

**University of California
UC Davis Department of Entomology and Nematology**

Africanized Honey Bees in Modesto: "Isolated Case in the Northern San Joaquin Valley," Says Extension Apiculturist Eric Mussen

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DAVIS--The recent confirmation of Africanized honey bees in Modesto--the first confirmed case north of Madera County—is “probably an isolated case, and there probably aren’t any more Africanized honey bee colonies in the northern San Joaquin Valley,” Extension apiculturist [Eric Mussen](#) of the UC Davis Department of Entomology said today.



Extension apiculturist Eric Mussen at the Harry H. Laidlaw Jr. Honey Bee Research Facility at UC Davis. (Photo by Kathy Keatley Garvey)

“I don’t think they moved there on their own,” Mussen said. “They probably swarmed during or just after the almond pollination season. The migratory beekeeper left but the bees didn’t.”

Unfortunately, the Africanized bees colonized in shrubbery along a well-traveled pedestrian and bicycle route and attacked a 70-year-old man and his three dogs on July 5 after one dog disturbed the nest. The man sustained as many as 60 bee stings, mostly on the face, as he ran an eighth of a mile to a residence.

A recently released laboratory report from the California Department of Food and Agriculture positively identified the bees as Africanized, known in the Hollywood movies as “killer bees.”

The Africanized bees may have come from Arizona, Texas, Florida or southern California, Mussen said. Migratory beekeepers from all over the country truck in their bees to pollinate California’s 800,000 acres of almonds, located in the Central

Valley from Butte to Kern counties. Each acre requires two bee colonies for pollination.

Africanized bees swarm more often than their cousins, the European honey bee, the most common bee in the United States.



Honey bee (Photo by Kathy Keatley Garvey)

"The attack is troubling but I doubt there are any more Africanized honey bee colonies swarms in that valley," Mussen reiterated. "Otherwise, more people would have encountered them in Fresno and Merced counties before they even reached Modesto in Stanislaus County."

"There's no way to tell if honey bees are Africanized without DNA testing," Mussen said. "They look about the same as the European honey bee. They tend to be a little darker than European honey bees and a little smaller. What sets them apart is their intensive defensive behavior. They've been known to chase their victims a quarter of a mile."

When beekeepers find intensive defensive behavior in their hives, they kill the queen bee and "requeen" the colony. "Over four to six weeks, the original workers die of old age and the new queen replaces them with more daughters," Mussen said.

Africanized honey bees are the result of attempts to hybridize European honey bees with an African race, Mussen said. Researchers brought Tanzanian queen bees (*Apis mellifera scutella*) to Brazil in the 1950s. In 1957, some of the African bee descendants escaped from the researchers and beekeepers and began expanding their territory.

The descendants reached southern Texas in 1990 and southern California in 1994. "In California, they were first found "just outside of Blythe, in Riverside County," Mussen said.

California State Department of Food and Agriculture officials say the hybrid is [now established](#) in more than a dozen counties in the state, primarily those south of a diagonal line that runs northeast to southwest, from northern Tulare County to the southwest corner of San Luis Obispo County. They include Imperial, Kern, Los Angeles, Madera, Orange, Riverside, San Bernardino, San Diego, Tulare and Ventura counties. Also affected are portions of Inyo, San Luis Obispo and Santa Barbara counties.

Madera is considered the most northern county to be colonized, but Mussen believes it likely isn't colonized. Only one case of Africanized honey bees has been confirmed since 2004.

"As an area becomes colonized, the Africanized bees will show their true colors—they will exhibit their



intense defensive behavior," said Mussen, a Extension apiculturist since 1976 and a worldwide authority on honey bees.

Beekeepers who collect swarms in colonized counties have a "high probability" of having an Africanized honey bee colony, he pointed out, and should always look for unacceptable defensive behavior.

"Massive stinging events involving Africanized honey bee (AFB) colonies have not been very numerous in the United States," Mussen wrote in *Bee Briefs*, one of his two bee publications on the UC Davis Department of Entomology website. "Some of the worst incidents have involved dogs that have remained near the nesting site once the stinging commenced and received in excess of 2000 stings. In most human-stinging incidents, sting numbers have approached the hundreds at worst, but usually were less than one

Map of California, courtesy of [California State Association of Counties](http://www.california.gov). The California Department of Food and Agriculture recently confirmed a case of Africanized honey bees in Modesto, Stanislaus County. hundred."

Modesto is only 68 miles from the state capital of Sacramento, but Mussen said area residents should not be worried. "They're not moving north that fast," Mussen said. It took the Africanized bees 37 years to reach California.

However, some individuals are highly sensitive to honey bee venom proteins and are subject to anaphylactic shock (allergic response) and can die from only one sting. Senior citizens with compromised cardio-pulmonary systems seem to be at a higher risk for bee sting-induced heart attacks, Mussen said. On the other hand, beekeepers who have been stung many times develop protective antibodies and can tolerate more stings than non-beekeepers.

Mussen recommends that anyone working or relaxing in areas known to be colonized by Africanized bees "take precautions" by avoiding nesting areas. If the bees or wasps start to sting, cover your face with a shirt as you run for a building, vehicle or other shelter, he said. You can also carry an Army surplus gnat/mosquito veil with you to

protect your face.

"Jumping into water will not help," Mussen said. "Africanized honey bees fly around and will sting when you come up to breathe."

The honey bees' pheromone, resembling the scent of a banana, sounds the alarm, alerting other bees to attack.

"Africanized honey bees are not something to be feared," Mussen said, "but they are to be respected."

Links:

[from the UC apiaries](#) (Eric Mussen's bimonthly newsletter)

[Bee Briefs](#) (by Eric Mussen)

[About Eric Mussen](#)

[California Department of Food and Agriculture: Africanized Honey Bees](#)

[U.S. Department of Agriculture: Africanized Honey Bees](#)

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