

- For short-term relief in outdoor areas such as patios and picnic areas, use citronella candles or punks as a deterrent.
- Protect your pets with drugs that eliminate heartworm.

### Treat larval breeding sites

- Use mosquito fish or other fish species in permanent bodies of water whenever the water will support them. Mosquito fish can be found in other ponds, pet shops or bait stores.
- Use *Bacillus thuringiensis israeliensis* products such as Mosquito Dunks® to treat permanent water bodies to eliminate larvae.
- You can use oil treatments on the surface of standing water to kill larvae. Use commercial products according to the instructions on the product label. Be aware that other organisms in the water body may be affected by the treatment.

### Long-term control

To achieve effective long-term mosquito control, you need to use several management techniques. Mosquito control is often complex and expensive, requiring the cooperation of individual homeowners as well as such groups as state agencies, local governmental agencies, industry and agriculture.

Mosquito control personnel may be needed on a permanent basis, and communities may wish to consider taking an areawide approach. Sometimes areawide programs are the only solution to a mosquito problem.

The Texas Department of Health in Austin can provide information on how to establish a mosquito control



district, which is a local group that handles areawide mosquito management. The Texas Animal Health Commission tracks diseases of animals and knows the current situation of mosquito-borne animal diseases in Texas.




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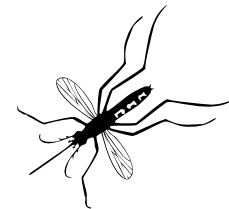
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For more information on insect management, visit the Web site at: <http://insects.tamu.edu>

# Mosquito Control Around the Home

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**M**osquitoes not only irritate and annoy people, but they also can transmit many disease-causing organisms to humans and animals. They spread such diseases as encephalitis, dengue, yellow fever, malaria and filariasis. Mosquitoes are also responsible for transmitting heartworm in dogs.



To control mosquitoes effectively around the home, it helps to know about their life cycle. There are different control strategies for different life-cycle stages.

Mosquitoes have four distinct stages during their life cycle: egg, larva, pupa and adult. They can complete this life cycle in as little as 8 to 10 days, depending on food availability, weather conditions and the species of mosquito.

**Egg stage:** Mosquito eggs may be laid individually or in clusters on the surface of water or individually in dry locations that are subject to periodic flooding. Some mosquito eggs can remain dormant in dry conditions for many months.

**Larva stage:** Mosquito eggs hatch into larvae called wigglers, which are seldom more than 1/2 inch long. Wigglers have a small head, an enlarged thorax (center body section) and a long cylindrical abdomen. Wigglers live in the water. Most of them feed on microscopic plants, animals and organic debris suspended in the water.

**Pupal stage:** Mosquito pupae do not feed. They spend most of their time at the water surface and tend to move only when disturbed. They are sometimes called tumblers because of their tumbling motion in water when disturbed.



**Adult stage:** Unlike the other stages, adult mosquitoes live on land and are winged. The males feed only on nectar, plant juices and other sources of liquid carbohydrates. Female mosquitoes also feed periodically on nectar, plant sap and other sources of plant carbohydrates for energy.

However, females of most mosquito species require a blood meal as a source of protein before they produce eggs.

Adult mosquitoes typically live for about a week to a month, but this can vary, depending on a number of environmental factors. Some species spend the winter as mated females that may live up to 6 months or more.

Some adult mosquitoes seldom travel more than 200 yards from the breeding sites; other species can travel for more than a mile. This ability to travel long distances can create problems in management. If the source of the mosquito problem is far from your home, you may not be able to control them without cooperation from other individuals or groups.



## How to reduce mosquito problems

Here are some ways to alleviate mosquito problems around your home:

### Eliminate breeding sites for larvae

- Reduce standing water that provides breeding sites. Eliminate containers such as old tires, buckets, cans and bottles that collect and hold rainwater and become good breeding sites for mosquitoes. Drain water from flower pots, bird baths, rain gutters, rain barrels, birdbaths, pet dishes, livestock watering troughs, etc. at least once a week.

- Empty your plastic wading pool weekly and store it indoors when not in use.
- Fill holes or depressions in trees with sand or mortar, or drain them after each rain by drilling holes into the tree.
- Repair leaky pipes and outside faucets.

### Reduce adult mosquito populations

- Mow tall grass or reduce the amount of brush and other foliage in your area to reduce the resting sites for adult mosquitoes.
- For temporary relief in yards or high traffic areas, use fog treatments or surface treatments of insecticides that are labeled for that use and apply them following directions on the product label.

### Avoid contact with mosquitoes

- Use screening in your homes and pet kennels. Keep the screens in good repair and be sure that they seal around the frames of the door or window.
- Schedule outdoor activities during times when mosquitoes are not active. Mosquito species that are active at dusk and dawn can often be avoided. Species that bite throughout the day are more difficult to avoid.
- Wear long, loose-fitting clothing to avoid mosquito bites. Use head nets when mosquitoes are very abundant.
- Use repellents whenever in a mosquito infested location. Products that contain DEET have been shown to be the most reliable repellents.

