

# Don't Let the Bedbugs Bite

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The human bedbug is an ancient pest. Experts believe bedbugs fed on the blood of pre-historic humans when they lived in caves. When people moved from caves into tents, huts and houses, bedbugs moved along with them.

Dealing with bedbugs was a challenge before modern pesticides were developed. The bedbug's habit of living in cracks and crevices made them hard to control. Older treatments were probably either not very effective or they were dangerous. One dangerous old-time remedy was to treat infested mattresses with gasoline. A preventative treatment involved placing a can of kerosine under each bed leg, presumably to keep the bedbugs from crawling up the bed.

After WWII, effective insecticides made bedbug infestations so rare that most Americans never saw a bedbug. This also meant the last couple generations of homeowners (and pest control companies, too) have never had to deal with a bedbug infestation.

Times have changed. Entomologists worldwide have noticed an upsurge in bedbugs in the last five years. Why this has happened is unknown.

One suggestion is there is more world travel today. This



Photos by Vicki Jedicke, UNL Extension in Lancaster County

*Adult bedbugs are small, reddish brown, wingless and have very flat bodies. Above — highly magnified view. At right — actual size.*

includes vacationers, business travelers and international travel to places where there are more bedbug problems. Some expensive hotels have been infested with bedbugs and travelers have not only gotten bitten, but they have brought bedbugs home after vacationing. A 2004 survey of pest control companies by Pest Control Technology magazine found that hotels accounted for the largest proportion (37 percent) of bedbug infestations nationwide.

A contributing factor might be the shift in routine insecticide use for interior pests. And, some insecticides, like

Dursban<sup>®</sup>, that provided residual control are no longer available for indoor use.

Oddly enough, bedbugs have never been shown to transmit diseases and aren't considered to be a serious health threat, although people dealing with bedbugs may experience psychological stress and insomnia.

## Habits

Bedbugs are reddish-brown, small—about 1/4-inch long—wingless and very flat (Fig. 1). They prefer to feed on human blood, although they may bite other warm-blooded

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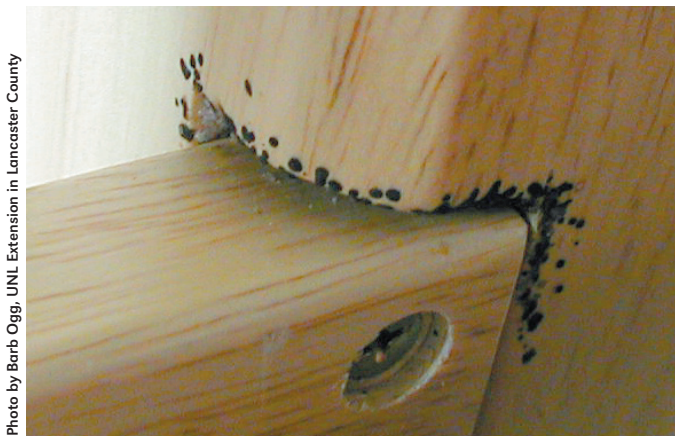


Photo by Barb Ogg, UNL Extension in Lancaster County

*Bedbug fecal spots on a futon frame are a sign of a bedbugs infestation.*

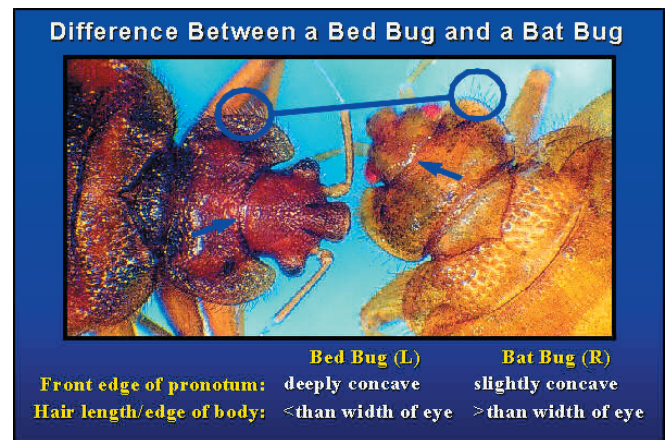


Photo by Jim Kalisch, UNL Department of Entomology

*Correct identification of bedbug vs batbug is important for effective control*

animals, including pets. During the day, bedbugs hide in bedclothes, mattresses, springs, bed frames and cracks and crevices near the bed. They use heat-seeking thermoreceptors to find their sleeping victims at night.

