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Bed Bug CSI

Investigating Bed Bug Infestations in Lincoln

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The Crime Scene

Small reddish-brown insects crawl out of hiding places near the bed for a 10-minute midnight feeding. It's not just a snack. After becoming engorged, these night feeders slip back into their hiding places. The sleeping victim never feels the bite. The human victim wakes to find bites on upper body, arms or neck. This scenario takes place night after night and finally, the small insects are seen. These insects are bed bugs.

We are starting to see increased numbers of bed bug infestations here in Lincoln. In a month's time, I had three phone calls from people living in different and unrelated households who had bed bug infestations. Compare this with my first 10 years in extension when I saw only one bed bug case. Are these isolated incidents? Probably not. Entomologist and pest management professionals (PMP's) across the U.S. are seeing bed bug infestations in surprising numbers.

Background

Bed bugs are an old pest. Before WWII, bed bugs were pretty common in hotels, boarding houses and homes. With the advent of DDT and other insecticides after WWII, bed bugs seemed to disappear.

Because bed bugs have been so rare, there has been a lack of industry-supported research on what currently available products work best. Another problem is many PMP's don't have much experience treating for bed bugs. One seasoned PMP told me, "I've been doing this for 20 years, and I've never even seen a bed bug infestation before." Clearly, all of us are on a steep learning curve.

Investigations

Treating a bedroom for bed bugs is dicey because this is where people spend a lot of time. Treatments include vacuuming, cleaning and treating hiding places. But, where do bed bugs hide? In the last 18 months, I've looked for bed bugs in three infested dwellings. Before my inspections, I knew that:

1. Bed bugs like to live in groups in tight places.
2. Most bed bugs will be found near their sleeping food source.
3. Classic telltale signs of bed bugs are dark fecal spots or smears

CASE #1. A newer apartment building had two infested units which shared a common wall. The fellow in one unit slept on a futon. This unit had many more bed bugs than the other and was probably the source of the infestation. Before we arrived, residents had discarded the futon mattress, but there were many signs of bed bugs near cracks of the futon frame (Figure 1), the area where carpet touches the baseboard and near electrical receptacles. Some bed bugs were found on hanging clothes in the closet. Where did the bed bugs come from? The fellow who slept in this bedroom moved in about five months earlier. While

it can't be proven, I suspected he brought the bed bugs with him.

Residents were asked to vacuum floors, beds and foundations thoroughly and repeatedly and to get rid of clutter in the bedrooms. In the second bedroom, I recommended encasing both the mattress and foundation in zippered mattress covers, to encase and starve any bed bugs inside.

A pest management company treated cracks and crevices, baseboards and carpeting using professional-use insecticides and insect growth regulators. Sticky traps were used to monitor the infestation. After reports of bites two months later in nearby units, all the units in the building were treated, repeated for a couple months. A year later, there have been no reports of bed bugs in this apartment building.



Figure 1. Bed bug fecal spots near cracks of futon frame.

CASE #2. In February 2006, a family brought bed bugs to the extension office for identification and said everyone in the four-bedroom home was getting bitten at night. During my inspection, I flipped mattresses, but found no bed bugs, although one mattress did have bed bug spots on it (Figure 2). I turned over foundations (box springs) and removed the dust cover. Turning back the fabric where it was stapled to the wood frame, I found many bed bugs and fecal spots (Figure 3). Most were found near the head of the bed, especially in void areas and cracks in the wood. Where did this infestation come from? About six months before they started noticing the bugs, a grown daughter moved back home with some furniture.



Figure 2. Bed bug fecal spots and smears on a mattress.



Figure 3. Fecal spots under the fabric stapled to the framing of box springs.

CASE #3. In early March 2006, I inspected a mobile home with a PMP, hired to treat for bed bugs. The family had bed bugs in an apartment last summer. To escape bed bugs, they moved into a mobile home taking few furnishings with them. Somehow, they moved bed bugs too! We found bed bugs in all bedrooms, but the largest infestation was in the living room sofa where their preschooler often slept on the sofa at night. Huge numbers of bed bugs were found between cushions, in seams and under the dust cover where fabric was stapled to the wood frame (Figures 4 and 5).



Figure 4. Bed bugs in seam of sofa.



Figure 5. Bed bugs under dust cover of sofa where fabric was stapled to the wood frame.

Observations

1. Most of the time, bed bugs aren't noticed for several months after brought into the home. An infestation probably begins with only a few bed bugs. It takes time for populations to build so people are getting bitten every night and all bedrooms are infested. I did some calculating. If one egg-laying female lays three eggs per day (which I have observed), even with 90

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Prevention is Tough, but There are Some Things You Can Do

- When you travel, inspect your hotel room carefully. Concentrate on the head of the bed, but also inspect the area where you place your luggage. One researcher has found luggage racks infested with bed bugs, presumably brought into the hotel room with infested luggage. Launder clothing immediately when you return home.
- Inspect used furniture before bringing it into the home. Look for fecal spots and stains.
- At the first sign of bites, inspect the area around your bed. Early detection means early control.