



Bed Bugs

Cimex lectularius L.

Bed bugs are making a comeback in the United States. They are occurring in any type of residence or lodging from the most luxurious hotel to more modest homes. They are not associated with unsanitary conditions. Bed bugs can be introduced to any household or establishment from visitors or by hitching a ride in your luggage.

Aristotle described bed bugs two thousand years ago. Bed bugs have been recorded in American history as far back as the 17th century. The early colonists inadvertently brought them from Europe to the new world. Up until World War II, bed bugs were a common problem in the United States. Strong new insecticides, such as DDT, were developed during the 1940s and 1950s which effectively reduced the incidences of bed bug infestations. Domestic and international travel and the removal of many organo-phosphate pesticides have contributed to the population explosion that has occurred over the past decade.

What is a Bed Bug?

The bed bug is an ectoparasite of warm-blooded animals including humans, animals, bats, and birds. The wingless, mature bed bug is brown, flattened and between 1/4 and 3/8-inch long. When engorged with food (blood) the body becomes elongated and swollen, and the color changes from brown to dull red. The change in size, shape and color is so great that bugs in different degrees of enlargement may appear to be of different species. Nymphs are smaller in size but of similar color and shape. All stages feed on humans; nymphs must have a blood meal before they can molt to the next stage of development.



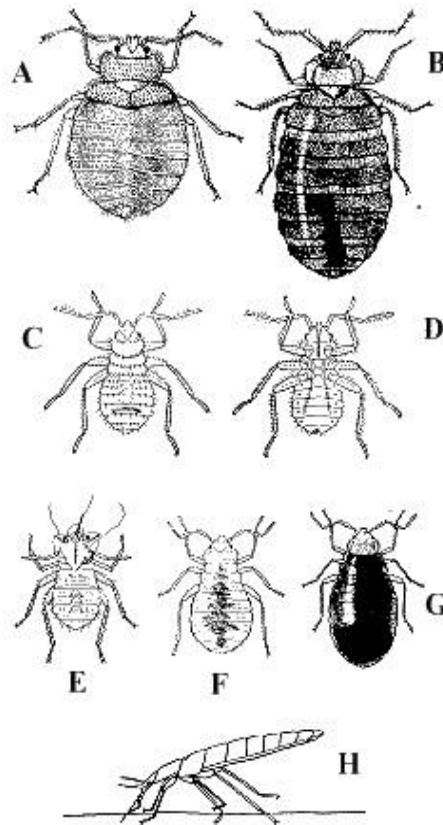
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Life Cycle

A female bed bug lays about two eggs per day and may lay approximately 200 tiny white eggs. The eggs are oblong and sticky, hatching in as little as four or up to 24 days. Upon hatching nymphs, will immediately move to feed. There are five immature nymph stages, each one requiring a blood meal to continue.

Adults require a blood meal for reproduction. Total developmental time from egg to adult ranges from six weeks to four months or more depending on conditions. They can live up to a year to a year and a half. The stages of the bed bug life cycle are illustrated below. (Diagram courtesy of North Carolina State University.)

Bed bugs are very hardy insects, able to withstand several months without food (blood) or adverse conditions. These insects are nocturnal, moving to their hosts at night to feed quickly for three to fifteen minutes and seeking hidden shelter upon completion. In bedrooms, bed bugs will hide in the joints and crevices of bed frames and box springs, in the seams and folds of mattresses and even in the upholstery of furniture, hollow bedposts, under base boards and behind wallpaper.



Bed bug. A, Adult. B, Adult engorged with blood. C-D, Newly hatched bed bug (top and bottom views). E, Nymphal cast skin. F, Older bed bug nymph. G, Older bed bug nymph engorged with blood. H, Feeding position.

Signs of Bed Bug Infestations

Bites are very irritating and can cause severe itching. Bites are commonly seen as red welts with a tiny dot at the center. They have not been shown to transmit any human disease. People may have varying degrees of allergic reactions to the bites. This is caused by anesthetic and anticoagulant substances injected during feeding. Scratching can lead to secondary bacterial infections. Stress, anxiety and sleeplessness often result from bed bug infestations.