Bedbugs feed on blood as their only source of nutrition. Feeding occurs once during each of the five immature stages to grow and molt to the next stage. The adult female feeds periodically on blood to produce eggs.

Bites are often on the upper body: neck, arm and shoulder. Most people don't feel the bite, which is painless, but bites may produce welts and local inflammation and itch afterwards.

Females may lay several hundred eggs during their adult lifetimes. Eggs are laid in cracks and crevices away from the host in the areas where adults hide during the day. When conditions are favorable, eggs hatch in about five days.

Time of development depends on food and temperature. When food is abundant, it can take about two months for bedbugs to grow from egg to adult during warm weather. Bedbugs are amazingly adaptable because they are able to fast for extended periods. It has been documented that they can live more than a year without food.

### ***Prevention***

Bedbugs don't just appear spontaneously in a home or apartment. People inadvertently move bedbugs from place to place. Bedbugs in hotels or motels sometimes crawl into luggage and return home with travelers. Another way is to bring them home with infested furniture. Brought inside apartments or hotel rooms, bedbugs may travel to other rooms as their numbers increase.

When checking into a hotel, it is a good idea to immediately inspect rooms for bedbugs. Bedbugs leave brown spots or smears near their hiding places and on bedding (Fig. 2). The size of the blood spots varies with the size of the bedbugs. The tiniest spots are pinhead size, the largest may be 1/8-inch in diameter. Spots of blood won't be found on fresh bedding, but look near potential hiding places on or near the headboard or on the mattress itself.

Even if no bedbugs are found, don't place luggage on the floor near the head of the bed. Use luggage racks instead.

### ***Management***

Bedbugs are tough to control because most of the insecticides available today are repellent to bedbugs. This means bedbugs may respond to a chemical application by scattering away from the treated areas. In apartment settings or hotels, treatments can inadvertently spread the bedbug problem.

Because bedbugs are difficult to control, it may be most efficient to hire a pest control company rather than the do-it-yourself approach. Pest control professionals have a greater arsenal of products available and tools needed to get treatments into cracks and crevices where bedbugs hide.

But, people can help with control efforts to make the treatments more effective and eliminate an infestation more quickly:

- Examine all items in infested rooms for bedbugs. Look for black or brown fecal spots to pinpoint hiding places. Kill bedbugs by dropping them in hot, soapy water and flushing. Remember that immature bedbugs are very tiny. Don't forget to check under mattress buttons and between the mattress and box springs.
- Launder bedding and dry in a hot dryer to kill all stages of bedbugs.
- Thoroughly vacuum infested areas. This includes the mattress, box springs furniture, beds, headboards, sofas. Don't forget the void area underneath box springs—tear away the cambric fabric and look for bedbugs there. After you are finished, bag the vacuum cleaner bag and take it to the trash. Bedbugs are very resistant to being killed and you don't want them crawling out of the vacuum cleaner to re-infest the house. Vacuum every couple days until the infestation is gone.
- Use a steamer on mattresses to kill eggs that might have been overlooked. Steaming is effective and safer than spraying mattresses with insecticides. Steam cleaning carpets is also a good idea, but work with the pest control company to make sure you are not interfering with the effectiveness of treatments.
- Eliminate clutter in infested areas to reduce bedbug hiding places and make treatments more effective. Because these bugs like to hide in small cracks, stacks of clothing, paper items and corrugated cardboard are likely hiding places.

Some people recommend throwing mattresses away. If the mattress is in good condition, it may not be necessary to discard it. After vacuuming and steaming the mattress, cover it with a plastic zippered cover to trap bugs inside. Keep the mattress cover on the mattress for at least a year to make sure all the bugs are dead.

When considering pest control companies, ask about previous experience successfully treating bedbugs. The company should use a number of tactics to control these pests. These include dusts in wall voids, crack and crevice sprays and sticky traps to monitor bedbug movement and assess the effectiveness of treatments.

### ***Bedbugs vs bat bugs***

The bedbug belongs to the family Cimicidae. Other members of this family feed on bats and birds. Experts believe that bedbugs descended from their bat-feeding cousins that fed on cave-dwelling humans. Because bats can live in or near human dwellings, it is often important to determine the bug's identity before control measures are taken (Fig. 3). When dealing with bat bug infestations, eliminating bats from the attic is the first step needed to solve the bug infestation.