

Zika Vector Control

A Guide for Florida Beekeepers

Understanding the Zika Vector

Two mosquito species in Florida are potential vectors of the Zika virus: *Aedes aegypti* and *Aedes albopictus*. These species prefer to live and breed in urban settings. They can breed in artificial or natural water-holding containers as small as a bottle cap. Tires, plant trivets, gutters, bromeliads and tree holes are favorite breeding places. They can live indoors, are most active during the day, and prefer to feed on humans. These species have a short flight range (approximately 150 meters) suggesting that if present on a property, that property or a neighboring one bred them. Although adulticides and larvicides have a role in controlling these mosquitoes, covering, draining or regularly flushing water containers around residential areas will greatly reduce populations of these mosquitoes. Therefore, the Department is recommending a multi-pronged approach for control. This approach includes property owner education on how to eliminate breeding habitat, targeted use of adulticides, and application of larvicides to breeding sites that cannot be drained. However, many mosquito control programs will still need to address other species that may require wider-area mosquito control by truck or aircraft.



Ae. aegypti and *Ae. albopictus*. University of Florida, Florida Medical Entomology Laboratory.

Eliminating Breeding Habitats

These species do not fly far from the location where they hatch. By covering, draining or regularly flushing water-holding containers around your home and bee yard, you can greatly reduce populations of these mosquitoes. Eliminating breeding habitats on your property can reduce adult populations and therefore reduce the need for chemical control for mosquitoes that could vector Zika at your hive location. Take these steps to eliminate standing water :

1. Every 3-5 days, flush and scrub any water-holding container that is left for bee hydration.
2. Bird baths, barbecue grills, ash trays, bottle caps, pet bowls and other small containers that can hold water can produce mosquitoes. Drain, flush, cover or remove them.
3. Boats on trailers, dry docked or unused will collect water and breed mosquitoes. Cover them with a tarp and secure it tightly to prevent pooling.
4. Tires that are left outside are a favorite breeding site for these species. Drain, discard or move tires indoors.
5. Trash, spare parts, or other yard clutter that can accumulate water should be discarded or moved indoors.
6. Natural water-holding containers can be modified to reduce survivorship of mosquitoes by taking the following approaches:
 - Tree holes – fill with sand or soil.
 - Bromeliads – flush and scrub with water every 3-5 days.
 - Leaf litter holding water – collect litter or disturb litter to allow for drainage.

Contacting Mosquito Control

1. Establish a relationship with your local mosquito control program and let them know the location of your hives. Request notification prior to applications in your area.
2. Identify a location for transportation of your hives in case of emergency.
3. Place hives no closer than 300 feet from roadways where ground and truck operations may occur.
4. Be sure to place a sign nearby with up-to-date contact information.
5. Be aware of wind conditions near your apiary. Place hives so that the entrance faces downwind or behind a windbreak.
6. If you have further questions about standing water, ask your mosquito control program for more information about reducing mosquito breeding sites at your hive location. These efforts reduce the risk of mosquito infestation and can therefore reduce the need for chemical control for mosquitoes that could vector Zika.

Find the contact information for your local mosquito control program by visiting: www.freshfromflorida.com and search for "mosquito directory"

For more information about bee protection visit floridabee.org

