

A Real Pest

by Wayne Walker

With all the talk about bedbugs, who can sleep tight?

Yes, there are such creatures as bedbugs and, yes, they do bite. Until about five years ago, in the United States, bedbugs were restricted primarily to nighttime rhymes. Today, word of infestations occurs almost weekly as the pests have found their way into residence facilities across the U.S. as well as in other countries. Such news has forced university administrators to face the possibility of the problem striking their campuses. As a result, they are making plans for prevention and fearing the need to eliminate existing infestations.

Bedbugs are not a new problem. They have been documented since the days of Egyptian pharaohs. There has been evidence of bedbug infestations in Europe and Asia since the Middle Ages. In America, bedbugs were a problem until after World War II. At that time, pesticides were utilized to eliminate the problem. It came at a cost, though, as the pesticides also damaged the environment and were eventually banned.

The change in pest control practices and the increase in international travel have aided in the bedbug's latest revival. The hospitality industry – hotels, resorts, and the like – has been the hardest hit. However, due to the severity of the problem and the frequency of student travelers, bedbug outbreaks have occurred in residence facilities and likely will continue to occur. Origins of bedbug outbreaks in campus residence facilities have been traced to students' international jaunts, spring breakers returning to campus, and other associated overnight stays from campus.

So what exactly is a bedbug? Bedbugs are insects that require blood to survive. They have a lifespan of

about a year, and they are brown to red in color. The adults are approximately the size of a pencil eraser. The nymphs (infants) are tan to clear in color and much smaller in size. In their first stage, they are about the size of a pencil point. The female bedbug lays two to five eggs a day. Doing the math, we can see that an infestation can grow to huge proportions in a matter of a few months. Left unchecked, bedbug populations can grow to many thousands in a short period of time.

Richard DeShields, director of Residence Life and New Student Programs at Central Washington University, reports that by the time staff confirmed that his campus had a bedbug problem, it had grown to a point where

it affected an entire wing of a residence hall. Housing arrangements had to be found for 18 students before the rooms involved could be treated.



Bedbugs start off the size of a pencil point, but they can quickly grow into a big problem.



The bedbug question foremost in the minds of most housing professionals is, "How do we prevent these nasty little critters?" Beth McCuskey, director of Residence Life and Dining Services at the University of Wyoming, says, "You really can't prevent them, which can sound very scary. They hitch rides in clothing and luggage and can hide out at even the swankiest resorts."

Bedbug prevention begins with education. Institutions should provide information to all residents about bedbugs and what to look for as they travel around the United States and the world. Institutions should explain how bedbugs can be killed by heat and provide information about laundering clothing on high heat or using other heat-related techniques such as placing luggage in black plastic bags and then in a hot car for a few days after trips. Students should be reminded to pull sheets back

on hotel beds and inspect mattresses to see if there are any obvious bedbug problems. Residence life staff should be similarly educated and have access to information on how to handle complaints within the residence facilities. Early intervention by staff can prevent the spread of problems to other areas.

The first indications of a bedbug problem are when residents awake with itchy welts that may easily be erroneously diagnosed as flea bites on their bodies. The welts and itching are allergic reactions to secretions from bedbug salivary glands. The reactions differ between individuals in proportion to their antibodies. Just as no two individuals have the same reaction to mosquito bites, no two individuals have the same reaction to bedbug bites.

Another indication that bedbugs may be present is small blood spots on sheets and mattress covers. Bedbugs can only digest about half of their blood meals. Within the first few hours after eating, bedbugs excrete small drops of blood. Another cause of blood spotting is that people move around in their sleep and squash bedbugs between their bodies and the sheets.

Christine Garcia, manager of the urban biology section in the residential facilities department at the University of Maryland in College Park, says that many sheets and linens that students use today are colored, making finding bedbug blood spots difficult. She states that the most important part of finding bedbugs is very thorough inspections of bed furniture and the surrounding areas.

The treatments for removing bedbugs involve a variety of methods, products, and knowledge. Because the bugs are small and have the ability to hide in small cracks and spaces, treatment is difficult. McCuskey explains, "Hiring a pest control specialist who is skilled in integrated pest management is critical. Someone who has IPM training understands how to track to the source of the problem. You'll never kill them if you simply blast away at them shotgun style. You have to find out where they're nesting and eradicate them at that spot."

Every crack and crevice in each piece of furniture and every part of the room must be inspected and treated. Clothing must be laundered or run through a dryer cycle to use heat to kill bedbugs in clothes. Bedding must be laundered. The disposal of furniture items, particularly mattresses, becomes necessary as a solution for many infestations.

Products exist for limited treatment of infested mattresses. In most cases, though, heat is the best solution for treatment. DeShields explains that his campus worked with a company that used equipment

to raise the temperature high enough to kill bedbugs and their eggs.

Garcia utilized a slightly different approach at the University of Maryland. Her approach involved the mechanical removal of insects and eggs with stiff brushes and vacuums, treating the cracks and crevices in the room with diatomaceous earth and an insect growth regulator and utilizing a pyrethroid to treat hiding places in a chair. To prevent the spread of bedbugs while treating rooms, everything that leaves the rooms should be in plastic bags or wrapped in plastic.

Bedbugs are not typically eliminated in one treatment. It may require at least two treatments and sometimes more depending on how complicated the situation is. McCuskey and DeShields report that the bedbug infestations at their institutions required more than one treatment. DeShields is continuing inspections to determine if they have completely eliminated the problem.

The best way to know if bedbugs are eliminated is through follow-up inspections and consultations with residents. Pest control companies that provide services to the hospitality industry normally require treated rooms be unoccupied for at least one week while they continue to inspect and treat. In the university setting, that may not be possible, meaning student reports are even more important. Normally, if there are no reoccurrences of bedbugs within six weeks, indications are that the problem has been solved.

At this time, the pest control industry is beginning bedbug research in order to develop new products and strategies. However, solutions still are a few years away. Colleges and universities must review pest control contracts and communicate with pest control providers to insure that they are prepared to handle an eventual bedbug problem. It is equally important that housing professionals prepare plans for how to handle potential bedbug problems in residence facilities before an infestation occurs. Delays in addressing bedbug problems allow situations to grow in magnitude to almost unmanageable proportions. Communication is vitally important. Housing administrators need to provide training and information to residence life professionals at all levels, especially those with daily direct contact with residents. 

Wayne Walker

is the senior pest control technician for the department of Housing and Residence Education at the University of Florida in Gainesville.