



SCIENCE & TECHNOLOGY

Scientists Identify Chemical that Causes Locusts to Swarm

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Scientists say they have identified a chemical released by locusts that causes the insects to join together in huge **swarms**.

On their own, locusts are mostly harmless. But in large swarms, they can be extremely destructive. The new finding could lead to new methods to prevent locusts from joining groups to destroy huge areas of crops.

A recent study published in *Nature* identifies a pheromone believed to be responsible for the insect's swarming behavior. A pheromone is a chemical substance produced by an animal that influences the behavior of another animal of the same kind.

The pheromone, known as 4VA, was found in the world's most widespread kind of locust, the **migratory** locust. The chemical is released from the insect's back legs and is sensed by the **antennae** of other locusts.

The pheromone powerfully drew locusts of both sexes and all ages, the research found. The chemical was produced when as few as four to five locusts came together.

Swarms can grow to billions of locusts and cover hundreds of square kilometers. Migratory locusts are found in Asia, Africa, Australia and New Zealand. They attack crops including wheat, rice, corn, oats and sugarcane. Such invasions can lead to major food shortages.

Lead researcher Le Kang is with the Chinese Academy of Sciences' Institute of Zoology. He told Reuters news agency that migratory locusts are so widespread and dangerous, they represent "a serious threat to agriculture worldwide."

Kang said further research will be needed to find out if 4VA exists in other **species**, such as the desert locust. This locust is currently destroying crops in Africa and the Middle East.

Chemical substances commonly used to break up locust swarms raise concerns for human health and safety. The identification of 4VA could lead to new control methods.

Kang said a chemical could be developed to block 4VA's effects to prevent swarming. A manmade version of the pheromone might also be developed to **lure** locusts into traps to be killed.

Locusts could also be developed with genetic changes that would not react to 4VA, Kang added. Such locusts could be released to establish wild non-swarmling populations.

Leslie Vosshall is head of Rockefeller University's Laboratory of Neurogenetics and Behavior in New York. She said one of the most exciting developments would be finding a chemical that could block the reception of 4VA.

The discovery of such a molecule could provide a chemical to prevent swarms of the insects and "cause locusts to 'stand down' and return to their peaceful, **solitary** way of life," she wrote in a *Nature* article about the study.

Vosshall noted that there are still several unknowns about the research. These include whether 4VA is the only cause of swarm formation, and whether other locust species respond similarly to the compound.

I'm Bryan Lynn.

Reuters and Agence France-Presse reported on this story. Bryan Lynn adapted the reports for VOA Learning English. Mario Ritter, Jr. was the editor.

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Words in This Story

swarm – *n.* a very large number of insects moving together

migratory – *adj.* moving from place to place at different times of the year

antenna – *n.* a thin, sensitive organ on the head of an insect, crab or similar animal

species – *n.* a group of animals or plants that are similar and can produce off spring

lure – *v.* to cause a person or animal to go somewhere

solitary – *adj.* alone, separated from people
