

Africanized Honey Bees in Oklahoma

History of the Africanized Honey Bee

South America

Africanized honey bees (AHB) were first imported to the Americas in 1956 by the prominent Brazilian geneticist, Warwick Kerr. He thought there was a good possibility that he could utilize African stock to produce a new breed of honey bees, which would be less defensive than the wild African bees but which would be more productive than European honey bees (EHB) in Brazil's tropical setting. Kerr was able to acquire 63 live queens from South African beekeepers. These were later taken to a quarantine area at an agricultural research station near Rio Claro, where 48 queens survived till the next year.

Through selective breeding with European drones, Kerr and his associates had produced a number of first generation hybrids. After several months of this activity, natural attrition had reduced their stock of Africanized honey bees to 29 which were maintained in hive boxes equipped with queen excluders. In October of 1957 (according to Kerr), a local beekeeper wandered by, noticed the queen excluders and removed them. In any case, as the story goes, the removal of the excluders accidentally released 26 Africanized honey bee queens with small swarms into the nearby forest. Kerr hoped the escaped bees would either perish in the wild or mate with European honey bees and eventually lose their African characteristics.

Within a few years, however, reports began arriving from surrounding areas of wild bees relentlessly attacking farm animals and even humans. Many poor Brazilian farmers suffered livestock losses, and, eventually, there were human fatalities as well. By the early 1960s, it was clear that a rapid expansion had occurred among feral bee colonies and that the Africanized honey bees were moving quickly into other parts of the country. While European honey bee swarms might disperse only a few miles and then look for an ideal place to establish themselves, swarms of Africanized honey bees can move 60 miles or more at a time and build their nests in a variety of locations. By the 1980s, they had reached Mexico.

United States

On October 15, 1990, the first natural colony of Africanized honey bees was found in the United States, near Hidalgo, Texas. By 1993, natural occurring swarms were recovered in Arizona and New Mexico and the following year California confirmed arrival of this invasive species. Today, over 100 counties in Texas, 10 counties in New Mexico, 14 counties in Arizona, 3 counties in Nevada, and more than 10 counties in California are infested with AHB.

Oklahoma

During the second week of August, 2004, two samples of honey bees from Tillman County were sent to the Plant Disease and Insect Diagnostic laboratory for testing. One of these bee colonies was involved in a serious stinging incident when a work crew cut through the limb of a storm-damaged tree in the southwest Oklahoma community of Tipton. Seven members of the work crew were treated at a local hospital. Using a new "Rapid Polymerase Chain Reaction (PCR)-Based Assay", both samples were preliminarily identified as Africanized honey bees. Additional samples from the same colony were sent to the USDA-ARS bee identification laboratory at the

Carl Hayden Bee Research Center in Tucson, Arizona for confirmation. The USDA Carl Hayden laboratory has since confirmed both samples as AHB. Additional locations have since tested PCR positive for AHB since the first state report (see map below).

AHB vs. EHB

Africanized honey bees (*Apis mellifera scutellata*) and European honey bees (*Apis m. mellifera*) are the same species - they look the same, sting in defense of themselves or their nest, can only sting once, and have the same venom. Africanized honey bees are slightly smaller (but because the bees look so much alike only a laboratory analysis can tell them apart). They also differ in that they respond more quickly and more bees sting, can sense a threat from people or animals 50 feet or more from their nest, sense vibrations from power equipment 100 feet or more from their nest, may pursue a victim 1/4 to 1/2 mile, remain agitated for an hour or more after an attack, swarm frequently to establish new nests, nest in smaller cavities and sheltered areas, and move their entire colony readily (abscond) if food is scarce. Away from the hive, however, they are no more defensive than other bees or wasps. They will not form large swarms and hunt for you.

How can I prepare?

When involved in outdoor activities, be aware of your surroundings and keep an eye out for bees. Don't panic at the sight of a few bees foraging in the flowers. Bees are generally very docile as they go about their work. Unless you do something out of the ordinary, such as step on them, they will generally not bother you.

