

## Bed bugs: Awake to the growing problem

November 1 2007

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Bed bugs have taken up residence in urban areas across the country, and the infestation may only get worse, said a Penn State entomologist.

Why the dramatic increase? Bed bugs were once a common pest, but were mostly eradicated by older types of insecticides in the last half of the century. According to Steve Jacobs, extension entomologist at Penn State, the spread of bed bugs may be attributed to more people traveling, improved treatment methods that specifically target other pests and lack of public awareness.

Jacobs said the first step in getting rid of these pests is making sure you have them to begin with. "Bed bugs are small, wingless insects that feed solely upon the blood of warm-blooded animals. The common bed bug prefers human hosts, but will feed on domestic birds and other animals when necessary," he said. "Adult bed bugs are chestnut brown and flat and oval in shape and are tiny, about 1/4 inch long. Their small, flat shape enables them to readily hide in cracks, however their bodies become elongated, swollen and dark red after a blood meal. Newly hatched nymphs look much like the adults but are smaller and nearly colorless."

Bed bugs are active only at night, usually just before dawn. During the day they hide in cracks and crevices in walls, floors, beds and furniture. "When only a few bed bugs are present, they live close to human sleeping areas; when numerous, they can be found in many rooms of the house," Jacobs explained. People also may find cast skins, which are empty shells of bugs as they grow from one stage to the next. Also look

for fecal spots (composed of digested blood) that are left behind after a bed bug takes a blood meal.

Female bed bugs can lay up to 350 eggs in a lifetime, depositing them on rough surfaces or in cracks and crevices. "The eggs hatch in six to 17 days, with nymphs needing a blood meal in order to grow. Bed bugs reach maturity after about 21 days, but may take longer if food is scarce," Jacobs explained. "In fact, nymphs and adults can live up to one year without food. When you consider three or more generations can occur each year, with each generation living 12-18 months, you can see how an infestation can quickly become severe," said Jacobs.

People are often fearful that bed bugs can transmit diseases, but according to Jacobs there have been no documented cases of disease transmission as a result of bites. However, their bites can produce an itching, irritating rash. "Bed bugs bite by using their sharp beak to pierce the skin and then inject a salivary fluid containing an anticoagulant that helps them obtain blood," Jacobs explained. "They feed rapidly, becoming engorged in less than 10 minutes. The act of biting is usually not felt, but later there is an allergic reaction to the protein found in the bed bug's saliva and a colorless lump develops at the bite location with discomfort lasting a week or more."

Once people determine they have a bed bug infestation, control can be achieved by following an integrated pest management approach that involves tactics that are safe and environmentally compatible, including preventive measures, sanitation and chemicals applied to targeted sites.

Prevent bed bugs from gaining a foothold in the home by keeping infested items out of it. It is important to carefully inspect clothing and baggage of travelers, being on the lookout for bed bugs and their telltale fecal spots. Jacobs said people should thoroughly inspect their homes, looking for bed bugs and their harborage sites so that cleaning efforts

and insecticide treatments can be targeted. "Be sure to inspect mattresses, box springs and bed frames, as well as crack and crevices that bed bugs may hide in during the day or when digesting a blood meal," he explained.

According to Jacobs, sanitation measures include frequently vacuuming the mattress and premises, laundering bedding and clothing in hot water, and cleaning and sanitizing dwellings. After vacuuming, immediately place the vacuum cleaner bag in a plastic bag, seal tightly, and discard in a container outside. This prevents captured bed bugs from escaping into the home.

After vacuuming the mattress, enclose it in a zippered mattress cover that is used for house dust mites. Any bed bugs remaining on the mattress will be trapped inside the cover. Leave the cover in place for a year or so since bed bugs can live that long without a blood meal.

Jacobs recommended home owners seek assistance from a professional pest control company. "Controlling an infestation requires very detailed working and moving and disassembling furniture. In addition, careful inspections must be completed in conjunction with nonchemical controls and insecticide treatments. The insecticides that are available are commercial products requiring special equipment and training, and are not readily available in 'over-the counter' products," said Jacobs. In addition, experienced companies know where to look for bed bugs, are schooled in proper techniques, and have an assortment of management tools at their disposal.

Jacobs said when choosing a pest control company, make sure the company meets all the legal requirements that qualifies them to service the home. This includes a Pennsylvania Pesticide Applicator Certification or Registered Technician card, a business license and general liability insurance coverage. "You should also ask for a list of

local references so you can learn about their past performance in treating bed bugs. They should be able to answer your questions in regard to the pest and its treatment. Keep in mind you may have to repeat applications if bed bugs are present two weeks after the initial treatment," he said.

For more information on bed bugs and their control, go the Pennsylvania IPM Program's Pest Problem Solver at [paipm.cas.psu.edu/442.htm](http://paipm.cas.psu.edu/442.htm) or go to [www.ento.psu.edu/extension/factsheets/bed\\_bugs.htm](http://www.ento.psu.edu/extension/factsheets/bed_bugs.htm) online.

Source: Penn State

Citation: Bed bugs: Awake to the growing problem (2007, November 1) retrieved 18 April 2024 from <https://medicalxpress.com/news/2007-11-bed-bugs-problem.html>

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