

# Bed Bugs

## *Cimex lectularius*



Figure 1. Adult bed bug (image: James D. Young, USDA APHIS PPQ, Bugwood.org)



Figure 2. Mixed life stages and cast skins of bed bugs (image: Whitney Cranshaw, Colorado State University, Bugwood.org)

A resurgence of bed bug infestations, not only in low-income housing, but also in budget to high-end motels and hotels throughout the country, as well as in other public areas means increased vigilance is required to minimize the risk of introducing bed bugs into the home after traveling or purchasing second-hand furniture. The likely cause for the upsurge is the increase in global travel, commerce, widespread insecticide resistance, and the difficulty of achieving effective eradication.

Bed bugs are blood suckers and feed primarily on humans, but can also feed on other mammals (pets) in the home. Attracted to body warmth and breath (CO<sub>2</sub>), the insects feed at night and hide in dark cracks and crevices during the day. Adult bed bugs are brown in color and visible to the naked eye; immature stages, or nymphs, are white in color, small and difficult to detect with the naked eye (Figs. 1, 2).



Figure 3. Forehead (left) and leg (right) skin reactions to bed bug bites (image: Tim Stock, IPPC, Oregon State University)

Individuals react differently to bed bug bites. Reaction time may vary from a few hours to 2 weeks. Some people experience large swollen bumps while another person sleeping in the same room has virtually no reaction (Fig. 3). Bed bugs can survive without feeding for several months. Human diseases are not transmitted by bed bugs.

There are three issues to consider: 1) avoiding being bitten and/or picking up bed bugs on luggage and clothing when staying in infested accommodation; 2) avoiding an infestation in the home caused by the introduction of bed bugs on second-hand furniture; and 3) controlling an infestation already in the home.

**What to do upon arrival in a hotel room:**

- Put all luggage, coats and belongings in the bathtub
- Check the mattress, box spring and headboard for signs of infestation as described below

**What to look for:**

- Small trails of dried blood droplets on mattresses and bedding
- Accumulation of red-brown stains (fecal spots) in the cracks and seams of furniture and bedding
- Molts (cast skins) of the insects, typically translucent and yellow-brown. Immature carpet beetles and their molts can be mistaken for bed bugs (see Fig. 4)

**Where to look:**

- In the cording around a mattress at the corners and seam near the headboard area
- In the box spring, also near the headboard area
- In furniture: the cracks where the bed frame side rails and cross braces attach to the headboard, behind the headboard, the underside of drawers, and inside recessed screw holes, inside upholstered furniture
- Behind electrical and telephone outlet covers
- In/under electrical devices kept near the bed (alarm clocks, lamps, telephones, *etc.*)

**Using a monitoring trap:**

- Use of a black climb-up trap with a gel hand-warmer inside (Fig. 5), placed on the floor near the bedpost at the wall or headboard end of the bed, can attract nymphs and adults in the room
- Check the trap for insects after 2-4 hours, and/or in the morning



Figure 4. Insects that are commonly misidentified as bed bugs. Left to right: larval dermestid/carpet beetle (image: UGA2154097 Joseph Berger, Bugwood.org), Adult Carpet Beetle (image: Natasha Wright, Florida Department of Agriculture and Consumer Services, Bugwood.org)



Figure 5. Example of monitoring trap placed on carpet near bedpost; rough walls outside help insects climb in, smooth inside walls trap insects in the trough; use of hand-warmer gel in tray attracts insects (image: Tim Stock, IPPC, Oregon State University)

**How to help prevent the introduction of bed bugs into the home:**

- **DO NOT** purchase second-hand furniture (mattresses, box springs, sofas, upholstered chairs, *etc.*); these are high risk sources of bed bug infestations
- When first checking into a hotel, motel, or B&B inspect the linens and bed area for signs of bed bugs, and consider placing a monitoring trap as described above
- When traveling, keep your luggage away from the bed and off the floor (the further from the bed the better)

- After returning home from traveling, store your suitcase and as many other items as possible in the garage (wipe them down with a proprietary cleaner first). Immediately wash and dry all clothes on high heat. Some clothes may shrink. To avoid this, put them in the dryer on high heat *before* washing them, then dry on mild heat setting.
- If you suspect you have brought bed bugs home, you should also bag contents of luggage and place in a freezer for 7-10 days.

***What to do if you suspect a home infestation:***

- Eradication should be performed by a pest control professional. Eradication by homeowners is rarely successful because effective products are not available for purchase and effective methods can only be performed by a professional
- Choose a pest control company that has the expertise to control bed bugs. **MANY DO NOT.** A good company will discuss with you how to prepare for treatments, and treatment plans will involve a combination of heat, freezing, spot treatment pesticide applications, fumigation of bedding, clothes etc., and properly trained bed bug-sniffing dogs. Treatment should be followed by monitoring. Major cities are more likely to have pest control companies with the proper expertise

Other resources

Kells, S.A., and J. Hahn. 2013. Prevention and control of bed bugs in residences. University of Minnesota Extension. <http://www1.extension.umn.edu/garden/insects/find/bed-bugs-in-residences/>

University of California, Agriculture and Natural Resources, Statewide Integrated Pest Management program. May 2013. Pest Notes: Bed Bugs. Publication 7454