

“Itchy Chiggers”

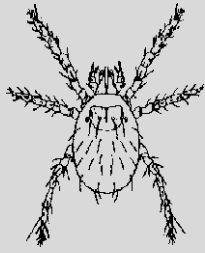
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I have vivid memories of chiggers from my childhood. I can still remember standing in the bathroom with my sisters counting chigger bites. It was almost a contest to see who got the most welts—our prize after a fishing or camping trip or exploration through the woods on the farm. “I’ve got 45 bites.” “I’ve got over 60.” Itchy . . . itchy . . . itchy!

Chiggers are the larval stage of the harvest mite. The adult harvest mite is easy to spot. You find them crawling on top of soil in the spring. They are a brilliant red and look like velvet. The adults are completely harmless—they don’t bite. The tiny larval stage is parasitic on many animals including rodents, birds, poultry, rabbits, livestock, snakes, toads and humans. You won’t be able to see the chigger with your naked eye.

Chiggers are found among weeds and thick vegetation where there is

moisture and shade. Parks, roadside ditches, tall grass areas, “fishing holes” and more are great locations to come in contact with chiggers. The tiny chigger moves quickly on the ground and crawls onto feet or legs. Once it is on your body, it moves until it finds a somewhat confined area. You can expect these bites around your socks, behind your knees, under belts, the crotch/waistline especially under elastic bands. Sometimes chiggers can get to your upper body and under your armpits.



Chigger (larval stage)

Chiggers become active in June and look for them to be a part of your Fourth of July activities. By mid-late-August, chiggers are becoming adults so they are less of a problem by late-summer to fall.

Chiggers do not burrow into the skin but pierce it. They inject a fluid that keeps the blood from clotting. This fluid causes the reaction you have to the bite. In the “old days,” my mom put clear fingernail polish on the welts to “kill the chigger.” Unfortunately, this did nothing more than make me smell like nail polish (the stinging of the polish did feel good on my itchy

bites). By the time the welt appears, the chigger is long gone. It has dropped to the ground, fully fed and ready to molt to the next stage. Today, we recommend that you avoid the nail polish and use over-the-counter lotions and ointments to get relief from the chigger bites.

It takes several hours for chiggers to settle down to bite. If you are in chigger-infested areas, showering or bathing soon after exposure can help wash chiggers off your body and prevent feeding. Make sure you wash your clothing so you don’t get reinfested.

If you are going out into chigger-infested areas, use an insect repellent containing “DEET” (diethyltoluamide). Put the repellent on your socks, shoes, pant cuffs, ankles, legs and around the waist.

If you would like more information on chiggers and their control around homes and landscape, call the extension at 441-7180 and request a free copy of the educational resource “Itchy Chiggers” (008-01). You can also find this information on our Web site at www.lancaster.unl.edu.

Environmental Focus



Mosquito Prevention and Control

The concern about West Nile Encephalitis, a mosquito-transmitted disease, has prompted many questions about mosquitoes and control. Reducing mosquitoes around your home can be challenging and require the cooperation of neighbors. Being good fliers, female mosquitoes can move several miles from an emergence site, but most mosquitoes will emerge in your neighborhood.

Prevention: To reduce mosquitoes around your property, eliminate mosquito breeding areas. Examine leaf-clogged gutters, bird baths, old tires, cans, bottles, children’s wading pools and anything else that might catch and hold rain. Drain water from these containers. Rinse the bird bath out weekly—during warm weather and optimal conditions, a generation of mosquitoes can be completed in less than a week.

Next, check window and door screens, making sure these are in good repair and tight. Screens should be 16-inch mesh or smaller. Keep porch lights off as much as possible in the evening or replace white bulbs with yellow ones that are less attractive to night-flying insects.

Bug-free barbecuing: Treat flower borders, smaller trees and shrubs around the patio with an insecticide several hours before your outdoor event. Mosquito foggers are reasonably effective (some

active ingredients contain permethrin, resmethrin, tetramethrin). Check the labels to verify uses on plants to avoid possible plant sensitivity and injury. A light trap (Mosquito Magnet) which generates carbon dioxide as a mosquito attractant, will help to reduce mosquitoes, but is quite expensive. This trap works because female mosquitoes are attracted to carbon dioxide given off by warm blooded animals, including humans.

Ponds: Ponds may be treated with *Bacillus thuringiensis israelensis* (Bti) available at some garden and hardware stores and suppliers. The brands, Bactimos and Vectobac, are available either as briquets or as granules. Once wetted, the active chemicals are gradually released from the formulated product and provide up to 30 days control of mosquito larvae. These products specifically attack mosquito larvae and will not harm fish or birds or wildlife that drink the water.

