

# Frequently Asked Questions about the Africanized Honey Bee in Florida<sup>1</sup>

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## What is the difference between African and European honey bees?

All honey bees in the United States belong to the genus *Apis*. The most familiar honey bee to Americans is the western honey bee, *Apis mellifera*. There are numerous subspecies of *A. mellifera*, but the exact number of subspecies is highly debated. Generally there are around 25–30 recognized subspecies of western honey bee that are native to Europe, Western Asia, and Africa. The European honey bees in North America are a mixture of five European subspecies imported to the Americas over the past four centuries. The African honey bee, *Apis mellifera scutellata*, was introduced into South America from the central and southern part of Africa in 1957. Since its introduction into South America, the African bee has migrated into the southwestern United States and Florida. *Apis mellifera scutellata* is the African bee subspecies referred to in this document.

## Why do we use the term “Africanized?”

Hybridization is the mating of queens and drones from different subspecies. This can occur between any subspecies of honey bee because they are of the same species. African and European honey bees hybridize in regions where both subspecies are present. The term “Africanized” generally

is applied to any progeny resulting from matings between European and African bees. The acronym “AHB” is now a commonly used, practical identification term. While populations of African bees (with little to no European hybridization) have become established in the American tropics, much of the original African genetics have been diluted with European genetics in the United States. This hybridization mostly is due to the climate, the expansive beekeeping industry, and the vast populations of European honey bees present. African bee x European bee hybrids present an unpredictable combination of both European and African behavioral traits, and this unpredictability warrants the understanding of the true African bee and their behavior.

## What is the difference between African and Africanized bees?

Technically, African refers to the pure race of bees that live in Africa. Africanized refers to the hybrid that results from African and European bees mating. The terms are often (though not always correctly) used interchangeably. Feral bees in central and south Florida have a high chance of having African genetics, but this can only be confirmed through laboratory testing.

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## Is the African bee the same as the killer bee?

“Killer bee” is the name given to the African bee by the media and Hollywood. The sting of an African bee actually contains slightly less venom than that of a European bee because African bees are slightly smaller. However, African bees have heightened defensive characteristics, leading to stings from more individual bees. Disturbed colonies of bees have caused both human and animal fatalities in the United States. Fatalities from honey bee stings can occur for one of two reasons: 1) The victim was allergic and the bee venom caused anaphylactic shock or respiratory distress, or 2) The victim suffered from toxic envenomation, which is received from about 10 or more stings per pound of body weight (for a 150-pound person, this would equal receiving 1500 individual stings).

## Is it possible to tell an African honey bee from a regular or European honey bee by looking at it?

No. African honey bees are slightly (approximately 10 percent) smaller than European honey bees. However, this size difference is very subtle, and it is nearly impossible to differentiate between the two without specific measurements and/or laboratory testing. The Florida Department of Agriculture and Consumer Services uses a morphometric test called FABIS (Fast African Bee Identification System) to identify African bees in their laboratory. Samples they test are usually sent in from feral colonies that have been eradicated from throughout the southeastern United States. If a bee’s identity remains questionable after FABIS testing, FDACS will use a more comprehensive morphometric test, USDA-ID (Universal System for the Detection of African honey bees), to confirm the colony’s identity.



Figure 1. An Africanized honey bee (left) and a European honey bee on honeycomb. Despite color differences between these two individuals, mostly they can’t be identified by eye.

Credits: Scott Bauer, USDA-ARS

## Do African honey bees produce honey?

Yes. African honey bees are honey bees and do produce honey. However, they are not easily managed in Florida because of their defensive characteristics. Because AHBs evolved in an area with constant resource availability, they do not have the EHBs’ drive to store large reserves of honey. Instead, AHB colonies focus on producing brood and swarms.

## Is it true that African bees are wild bees and can never be managed by beekeepers?

No. In South and Central America and Southern Africa African bees are managed by beekeepers. However, African bees’ extreme defensive behavior poses a problem in Florida because most bee yards are in close proximity to humans. In regions where African bees are managed, apiaries are established in remote locations where they are not likely to be disturbed by humans. Additionally, it is illegal for Florida beekeepers to knowingly keep African honey bees.

## Do African bees hunt people down and kill them?

No, the only things they hunt (forage) are pollen and nectar from flowering plants, propolis (tree resins), and water. Typically, foraging bees are not defensive and should be of no concern to the passerby. However, if a honey bee colony is disturbed, the bees will defend their nest. One should never disturb any swarm or colony of bees.

## What exactly is a swarm of bees?

Most people use the term “swarming” to refer to bee activity or just bees flying around. However, this is not the correct use of the word. Swarming is honey bee reproduction at the colony level. When a colony swarms, the queen leaves the colony along with about 60 percent of the bees while the remaining colony members produce a new queen. The cluster of bees (congregation or swarm) that left the colony begins a search for new nesting sites. Swarming is actually the cluster moving from its previous colony to a holding area until the bees find a home. Bees in swarms are generally docile and not defensive because they do not yet have a nest to protect.

## **If I swat at a bee, will it go away?**

Swatting is not a good idea because it will agitate the bee and make it more likely to sting. Also, if the bee's body is crushed by swatting, it produces an odor (or pheromone) that incites other bees to attack the possible culprit.

## **How many times can the African honey bee sting?**

All female worker honey bees can only sting once. A portion of the bee's abdomen remains with the stinger when she flies away, and she dies soon afterward. The male honey bees (drones) cannot sting. The concern with honey bee stings is that multiple bees can be sent in defense of a colony that has been disturbed.

## **What should I do if I see a swarm or colony of bees?**

First, do not disturb the bees. Swarms are usually docile while they're looking for a new nesting site, but it's always possible the swarm has found a site and the bees you see on the surface are concealing other bees actively constructing honeycomb and establishing a new home. An untrained individual should never disturb a colony of bees. Property owners may choose to have a swarm or colony removed (live) by a beekeeper who is registered by the state of Florida or they may contact a pest control operator (PCO) to perform eradication or removal.

## **What is a pest control operator?**

A pest control operator (PCO) is a licensed individual who may work for a pest control company; many, though not all, PCOs offer bee removal services. Certified PCOs are the only people permitted by Florida law to apply pesticides to eradicate honey bees.

## **There's a beekeeper near my property/house; how do I know he or she does not have African bees?**

All beekeepers in the state of Florida must register with the Florida Department of Agriculture and Consumer Services (FDACS). They must also follow Best Management Practices (BMPs) for maintaining European honey bees. These guidelines help ensure bees in managed bee yards remain European. If the beekeeper is following the BMPs, then he or she is not keeping African bees. If the BMPs are not being followed, there is no way to be sure. If you know

a beekeeper, encourage him or her to comply with the BMPs. Also, registered beekeepers have their hives checked annually by state apiary inspectors. Defensive colonies are recommended to be re-queened to ensure that the bees are European.

## **For More Information**

For further information, visit the AFBEE Program website at [www.AFBEE.com](http://www.AFBEE.com), visit the Solutions For Your Life website at <http://solutionsforyourlife.ufl.edu>, or contact your local UF/IFAS Extension agent.