

Problem: Mosquitos



Description: Adult females lay eggs every third night during their life span in a raft of 100 to 300 eggs on the surface of standing water. Eggs hatch into larvae that feed on aquatic microorganisms. They must frequently come to the surface to breathe. The pupa is a non-feeding, but mobile stage from which an adult emerges. The length of time for the development from egg to adult varies depending on the water temperature and mosquito species. It can take from seven to 10 days, but sometimes up to several weeks. The adult life span is usually several weeks and depends on environmental conditions such as temperature and food supply. Adults have two wings and can fly, although most *Culex* species usually do not travel long distances. Both sexes feed on nectar to gain energy; only female mosquitoes bite and ingest blood, which is necessary for egg production. Females are attracted to the host by sensing carbon dioxide (CO₂) from breath and skin as well as host odor, temperature, color, and movement.

Mosquitos can carry West Nile Virus (WNV) but most mosquito bites do not lead to WNV.

Recommendations:

Personal protection

- When outdoors, apply insect repellent containing DEET (N,N-diethyl-meta-toluamide). The more DEET the repellent contains the longer, not better, it will protect you. However, the use of products containing more than 33 percent DEET is not recommended. Pay close attention to the product label, especially regarding use for children.
- Wear long-sleeved shirts and long pants treated with repellents containing DEET or permethrin. Keep in mind mosquitoes can bite through thin clothing. Do not apply permethrin directly on your skin.
- Avoid being outdoors at dusk and dawn, which are the periods when mosquitoes are most active.
- When outdoors, place netting over infant carriers.
- Mosquito traps based on release of CO₂ do not reduce the mosquito population to the point there is a noticeable decline in mosquito numbers.
- Traps based on ultrasound technology are not effective for reducing the nuisance level.
- Make sure that screens on doors and windows are tight and without holes.

Reducing mosquito breeding sites at home

The most effective method of controlling mosquito populations is targeting the larval stage and the sites where they can develop. Once mosquitoes become flying adults, control is more difficult and expensive.

- Eliminate artificial water-holding containers. If that is not possible, empty buckets, cans, bottles, used tires and other containers at least once a week.
- Clean birdbaths and water bowls for animals at least once a week.
- Fill or drain tree holes, stumps and puddles.
- Irrigate gardens and lawns carefully to prevent water standing for more than a few days.
- Check for water trapped in plastic covers on boats and swimming pools.
- Make sure rain gutters are clean and do not hold water.
- Stock garden ponds with mosquito-eating fish, such as minnows and goldfish.
- Aerate ponds and swimming pools.

Chemical Control

There are a number of products that have *Bacillus thuringiensis israelensis* (Bti) for control of larvae in standing water including Aquabac, Bactimos, Bti Briquets, Mosquito Dunks, Mosquito Bits, Teknar and Vectobac. Other products that can be used for control are listed in Reference #1 below.

References:

1. [Mosquitos and West Nile Virus](#), K-State Research & Extension Entomology Publication MF2571

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Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

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