



Mosquitoes



Asian tiger Mosquito Adult



Asian tiger Mosquito Larva



FL St. Louis Encephalitis Adult

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Editors: Dr. Faith Oi and Dr. Rebecca Baldwin

As the sun began to set on a day full of accomplishing some much needed yard work this weekend, we were annoyed at the familiar high-pitched hum that only comes from, you guessed it, mosquitoes. Florida is home to at least 76 species of mosquitoes. Besides being an annoyance, there are attributes of mosquitoes you may not be aware of.

Mosquito Biology

Mosquitoes are small flies in the order Diptera. Flies have two wings, and mosquitoes can be easily recognized by their scale-covered wing veins. They have a complete life cycle, spending the larval and pupal stages in water.

Of the blood-sucking mosquitoes, a blood meal is only required by the female so she can produce an egg mass. The male mosquito feeds on nectar and plant juices. The female will lay eggs in a wet environment. Mosquitoes may lay between 100-200 eggs per batch, and can produce a new batch every 7-10 days. In warm conditions, it only takes a few days for the eggs to hatch.

The hatchlings are known as mosquito larvae or wigglers. You may have seen these worm-like creatures wriggling about in a birdbath or in a bucket of water. The larvae prefer quiet, still water and will wriggle when disturbed. They feed on decaying organic matter in the water including microorganisms. While feeding and growing, the larvae will undergo four molts in a 7-10 day period before entering the non-feeding pupal stage. After 2-3 days, the pupae will molt into the winged adult. During warm summer months, the adult, female mosquito will generally live about 2 weeks. Males have a shorter lifespan.

Mosquito Control and Mosquito-borne Disease Prevention

The first step in controlling mosquitoes in and around urban environments is to eliminate the breeding sources. Mosquitoes need water to lay their eggs, so containers that hold water, such as toys, birdbaths, and pet dishes, should be removed or emptied regularly. Remember, it only takes about 10 days for mosquitoes to become adults, so these containers should be drained weekly.

Mosquito Control Continued

The second step is exclusion. Make sure that doors close properly and that all windows have proper screening. The third step is avoidance. Avoid being outside right after daybreak, and then again at dusk. These are times of peak mosquito activity. Wear protective clothing such as long sleeves and long pants. You also may consider wearing a mosquito repellent.

For more information on mosquito repellents, please visit: <http://edis.ifas.ufl.edu/pdf/IN/IN41900.pdf>

Lastly, a physical or chemical control may be necessary. There is a lot of information out there about consumer model mosquito traps.

For more information on mosquito control devices, please visit: <http://edis.ifas.ufl.edu/pdf/IN/IN17100.pdf>

There are also many options for chemical control if that becomes necessary.

For more information on chemical controls for mosquito adults and larvae, please visit: <http://edis.ifas.ufl.edu/pdf/IN/IN47300.pdf>

Mystery of the Month

Are all mosquitoes bad?



Toxorhynchites larva

Many mosquitoes are blood feeders and may spread diseases like Malaria, Yellow Fever, Encephalomyelitis, and dog heartworm. You may not be aware that not all mosquitoes are blood feeders. In fact, one mosquito genus, *Toxorhynchites*, may be used as a bio-control. The large *Toxorhynchites* larvae eat the larvae of other mosquito species. As adults, these mosquitoes feed only on nectar and plant juices.

For more information about IPM in schools, or to view past issues of the Pest Press, please visit <http://schoolipm.ifas.ufl.edu>

Activity

Do you have an aquatic environment near your school? If so, you have a lesson waiting to be tapped.

Materials:

- Dipper – plastic cup and dowel rod
- Observation Pan – dish pan, or baking dish
- Log book, Internet

Attach a deli or yogurt cup to a dowel rod. From different depths, and habitats (grassy, clear, woody, etc.) collect several dips of water. Also grab some of the weeds if you can reach them. (As always, beware of snakes.)

Observe life in action! You will likely have both predators and prey in your sample that you can observe. Are you able to identify mosquito larvae in your collection? How about dragonfly larvae or minnows? (They both eat mosquito larvae.) Have the students observe the collection and behaviors of the organisms. Then have them research what they have found. Be creative. One activity may be to have them create a food chain from the critters found in their sample. If you have a microscope handy, there is a whole other dimension that can be added. Have fun!

Florida Integrated Pest Management News.



Thank you to all who helped to prepare the Florida School IPM team for the National IPM Symposium. The meeting provided a forum for us to share ideas about IPM in schools. We are motivated to continue the Florida School IPM expansion across the state. Brevard and Manatee County Schools continue to introduce their IPM training into all their schools and Sarasota and Duval counties will be beginning soon.

For further information about:

- **BPS IPM program**, contact: **Earl Lewallen**, IPM Coordinator 321-617-7748
- **Manatee School District IPM program**, contact **Dan Lisenko**, Grounds and Maintenance Manager 941-708-8822.