



# Bed Bugs

## Recognition and Management

WASHINGTON STATE UNIVERSITY EXTENSION FACT SHEET • FS070E

### Purpose

This fact sheet is intended to help individuals and families recognize bed bugs and the signs of bed bug infestation. Additionally, pest management approaches (both chemical and non-chemical) for private residential situations will be discussed.

### Introduction

The saying “sleep tight, don’t let the bed bugs bite” is not just a quaint bedtime rhyme, but also a reminder that bed bugs do exist, and they require human blood meals to survive and provide for their offspring. In today’s highly mobile society, bed bugs have reestablished themselves as household pests. Bed bugs are not known to transmit human diseases, but they can cause skin welts, local inflammation, and contribute to insomnia. Bed bugs have been found in homes, apartments, rental units, and even hotels throughout Washington with increasing frequency. *Cimex lectularius* is the most common species that feed on humans.

### Got Bed Bugs

Adult bed bugs are reddish brown, wingless, oval shaped, and paper thin (Figure 1). The size of these bugs ranges from 1/16 in. (1 mm) as immature nymphs to 1/4 in. (5 mm) as mature adults (Figure 2). Bed bugs have piercing mouthparts that allow them to puncture human skin and withdraw blood (Figure 3). Since their bite is painless, bed bugs can feed on humans at night without being noticed. The next morning, skin welts or local inflammation may appear, although individuals vary in their sensitivity to these bites. Bed bugs are difficult to detect, but their presence can be determined by examining furniture that may have been slept on, such as chairs or couches, as well as mattress seams (Figure 4), bed frames (Figure 5), and bed springs for the presence of blood spots (Figure 6), shed skins, or for the bugs themselves. Bed bugs can also be found hiding behind baseboards or loose wallpaper, under rugs, and in cracks and crevices inside a room, as well as in the room’s furnishings.

Bugs similar to bed bugs infest bats, swallows, and poultry. These bugs, particularly bat bugs, will feed on and cause



Figure 1. Adult bed bugs are reddish brown, oval-shaped, wingless bugs about 1/4 inches (5 mm) long.



Figure 2. Bug size ranges from 1/16-inch (1 mm) long eggs or newly emerged nymphs (right) to the 1/4-inch (5 mm) long adult (left).



*Figure 3. Bed bugs are paper thin and possess piercing mouthparts that allow them to puncture human skin and take blood meals.*



*Figure 5. The presence of bed bugs may also be confirmed by examining bed frames and springs for blood spots, shed skins, or the bugs themselves. Photo credit to Bob York, York's Exterminating, Yakima, WA.*



*Figure 4. The presence of bed bugs can be confirmed by examining mattress seams for blood spots, shed skins, or the bugs themselves. Photo credit to Bob York, York's Exterminating, Yakima, WA.*



*Figure 6. After feeding, bed bugs often excrete material in the form of blood spots near the host or in the vicinity of where they hide during the day.*

discomfort to humans when their preferred host is not available. Unlike the bed bug, the abdomen of a bat bug is uniformly hairy, and its shoulder fringe hairs are longer than the width of its eyes (Figure 7). Distinguishing bat bugs from bed bugs is important because bat bugs can only be controlled by first eliminating the bats from your home.

### **Bed Bug Life Cycle**

**Adults:** Bed bugs are wingless and move from household to household by hitching rides in luggage, baggage, clothing, bedding, upholstered furniture, and even on people. Once introduced into a new household, the adult can live up to 10 months and can survive several months without feeding. If a food source is not readily available, bed bugs are likely to migrate to adjacent rooms in search of a blood meal.

**Eggs:** The adult female will deposit sticky, rice-shaped eggs about 1/16-inch long into cracks, crevices, and rough wooden surfaces around sleeping areas. Bug nymphs will emerge approximately 1 to 2 weeks later.

**Immatures:** Newly hatched bed bugs look identical to the adults, except they are smaller and a lighter brown in color. Under ideal conditions, bed bugs can complete their life cycle from egg to adult in as little as 35 days, and they may reproduce 3 to 4 generations per year.

### **Bed Bug Management**

- Avoid introducing bed bugs into your home. Homeowners should not acquire second-hand mattresses and upholstered furniture without first quarantining them for several months to ensure that they are free of bed bugs. Second-hand cloth-



**Figure 7. A bat bug (left) has a uniformly hairy abdomen and the fringe hairs on its pronotum (or shoulders) are longer than the width of its eyes, unlike the bed bug (right). Photo credit to John Vander Houwen, WSU Extension, Yakima, WA.**

ing or bedding should be laundered in hot water immediately or taken to a commercial cleaner before it is used in the home. Ideally, when returning from overnight trips, all travel clothing should be laundered immediately, and travel articles should be quarantined for several months before reuse. It would be prudent to have luggage stored away from residential sleeping areas or sealed in plastic bags.

- Capture suspected bed bugs by using sticky traps or cards (the type used to capture spiders or cockroaches) to confirm their presence in the home. Place these traps or cards along the baseboards next to the bed or under the feet of the bed or couch. Check the card each morning for bugs that have crawled across it and are entangled in the glue. Confirm the identity of these bugs by bringing the card with the trapped bugs to your local Extension office or pest control professional.
- Eradicate bed bugs from the home. Consider hiring pest control professionals since bed bugs are difficult to eliminate from a household. Furthermore, bed bugs cannot be eliminated without full cooperation from occupants in removing infested materials, maintaining strict bed and bedding cleanliness, and establishing a barrier between the bed and an infested room.

- Remove or replace any infested furniture, including mattresses, box springs, couches, and upholstered chairs, whenever possible.
- Clean and vacuum furniture and mattresses and wash bedding weekly. This will reduce, although not eliminate, bed bug infestations. Freshly laundered bed linens, draperies, and clothing should be stored in sealed plastic bags to prevent reinfestation.
- Establish a barrier or space between the bed and the floor to further discourage bed bugs from climbing onto the bed (remember bed bugs are wingless and cannot fly). Raise the bed off the floor by placing the mattress on a bed stand. If the mattress is already off the floor, remove all items stored under the bed. Do not allow the mattress or box springs to touch the wall, and do not allow bedding to touch the floor. Place the feet of the bed on risers or coasters filled with soapy water, or insert sticky cards under them to block access to the bed. Plastic mattress liners that encase and seal the mattress will work to prevent bed bugs from hiding in the mattress.
- Obtain pesticides labeled for indoor use against bed bugs. Look for an annually revised listing of these products on the WSU Pestsense website at <http://pep.wsu.edu/pestsense/>. Most products should be used where the bugs hide during the day, including floorboards, moldings, under wallpaper and carpeting, wall sockets, picture frames, and furniture. Do not treat bedding or mattresses with pesticides yourself. Hire pest control professionals who can properly, safely, and effectively apply these products without risking the health and safety of homeowners.
- Inspect sleeping areas in adjacent rooms since these surprisingly mobile, yet wingless, bugs can move into surrounding areas. You may want to extend your inspection area and treat adjacent rooms if necessary.

## Summary

The incidence of bed bugs is on the rise in North America, so precautions to avoid introducing them into your home are prudent. Bring any bugs found during a home inspection or captured on sticky traps or cards to your local Extension office for identification. While there are measures homeowners can take to reduce the incidence of bed bugs in an infested household, the best management strategy is to cooperate with a local pest control professional to eradicate the problem.



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