

# PESTS

## That Affect Human Health

# Chiggers

There are at least 46 species of chigger mites in Kansas. The hatching stage (larva) of all chiggers are parasitic on animals. Many species seem to have a narrow host range, e.g. on rodents, bats, or snakes, but nearly all human misery from chiggers in Kansas is caused by an indiscriminate species (*Eutrombicula alfreddugesi*) that normally parasitizes many species of rodents and other mammals, snakes, and birds.

### Biology

Chiggers overwinter as adults. Adults are brilliant red, about 1/20 inch long, and may be seen moving slowly about on the soil even on warm winter days. Egg laying begins when soil surface temperatures are regularly above 60°F, and “chigger season” is soon underway. After hatching, chigger larvae climb onto grass blades, twigs, or other objects from which they can more readily snag a passing host. After feeding for two to four days, the larvae drop from the host, undergo a molting process, and become nymphs. Nymphs and adults are not parasitic. They are predators on small insects, other mites and their eggs. A complete life cycle requires from 7 to 10 weeks, but from April to cold fall weather there are always some of the bothersome larvae around.

Plenty of moisture probably increases chigger survival. After a rainfall, chiggers and other insects and mites climb onto vegetation to avoid having to swim. From here they are well situated to climb onto victims' ankles. Frequent rains make the grass and weeds grow rapidly. Even if hot, dry weather chases chiggers off vegetation, good plant growth provides a shaded, moist microclimate near the soil for weeks. On any overcast or humid day, chiggers move back to plants hungrier than ever.

### Biting Larvae

It is the tiny six-legged larval stage chiggers that bite us, and they're only 1/160- to 1/120-inch long — barely visible to people with excellent eyesight. Chiggers do not suck blood, and they do not burrow into the skin.

Rather, they attach their mouth parts to the skin surface, often in a hair follicle or a pore, and secrete saliva that digests skin cells.

Chiggers usually do not produce much itching if they are on the body for less than an hour. But some people report itching within minutes of entering chigger-infested sites, although no bite marks are visible until later.

Itching begins three to six hours after the chigger starts biting. Redness and slight swelling occur around the bite. At 10 to 16 hours, red, “pimple-like” eruptions appear. Itching continues and intensifies for up to a day and a half.

Much of the itching is caused by histamines released from dissolved skin cells. The body's reaction to chigger saliva causes formation of a hardened tube (stylosome) in the skin, through which the chigger feeds. Some authorities attribute prolonged itching to the presence of the stylosome even after the chigger drops off or is removed. Bites may occur anywhere on the body, but they are most numerous where shoes or clothing fit tightly — ankles, backs of knees, crotch, waist, belt line, wrists, and armpits.

Individuals react in varying degrees. For most people, flea and chigger bite reactions are similar as are the way bites are distributed on the body. Diagnosis relies on circumstances of exposure. Somewhat similar eruptions may occur from the bites of straw itch mites, rat mites, and fowl mites, but the distribution on the victim's body usually is different. Regardless of the cause, the same principles apply in treating bites to relieve itching. Avoiding future exposure or controlling the infestation requires identification of the cause.

### Personal Protection

When possible, avoid areas of tall grass or weeds where little sunlight penetrates to the soil. Such areas harbor the most chiggers. Avoid sitting or lying in such areas or in shaded areas even with short grass or thatch.

Although chigger larvae can penetrate many types of clothing, high boots and trousers of tightly woven fabric, tucked into stockings or boots, help deter them. Repellents applied to shoes, stockings, and pant cuffs further deter chiggers. If entering taller vegetation, apply a repellent to waist, zippered or buttoned fly, collar and cuffs. Check local retail outlets for available repellents registered for use against chiggers. Read and explicitly follow labeled instructions when using them.

After returning from chigger-infested areas, shower thoroughly with several soapings and rinsings. Wash infested garments before wearing them again.

## Bite Treatments

Contact a dermatologist or pharmacist for recommendations on products to relieve discomfort and itching caused by chiggers.

## Chigger Reduction

Keeping lawns well manicured is helpful in reducing chigger numbers — especially in sunny areas. Chemical acaricides are usually effective if properly applied. While many products are registered for use (in Kansas) against chiggers and mites on turf/lawns, not all are marketed for use by homeowners. Check local retail outlets for product availability.

### Bob Bauernfeind, Entomology

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