

Protecting Yourself from Mosquitoes and Ticks

by Rita Pelczar

MOSQUITOES AND TICKS can turn a pleasant summer evening stroll into a mad race for cover. But these pests are more than a nuisance; they are known carriers of several serious illnesses including West Nile virus, malaria, dengue fever, Lyme disease, Rocky Mountain spotted fever, and ehrlichiosis. Anyone who spends time outside during the warm months—including gardeners—is at risk for a bite that could carry one or more of these diseases. Taking precautions to avoid, repel, and control these bloodthirsty pests can save you a lot of grief.

AVOIDING CONTACT

Since mosquitoes are most active at dusk and dawn, minimizing the time you spend outdoors during these hours will reduce the risk of getting bitten (for tips on avoiding bites, see “Mosquito and Tick Avoidance Strategies,” page 51).

Wearing long-sleeve shirts and long pants creates a barrier between the mosquito or tick and the skin of your arms and legs. To protect your face and neck, consider wearing a hat with bugproof netting like the ones from **Concealment Industries**. The netting stashes into a zipped pocket when it’s not needed.

If you are planning an outdoor activity in a limited area, a mosquito-repelling lantern called **ThermaCELL®** might be worth investigating. Its single butane cartridge heats a mat that releases the repellent allethrin. When tested by the U.S. Army and the Environmental Protection Agency (EPA), it provided 98 percent protection against mosquitoes and other biting insects in a 15-by-15-foot area for up to four hours.

PATROLLING THE ENVIRONMENT

Female mosquitoes lay their eggs—100 to 300 at a time—in water, and just a thimbleful is sufficient. For the eggs to develop, the water must remain stagnant for at least four days. You can reduce the number of mosquitoes in your yard simply by eliminating sources of standing water, from buckets and birdbaths to your dog’s water bowl and the saucers under potted plants.



Mosquito (*Aedes aegypti*)



Deer tick (*Ixodes scapularis*)

For water sources that you can’t dump—such as water gardens, gutters, and water troughs—you can use a mosquito larvicide such as **PreStrike® Mosquito Torpedo™**. Each treatment lasts up to 60 days. A biological option for treating standing water is **Mosquito Dunks**, produced by Rincon-Vitova Insectaries, Inc. These donut-shaped units, designed to float in water, contain a bacterium that kills mosquito larvae but will not harm fish, amphibians, and other animals.

Keeping lawns mowed, discouraging deer, and treating pets for ticks will help reduce tick infestations in the yard.

PRECAUTIONS FOR USING INSECT REPELLENTS

- Always follow the directions for use on the label.
- Apply only to exposed skin and/or clothing—not under clothing.
- Never apply on cuts or irritated skin.
- Don’t apply to eyes or mouth, and use sparingly around ears.
- Don’t spray directly on face; spray it on hands and then apply to face.
- Don’t allow children to handle the repellents. Apply on your hands and spread on child’s skin.
- Avoid applying to children’s hands; they often rub their mouth or eyes.
- Avoid heavy applications.
- After returning indoors, wash treated skin with soap and water.

A CHOICE OF REPELLENTS

According to research reviewed by the Center for Disease Control (CDC) repellents that contain DEET (N,N-diethyl-m-toluamide) or picaridin (KBR 3023) are the most effective for long-lasting protection. The higher the concentration of active ingredient, the longer it provides protection.

In recent years, however, concerns have been raised about the safety of DEET, particularly with children. According to the American Academy of Pediatrics Committee on Environmental Health, DEET is safe for children over two months of age when used according to directions. Be-

Resources

Center for Disease Control, “Insect Repellent Use and Safety” factsheet: www.cdc.gov/ncidod/dvbid/westnile/qa/insect_repellent.htm.
“Stop Ticks” factsheet: www.cdc.gov/Features/StopTicks.

Sources

All Terrain Products, www.allterrain.co.com.

BugBand, www.bugband.net.

