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Pest Check

What Is Making You Itch This Summer?

As we begin to be more active outdoors, we need to remember to protect ourselves from chiggers, which are small red mites. Chiggers develop through four lifestages: egg, larva, nymph and adult. Six-legged larvae hatch from eggs and climb up onto vegetation, so they can crawl onto a passing host. This is the only stage that feeds on humans and animals. Chigger larvae prefer to bite people in places where clothing fits tightly over the skin such as around the waistline, under socks, or where the skin is thin or creased such as around the ankles or the back of knees. Chigger larvae insert their mouthparts into a skin pore or hair follicle, and then inject a digestive fluid to dissolve skin cells. This results in itchy, reddish welts on the skin. After feeding, the larvae drop off of the host to molt into eight-legged nymphs which then molt into adults. Chigger nymphs and adults feed on eggs of springtails, isopods, and mosquitoes. Under favorable conditions, most chiggers complete their development from egg to adult in 40 to 70 days.

Suggestions for Prevention of Chigger Bites:

Avoid sitting on the ground when camping, picnicking, or working outdoors. Wear tightly woven socks, long pants, long sleeved shirts, and high shoes. Also tuck pant legs inside boots and button cuffs and collars as tightly as possible to prevent chiggers from climbing inside your clothes. Apply repellents such as DEET or permethrin to both the skin and clothing. Powdered sulfur is another repellent that can be dusted around the opening of your pants, socks, and boots or rubbed on skin such as over legs, arms and waist.

Suggestions for Relief After Exposure to Chiggers:

Wash clothes in hot, soapy water to kill chigger larvae. Take a hot bath or shower and soap repeatedly; creams or ointments such as hydrocortisone or calamine lotion can be applied to relieve itching temporarily.

Suggestions for Use of Insecticides:

Chiggers sometimes become a problem in home lawns, so chemical control may be needed. Insecticide sprays may provide some temporary reduction of chiggers and

they are effective when applied in areas where chiggers and their animal hosts are living and/or traveling. Insecticides containing carbaryl, permethrin, cyfluthrin are some suggestions for control.



Photo of chigger bites. Photo by Michael Merchant, Professor and Extension Entomologist, Texas A&M University.

Reminder for Safe Pesticide Practices

It is always important to remind ourselves of proper safety when mixing and applying pesticides. Always keep in mind that just because a chemical may seem like a safe material, when it is concentrated, it will not necessarily be safe or less toxic to humans or other animals! We must do our part to protect ourselves and our environment by **reading and following the pesticide label directions!**

Personal protection equipment depends on the job and the pesticide label, but some good suggestions are to wear a long sleeved shirt, long pants, waterproof gloves, a wide brimmed hat, waterproof boots, an approved respirator with the right cartridge when mixing dust or wettable powders and safety goggles when applying pesticides.

When mixing pesticides, weigh the material carefully, fill the tank with water until half full, and then add the concentrate while water is swirling. Remember to stand above the fill hole to prevent splashing onto face or eyes. After application, rinse the container three times and pour rinses into a mixing tank.

For pesticide application, wait until the pesticide needs to be applied, then **read the entire label**, and wear full coverage protection required by the label. **DO NOT** attempt to spray when there are heavy winds, if rainfall is impending or if you are feeling angry and frustrated. Also do not smoke, eat or drink while applying any pesticides.



Photo of proper safety equipment. Photo by: Bart Drees, Professor and Extension Entomologist, Texas A&M University.

Large Numbers of Bagworms Found on All Sorts of Hosts

Bagworms are usually first detected by observing the larval bags made up of bits and pieces of plant leaves and twigs that are woven together with silk. As the larvae grow and feed in the spring and summer, so do their bags. The bags can vary in length from $\frac{1}{4}$ to 2 inches in length. Many broadleaf and evergreen trees and shrubs can serve as hosts for bagworm species, including arborvitae and other ornamental conifers, cedar, cypress, elm, fruit and nut trees, juniper, oak, locust, maple, persimmon, pines, sycamore, willow and many other ornamental plants. Infested plants develop more bagworms each year since the female stage does not fly. When there are large populations, the larvae can defoliate plants. Heavy infestations over several years, especially when added to other environmental stresses, can lead to plant death.

Although bagworm species vary slightly in habits and life cycle, the bagworm usually spends the winter months in the egg stage within the bag produced by the female from the previous fall. Very small larvae spin strands of silk and are carried by the wind onto other plants, or larger larvae can crawl to adjacent plants. Full grown caterpillars pupate within their bags usually in the late summer.

Some Control Options:

Non- Chemical Control Options:

If only a few small trees or shrubs are infested, handpicking and destroying bags is recommended. During the winter months, the bags contain eggs and during the late spring and summer, the bags will contain a caterpillar.

Chemical Control Options:

When many small bagworms, less than ½ inches in length, then it is recommended to treat with an insecticidal spray such as those containing acephate, azadiractin, spinosad, *Bacillus thuringiensis* var. *kurstaki*, permethrin, or bifenthrin.



Close-up view of a bagworm. Photo by Dr. Keith Hansen, Texas AgriLife Extension Service.

A New Use for Bee Venom

According to Discover Magazine (Reference: Daniel A. Heller, George W. Pratt, Jingqing Zhang, Nitish Nair, Adam J. Hansborough, Ardemis A. Boghossian, Nigel F. Reuel, Paul W. Barone, and Michael S. Strano. *Peptide secondary structure modulates single-walled carbon nanotube fluorescence as a chaperone sensor for nitroaromatics.*), a new bomb detector may come from bee venom. A team of researchers from MIT have used fluorescent carbon nanotubes and venom proteins to bind to single molecules of explosives, such as TNT. This causes the tubes to change the wavelength they emit so they change color to become detectable. Right now, the color change is only visible with a specific microscope, so is still more work that needs to be completed before commercial applications are possible.

Mention of commercial products is for educational purposes only and does not represent endorsement by Texas AgriLife Extension or The Texas A&M University System. Insecticide label registrations are subject to change, and changes may have occurred since this publication was printed. The pesticide user is always responsible for applying products in accordance with label directions. Always read and carefully follow the instructions on the container label.