



## Chiggers<sup>1</sup>

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Chiggers (Figure 1) or "red bugs" are the larvae of mites belonging to the family Trombiculidae. In humans, chiggers can cause intense itching and small reddish welts on the skin. In other parts of the world, chiggers transmit scrub typhus; however, in Florida they are not known to transmit disease. The intense irritation and subsequent scratching may result in secondary infection.

### Biology

Adult chiggers usually overwinter in protected places and become active in the spring, although in Florida they may be active all year. The females lay eggs in a sheltered area. The eggs hatch into an ectoparasitic, six-legged larval form which is less than 1/50 inch long. The larva is the parasitic stage that feeds on humans and animals. The orange-yellow or light-red larval stage crawls on the soil surface until a suitable host is found. Suitable hosts range from small mammals to birds, reptiles, and amphibians. Humans are accidental hosts. Chiggers that attach to humans are usually dislodged or die within hours.



**Figure 1.** Chigger. Credits: Jerry F. Butler, University of Florida

The larvae suck fluids from the skin of the host animal and do not burrow under the skin. Usually within three days the larva is engorged. The larva then drops from the host to the ground and transforms into the nymphal stage.

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The nymph, like the adult mite, has eight legs. The bodies are usually hairy and about 1/20 inch long and bright red. The nymphs and adults feed on insect eggs, small insects, or other organisms.

The entire life cycle can require from two months to one year. As many as 1-5 generations may be produced per year depending on the temperature, moisture, and location.

### Chigger Bites

Chiggers attach themselves to the skin, hair follicles or pores by inserting their piercing mouthparts. When chiggers attach to humans, they are not usually noticed for some time. During feeding, they inject a fluid into the skin which dissolves tissue. Chiggers feed by sucking up the liquified tissues. The human immune reaction to a bite prevents the chigger from obtaining adequate nourishment. They rarely survive long enough to complete a meal.

Itching from chigger bites is usually noticed 4-8 hours after chiggers have attached or have been accidentally removed. The fluid injection causes welts to appear which may last for two weeks (Figure 2). Some people exhibit an allergic reaction to the fluid which may result in severe swelling, itching, and fever. People mistakenly believe that chiggers embed themselves in the skin or that the welts contain chiggers. Often scratching at the welt results in secondary infection.

Chiggers prefer to attach on parts of the body where clothing fits tightly or where the flesh is thin, tender, or wrinkled. For this reason, chiggers locate in such areas as the ankles, waistline, knees, or armpits.

### Preferred Habitat

Chiggers are most often found in low, damp areas where vegetation is heavy, although some species prefer dry areas. Chiggers seem to be most abundant in areas covered with shrubs and small trees where rodents are numerous. Chiggers occur in pockets or islands because a female will lay all her eggs in one spot; however, chiggers may persist in home lawns.



**Figure 2.** Chigger bites. Credits: Jerry F. Butler, University of Florida

### Control

Chiggers are easily removed from the skin by taking a hot bath or shower and lathering with soap several times. The bath will kill attached chiggers and others which are not attached. Since symptoms of contact may not appear for several hours, it is not always possible to completely prevent welts caused by chigger bites. Antiseptic should be applied to all welts which do appear. Temporary relief of itching may be achieved with nonprescription local anesthetics available at most drug stores. Studies have shown that meat tenderizer, rubbed into the welt, will alleviate itching.

If you are going into areas suspected of being infested with chiggers, wear protective clothing and use repellents (Table 1). Dusting sulfur is often used as a repellent. Repellents should be applied to legs, ankles, cuffs, waist, and sleeves by clothing application or directly to the body or clothing as directed by the label.

Chigger infestations may be eliminated by clearing brush from the area or closely mowing the area. Mowing removes the protective cover that chiggers need to survive. To locate infested areas, place a piece of black cardboard edgewise on the ground. If chiggers are present, they will climb to the top and congregate there. They will appear as tiny yellow or pink dots moving across cardboard. Before starting your survey for chiggers, use protective clothing and repellents.

Area control of chiggers is difficult to achieve, but insecticides approved for area control of chiggers are listed in Table 2. Apply these chemicals as directed on the label, and avoid getting insecticides into ponds and streams.

Also, attempt to exclude reptiles, amphibians, and small mammals that are preferred chigger hosts from the areas you will frequent. In some cases, fencing may be an option. Keep trash can lids secure to discourage unwanted wildlife from roaming your premises.

Chiggers sometimes invade structures. These infestations can be controlled with either surface or crack and crevice treatments of insecticides (Table 3) or space sprays (Table 4).

**Table 1.** Repellents labeled for chigger management.\*

Common Name	Homeowner Product*
Deet	Cutter (9.5%) Cutter (28.5%) Cutter (Family) (6.65%) Repel (23%) Repel Lotion (9.0%) Sportsman (29%) Ultrathon (23.75%)
Permethrin	Hot Shot (0.15%) <b>(clothes only)</b> Repel! (Permanone Insect Repellent) (0.5%) <b>(clothes only)</b>
*Read label carefully to insure pest, site and commodity are listed prior to applying product. Some product labels are very restrictive.	

**Table 2.** Chigger management products labeled for outdoor area treatment.\*

Common Name	Homeowner Products*	Commercial Products*
Bifenthrin	Ortho Lawn Insect Killer Granules	Talstar Termiticide/Insecticide
Cyfluthrin	Bayer Advanced Lawn & Garden Multi-Insect Killer Bayer Power Force Ant Killer Ready-to-Use Granules Bayer Power Force Multi-Insect Killer Ready-to-Spread Granules	
Deltamethrin		DeltaGard G
* Read label carefully to insure pest, site and commodity are listed prior to applying product. Some product labels are very restrictive.		

**Table 3.** Chigger management products labeled for indoor surface or crack and crevice treatment.\*

Common Name	Homeowner Products*	Commercial Products*
Pyrethrins		PT ULD BP-300
Pyrethrins and Others		PT Microcare CS Controlled Release Pyrethrum PT ULD BP-100
Pyrethrins, PBO		PT ULD BP-50
Tau-Fluvalinate		Yardex Supplemental Labeling
* Read label carefully to insure pest, site and commodity are listed prior to applying product. Some product labels are very restrictive.		

**Table 4.** Chigger management products labeled for indoor space treatment.\*

Common Name	Homeowner Products*	Commercial Products*
Pyrethrins		PT ULD BP-300
Pyrethrins, PBO		PT ULD BP-50
* Read label carefully to insure pest, site and commodity are listed prior to applying product. Some product labels are very restrictive.		