There are a few things you can do to be prepared.

- Wear light-colored clothing. Experience has shown that bees tend to attack dark objects such as clothing or hair.
- Avoid wearing floral or citrus aftershaves or perfumes when hiking. Bees are sensitive to odors, both pleasant and unpleasant. The smell of newly cut grass has been shown to rile honey bees.
- Check around your house and yard at least once a month to see if there are any signs of bees taking up residence. Africanized honey bees will live about anywhere they can find shelter. This means they are more likely to be found in trees, in the sides of buildings, in drain pipes, in water meter boxes, in old abandoned appliances, in piles of junk, and even in holes in the ground. Sealing or covering cracks and holes in houses is good prevention.
- Don't panic if you find an established honey bee colony in your neighborhood. Keep every one away. Check the Yellow Pages for pest control operators, beekeepers or other bee removal experts in your area who will remove the colony. Do not try to remove colonies yourself.

What if I am attacked?

The best safety advice is to avoid any encounters with unfriendly honey bees. Be alert for danger especially if bees are acting strangely. Remember that honey bees sting to defend their colony, so be on the look out for honey bee swarms and colonies. Quite often bees will display some preliminary defensive behavior before going into a full-fledged attack. They may fly at your face or buzz around over your head. These warning signs should be heeded, since the bees may be

telling you that you have come into their area and are too close to their colony for comfort both theirs and yours!

Most people taking part in normal outdoor activities do not have to go to any extraordinary lengths to be prepared, just keep in mind where you would go to escape honey bees, and be on the look out for danger. In the event you are attacked by honey bees here are a few good tips.

- RUN away as fast as possible! Do not try to retrieve your belongings and do not try to stand still in an attempt to fool the bees. The more you flail your arms, the madder they will get. Get indoors or in a car as fast as possible. If you can't get indoors, keep running. A bee can obtain speeds of from 12 to 15 miles per hour, but most healthy humans can outrun them. They will usually follow you for several hundred feet but Africanized honey bees have been known to follow people for more than a quarter mile.
- Almost all cases of Africanized honey bee attacks can be traced back to some provocation, such as some noise or vibration, i.e. a lawn mower, weed eater, or tractor.
- Any covering for your body, and especially for your head and face will help you escape. People who have been attacked say the worst part is having the bees sting your face and eyes. Any impairment of your vision will also make it more difficult to escape. If you do not happen to have a net with you, grab a blanket, a coat, a towel, anything that will give you momentary relief while you look for an avenue of escape. The covering device is not going to protect you for long. The idea is to use it to help you get away. If you have nothing else, pull your shirt up over your face. The stings you may get on your chest and abdomen are far less serious than those to the facial area.
- DO NOT JUMP INTO WATER! The bees will wait for you to come up for air.
- Once you are away from the bees, take a second and evaluate the situation. If you are stung by one Africanized honey bee, it will be the same as a sting from the common European honey bee. The individual stings are not more powerful or painful. Even one honey bee sting can be dangerous, however, if you are allergic to them. After you are safely away, remove all stingers from your body. Do not pull them out with tweezers or your fingers, as this will only squeeze more venom into the wound. Scrape them out sideways using your fingernails, the edge of a credit card, or with a dull knife. If you have been stung more than 15 times, are having symptoms other than pain and localized swelling, you should always seek medical attention immediately.

How do I collect a sample for identification?

YOU DON'T!! Because of the defensive nature of AHB (or honey bees in general) it takes specialized equipment to safely collect a sample. You can report suspect bee colonies to your local County Extension office and they may be able to determine if it is a wild swarm or possibly some other type of stinging insect. The Oklahoma Department of Agriculture, Food, and Forestry has established an Africanized honey bee task force to handle any bee collecting and eradication. Please call Garry Phillips at (405) 205-2699 to report any defensive bee swarms.