Buggins Insect Repellent, www.buggspray.com.

Concealment Industries, www.concealmentindustries.com.

Effective Environmental Solutions, www.bugband.net.

Mumz Insect Repellent Garden Apparel, mumzgarden.com.

Rincon-Vitova Insectaries, www.rinconvitova.com.

Sloggers Garden Outfitters, www.sloggers.com.

ThermaCell, www.thermacell.com.

cause it can last for up to eight hours, it should not be combined with sunscreen, which needs to be applied with much greater frequency (see “Precautions for Using Insect Repellents,” page 50).

Another effective, long-lasting repellent is **Permethrin**, but it is intended to be applied only to clothing and gear, not directly to skin. Insect-repelling garden apparel is being introduced this year from garden gear outfitters, including **Sloggers** and **Mumz**. These products use the patent-pending **Buzz Off Insect Shield** technology that binds the fabric with permethrin. The hats, bandanas, shirts, pants, socks, and other outdoor apparel provide invisible, odorless protection from biting insects including mosquitoes and ticks. Many of the items provide sun protection as well.

MOSQUITO AND TICK AVOIDANCE STRATEGIES

By placing physical barriers between you and the pests and minimizing their breeding sites, you can reduce the likelihood of getting bitten.

- Stay indoors when mosquito activity is at its peak—the hours just before and after dawn and dusk.
- Wear clothing that covers your skin—long-sleeved shirts, long pants, and socks. Light-colored clothing makes it easier to spot ticks.
- Tuck pants into socks when walking in tick-infested areas.
- When hiking trails, stay toward the center to avoid brushing against vegetation.
- Keep grass mowed.
- Be sure that your window screens are in good repair.
- Empty all sources of standing water.
- Cover water barrels and cisterns with screens.
- Burn citronella candles to repel mosquitoes.
- After outdoor activities, check yourself, family members, and pets for ticks, and remove any tick you find with tweezers.
- Use repellents according to directions on the label.

BOTANICAL ALTERNATIVES

Several plant-based mosquito and tick repellents are available. The most effective, according to the CDC is oil of lemon eucalyptus, which has been shown to provide similar protection against mosquitoes as repellents with low concentrations of DEET. But like chemical repellents, it is important to follow label directions. Products containing oil of lemon eucalyptus, which include **OFF!® Botanicals™** insect repellent and **Repel Lemon Eucalyptus**, should not be used on children under three years of age.

Another plant-based repellent, geraniol, is extracted from geranium (*Pelargonium* spp.) oil. This is the active ingredient in **BugBand™ Wristbands**, which are designed to repel biting insects within 15 feet of the wearer. The same ingredient is used in **BugBand's Pump Spray** and **Towelettes**. **Buggins Insect Repellent** combines geraniol with peppermint, lemongrass, and clove oils. **Bite Blocker™**, which comes in separate formulations for children and for adults, uses geranium oil in combination with soybean, vanillin, and coconut oils.

All Terrain's **Herbal Armor™**, which was recently awarded the National

Home Gardening Club's Seal of Approval for effectiveness and consumer value, combines the oils of citronella, peppermint, cedar, lemongrass, geranium, and soybean for a repellent that can be used on skin or fabric and remains effective for four hours.

Researchers continue to seek effective, less toxic means of protecting people from mosquitoes and ticks. Last year, scientists with the Agricultural Research Service in Oxford, Mississippi, isolated two compounds from the American beautyberry (*Callicarpa americana*) that appear to repel both mosquitoes and ticks.

Beautyberry has long been used as a folk remedy for protecting both humans and animals from a variety of biting insects. The isolated compounds, callicarpinal and intermedeol, may provide options for developing new repellents.

Although mosquitoes and ticks are likely to continue to plague our summers, employing a combination of the strategies described above will help you protect yourself and your family from annoying bites and the potential spread of disease.



Rita Pelczar is a contributing editor with The American Gardener.