Working outdoors: Wear long-sleeved shirts and full-length trousers. Two layers of clothing are more difficult to penetrate by biting mosquitoes. If you spend a lot of time outside, buy a mosquito net at a sporting goods store and wear it over your hat or cap. You may elect to use DEET

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What’s the Scoop on Insect Repellents?

DEET. Right now, the most effective insect repellent on the market is still DEET, diethyltoluamide, a chemical developed in the 40’s for the U.S. Army. Products containing DEET have been available to the general public since 1957. Depending on the situation, DEET provides two to eight hours of protection. It has broad spectrum activity and is effective against mosquitoes, biting flies, midges, chiggers, fleas and ticks.

Millions of people have used DEET since it was developed and is generally considered safe when used properly. Make sure to use products made after 1993, because some earlier products contain an adhesive that has raised some concern.

For casual use, a product containing 10-30% DEET should be adequate. For children, it is best to be conservative and keep the concentration of DEET at 10% or less. In many situations, it may make sense to spray clothing, but be aware DEET can damage plastics, leather and synthetic fabrics like rayon.

High temperatures and humidity reduce the length of effectiveness. In such a situation, it may be necessary to apply the repellent more often or use a slightly stronger concentration.

Citronella. Derived from a lemon-scented grass and found in oils, sprays and candles,

citronella is a common ingredient in many repellents. Studies have shown citronella oil protects against most mosquito bites during the first 30-40 minutes after application, but its effectiveness diminishes quickly and is gone in two hours.

IR3535. This repellent (3-[N-butyl-N-acetyl]-aminopropionic acid) is the most recently marketed chemical repellent in the U.S. It is available exclusively through the Avon Corporation as Skin-So-Soft Bug Guard Plus IR3535. It is labeled for use against mosquitoes, ticks and biting flies. In some studies IR3535 provided protection for four to six hours, but another study performed at USDA laboratories found that 25% IR3535 was 10-100 times less effective than DEET.

Skin-So-Soft bath oil. Made by Avon, this oil has been shown in laboratory tests to have a minimal repellent effect. By comparison, 12.5% DEET provided protection from bites 10 times longer.

Soybean oil, Geranium oil and Coconut oil. These oils have been formulated into a product called *Blocker* which has been available in the U.S. since 1997. This “natural” repellent worked much better than citronella-based repellents. In some studies, Blocker provided complete protection against mosquito bites for several hours.

Future Repellents

Piperdine. The USDA Agricultural Research Service is looking at this molecule which has repellent properties and is found in trace amounts in black pepper. Advantage to piperdine-based repellents is they won’t dissolve plastics, such as sunglass lenses or auto paint.

Catnip. Researchers at Iowa State University have found nepetalactone, an essential aromatic oil in catnip, is about ten times more effective at repelling mosquitoes than DEET. A patent application for the use of catnip compounds as insect repellents was submitted last year by the Iowa State University Research Foundation. Don’t expect this to be commercially available anytime soon, as it has yet to be analyzed by the US-EPA or tested by human subjects.

Tomato. A North Carolina State University entomology researcher has reported a component of tomatoes, called IBI-246, has shown itself to be more effective than DEET and is safer. It repels mosquitoes, ticks, biting flies and even cockroaches. A company called Insect Biotechnology has purchased an exclusive license from NCSU to develop the product. It has been tested on humans with no adverse side effects, but it still has to be approved by the EPA before it can be marketed. (BPO)

Changes in the Nebraska Pesticide Act May Affect Termiticide Applications

During the 2002 session, the Nebraska legislature managed to pass LB 436 which was no small accomplishment considering the budgetary issues it had to deal with. This bill amends the Nebraska Pesticide Act, enforced by the Nebraska Department of Agriculture (NDA) since 1995. The Nebraska Pesticide Act regulates labeling, distribution, storage, transportation, use, application and disposal of pesticides in Nebraska.

One change may affect how some companies treat homes for termites using barrier treatments. In the past, some termite control companies have used low concentrations of termiticides—lower concentrations than are recommended on the label. Under Nebraska law, a treatment using insufficient chemical has not been illegal, but was probably not as effective as a treatment done at the proper application rate. To remedy this problem, LB 436 amended the Nebraska Pesticide Act so it will

be illegal to apply a post-construction termiticide at a concentration less than specified on the label for pre-construction treatments. To find out what the concentration is, ask the termite control company for a copy of the termiticide label and read it carefully for the concentration given for pre-construction treatments.

According to Tim Creger, NDA Pesticide Program Manager, “This change in the Nebraska law will take place July 20, 2002. This means the changes are technically effective and enforceable, but the NDA will be writing and proposing regulations to help them and the public understand exactly how these changes in the law will be implemented and administered. The hearing for the regulation changes will be scheduled for August or September.” Other changes to the Nebraska Pesticide Act by LB 436 can be found at the NDA Web site: <http://www.agr.state.ne.us/division/bpi/pes/pestchg2.htm> (BPO)