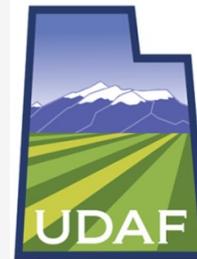




AFRICANIZED HONEY BEES

Training for First Responders



Presented by the
Utah Department
of Agriculture and
Food

History of the Africanized Honey Bee (AHB)

- Honey bees native to Africa were introduced to South America in 1956 as part of an experiment to improve honey production.
- In 1957, the bees were accidentally released into the wild in Brazil.
- The African honey bees began breeding with European honey bees (EHB), resulting in hybridized offspring called the Africanized honey bee (AHB).
- Hybridized or Africanized honey bees were detected in Texas in 1990.
- In 2008, Africanized bees were discovered for the first time in Utah. Genetic testing confirmed their presence in Iron, Kane, San Juan, and Washington counties.





Scott Bauer USDA/ARS

An Africanized honey bee (left) and a European honey bee (right).

Despite the color difference, they are difficult to distinguish without genetic testing.

Biology of the AHB

The AHB and the EHB belong to the same species. However, Africanized offspring are difficult to distinguish.

AHB colonies produce more drones and therefore grow faster than EHB colonies.

Just like the EHB, the AHB leaves a barbed sting. Therefore a single bee can only attack once.

The sting of a AHB is no more venomous (or painful) than that of a European bee sting.

AHB Behavior



David J. Moorhead University of Georgia

Africanized bees are much more aggressive than their European counterparts.

- AHB will swarm 10 or more times per year, which is far more frequent than EHB.
- Bees are generally docile when swarming, but caution should still be practiced when approaching.
- Colonies allocate far more bees for defense than compared to European bees. This is a big reason why they are so dangerous.
- AHB will send up to 100 x more “guard” bees out to attack a potential threat compared to EHB.

Protection Below the Neck

- Bee suits are preferable, but if they are unavailable, baggy long pants and a loose-fitting long-sleeved shirts, made of thick material can substitute.
- Do not wear dark colors—this antagonizes the bees. If police uniforms are dark, put lighter colored clothes over the uniform.
- Boots should come over the ankle and the cuff of the pants should come over the boot and be sealed off with tape or elastics
- Wear thick plastic or rubber gloves and secure sleeve cuffs with rubber bands or tape
- Conventional heavy turnout gear worn by firefighters are usually sufficient to protect every part of the body except the head and neck.

Protecting Your Head and Neck

- A veil should be worn at all times when interacting with bees. It protects from potentially painful stings to the eyes, nose, and ears.
- Helmets are useful to protect the head and support folding and round veils.
- If no helmet is used, use an Alexander type of veil.
- Make sure the veil is secured tightly against other clothing and there are no points of entry for bees.

Step 1: Assess the Situation

Assess the situation from within the emergency response vehicle first. Attempt to determine following:



- Are there victims currently under attack
- Are there victims that are unconscious
- Have victims been stung multiple times
- How many people are in danger (including emergency personnel)
- Are pets involved

Step 2: Seek Additional Help

Once the situation has been evaluated, you may need to:

- Call secondary responders
- Call for additional ambulance assistance
- Notify the receiving hospital
- Call for a government apiarist or pest control operator for bee removal if the colony is not easily accessible (determine who will be called prior to emergency)



Step 3: Prepare to Enter Site

Once personnel is ready to take actions, take the following steps:



- Retreat to a safe distance
- Put on Personal Protective Equipment
- Isolate and evacuate areas where bees are present
- Keep the public 150 feet away from incident

Step 4: Neutralize the Insect Attackers

While each emergency situation is different, generally there are two main priorities in a bee attack:

- *Establish an effective insect barrier*
- *Neutralize the insects' alarm odor*

Fire and rescue units can accomplish both objectives quickly with standard fire equipment that sprays water mixed with a non-toxic wetting agent.



NEVER SQUASH OR CRUSH BEES!

This will attract more bees to the site of attack

Neutralization Approach

AHB can be killed quickly with an aqueous film-foam (AFFF) system or with a simple solution of liquid dishwashing detergent mixed with water.

- Use a nozzle capable of delivering a wide fan pattern.
- A quick attack 1 ½ hose line must be pulled and hooked to the apparatus AFFF foam system.
- The 1 ½ hose line must be pumped at 80-100 psi at 95 gpm.
- The hose line must be pulled by the firefighters at a quick pace toward the victim, with a full fog pattern on the nozzle -- sweeping the air surrounding the firefighters and the victim.
- A light initial application to the victim will stop most of the bees from attacking on or near the victim in about 60 seconds.
- The victim should be picked up quickly while firefighters continue to sweep the surrounding air with the AFFF foam line.
- Foam should continue to be sprayed into the air and on the firefighters and the victim until all are in the "safe zone."

Tested Chemicals

Most wetting agents should be equally effective, however the following chemicals have been tested and proven to work:



- 9-55 R Fire Control Chemical
- Silv-ex R Foam Concentrate
- FC-600 Light Water brand ATC/AFFF
- Palmolive Dishwashing Liquid

A **one to three percent** solution of any of these chemicals will result in death or immobilization of AHB within 60 seconds of spraying.

Step 5: Victim Transport and Aid

- Once victims are evacuated, scan the area surrounding emergency vehicles for live bees.
- If a small number of bees are in the emergency vehicle, lower windows while driving so that the insects can escape.
- Once the victim is secured in the emergency vehicle, follow established protocol.



Other First-Aid Information

- REMOVE STINGERS CAREFULLY!
- Do not pull stingers out by the end, this may result in more venom being injected into the victim.
- Carefully use a credit card, dull knife, or other flat piece of material to scrape the stinger off of the body.
- Watch victims for signs of shock or allergic reactions
- Anyone stung 15 or more times should receive medical care.

Take Home Message



- AHB are more aggressive than EHB.
- Since AHB are difficult to distinguish from EHB, it is always best to assume any bee is Africanized.
- Attacks by AHB can be effectively managed with proper preparation and training.
- Visit the UDAF website for more information about AHB: ag.utah.gov

**This presentation was based on information
from the following sources:**

“What emergency responders need to know about Africanized honeybees” Kansas Department of Agriculture AFB Emergency Planning Guide (March 2007)

Hogson, E.W., Stanley, C.A., Roe, A.H., Downey, D. “Africanized Honey Bees” Utah PESTS Fact Sheet (November 2010). Utah State University.

Phibbs, A. “Responding to Emergencies Involving Bees” (Undated) Wisconsin Department of Agriculture, Trade and Consumer Protection.