Visual signs are spots of brown excrement from the insects, dead bed bugs and molted skins. Fecal spots of digested blood might be seen on bedding. Look for dead bugs and cast skins in or near hiding places; in mattress seams, furniture crevices, or small dark areas. Bed bugs are nocturnal, most active in the hours before dawn. They avoid the light and are seldom seen. Large infestations are characterized by a distinct and unpleasant odor.

Sources of Introduction

Bed bug infestations are the result of the introduction of viable eggs or live bugs into the household. Nesting rodents (including bats), nesting birds, pests, guests and contaminated bedding are important means of spread. Bed bugs are also carried from place to place in the baggage or on the clothing of transients and occasionally in packages. They may be brought into non-infested houses with infested furniture. They may crawl from house to house in

thickly settled neighborhoods. They can live without food for several months or possibly feed on the blood of mice and thus maintain an infestation in vacant homes.

Places bed bugs are found include hotels, hostels, used furniture and household products, universities, self-storage facilities, rental or moving trucks, movie theaters, and homeless shelters.

Controls

Bed bugs are very difficult to control. Once these pests enter an occupied house, only the repeated applications of selective insecticides will remove them. This is best left to the professional exterminator.

General sanitation will not eliminate bed bug infestations but will greatly help prevent their spreading. Sanitation measures include: washing all bed clothes in hot water and drying in a hot dryer cycle (sheets, pillow cases, blankets, mattress covers); washing floors and walls (paying particular attention to cracks and crevices); rough, thorough vacuuming of floors, mattresses and box springs (pay particular attention to seams and folds), infested furniture and pet bedding (after vacuuming throw away or thoroughly empty the cleaner bag).

Special encasement covers can fully enclose the mattress and box spring preventing insects from getting into or out of the bed. Placing the legs of the bed in shallow cups of mineral oil will prevent the bed bugs from climbing up to you. Another method is wrapping the legs with two-inch-wide sticky tape with the sticky side out to snare any climbers. Pull the bed away from the walls to further restrict access. Steam clean carpets and rugs. Reduce clutter in home to eliminate hiding spaces. Items that cannot be laundered may be frozen for more than 72 hours or heated to 120°F for one hour. There are no repellents effective against bed bugs and as far as attractants, we are the bait.

Pesticide Safety Tips. READ THE LABEL on each pesticide container before each use. Apply as directed. Heed all warnings and precautions. Store pesticides in their original labeled containers out of reach of children, irresponsible people and pets, preferable under lock and key. Dispose of empty containers safely. For up to date chemical insecticide recommendations, call the UConn Home and Garden Education Center at (877) 486-6271.

The Connecticut Agricultural Experiment Station's [Connecticut Coalition Against Bed Bugs](#) page has many resources for homeowners.

Prevention Tips for Travelers

Travelers can greatly reduce their risk of bringing bed bugs home by using several precautions. Inspect sleeping area of accommodations for any signs of bed bugs mentioned above. Choose hard sided luggage over soft. Put suitcases on luggage racks, not on the floor or bed. Do not place clothing in drawers. Hang items on shower rod instead of in closet, (Bring plastic hangers). Bring large plastic bags to bring clothing home. Once home, open the suitcases outdoors. Immediately wash all clothing in hot water. Dispose of empty bags in outdoor trash. Lightly spray luggage with pyrethrum-based insecticide. Read and follow label directions carefully whenever using pesticides.

Despite good cultural practices, pests and diseases at times may appear. Chemical control should be used only after all other methods have failed. For pesticide information please call UConn Home and Garden Education Center weekdays, in Connecticut call toll free 877-486-6271. Out of state call 860-486-6271

References:

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Rev. by the UConn Home and Garden Education Center, 2019/

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