and Puerto Rico, where there have been, respectively, 35 and 13,791 mosquito infections of the Zika virus. Earlier this summer in Puerto Rico, doctors rallied against Naled when the CDC made a last-ditch plea to start spraying. Governor Alejandro García Padilla rejected the proposal in July. He cited concerns over possible side effects on humans and other animals.

Some limited Naled-mosquito research has been performed in Puerto Rico in the last 30 years. Dr. Duane Gubler, a professor at Duke Medical School and an expert in infectious diseases, led that research and found that Naled had mixed results.

“It's unpredictable,” Gubler said. “We did the whole city of San Juan and it appeared to be somewhat effective in some areas but not others.”

Aedes aegypti mosquitoes, Gubler said, were especially difficult targets since they breed inside and under houses, in buckets, tires, puddles or any container with still water. Gubler said that the benefits and risks of spraying had to be considered.

“If you have to make a decision on whether it protects, say, your pregnant wife from being exposed versus killing a few butterflies, I suspect in most people's minds it's probably worth the risk.”

Quiz

1 Which of the following sentences from the article BEST supports the idea that Naled is the least harmful choice in attacking the Zika virus?

- (A) However, county officials were allowed to use the neurotoxin, Naled, because of a clause that permits them to spray the poison in a “clear and public health crisis.”
- (B) There would be aerial and ground sprays along with removing the trash cans, bird feeders and other containers where water collects and mosquitoes breed.
- (C) It breaks down rapidly and, in the very low doses at which it is prescribed, should not pose a risk to humans.
- (D) But he described a 2015 Florida International University study that found Naled application was uneven and harmful to butterflies.

2 Which sentence from the article highlights the idea that Zika is a dangerous virus?

- (A) It can cause severe head and brain malformations and other birth defects for her child when it is born.
- (B) More than three dozen people have tested positive for Zika in South Carolina, Weyman said.
- (C) Mosquitoes can pick up Zika from humans when they bite them in order to feed on small amounts of their blood.
- (D) Officials have made it a priority to prevent the disease from spreading through the *Aedes aegypti* mosquito.

3 Read the sentence from the introduction [paragraphs 1-4].

Company co-owner Juanita Stanley told the Associated Press her farm looked “like it’s been nuked.”

Does this particular sentence support the MAIN idea of the article? Why?

- (A) Yes, because it shows how bees are important to farms in the production of food.
- (B) Yes, because it helps explain the extent of damage done by the insecticide.
- (C) No, because it describes the destruction done to butterflies, not bees.
- (D) No, because it is about how a farm suffered losses as a result of too many bees.

4 There is a possibility that Naled may cause other problems in addition to harming the bee population.

Which sentence from the article BEST supports the main idea above?

Answer Key

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