

AAHOA LODGING BUSINESS

BEDBUGS PUT THE BITE ON HOTEL BUSINESS

April 2006

Could heat be the answer?

DR. MICHAEL R. LINFORD AND WILLIAM CURRIE

Traditional chemical exterminators and pest control products haven't stopped a global onslaught of bedbug infestations. A new non-toxic heat treatment could rescue businesses and reputations while eliminating odor, residue and costly furnishing replacement.

Bloodsucking bedbugs are once again attacking hotel guests and homeowners worldwide, triggering costly remediation, litigation and damaged reputations.

Recently, two Swiss women sued a swanky Manhattan hotel, where, according to their lawyer, "they were eaten alive," with bedbug bites over their torsos, arms, legs, cheeks and necks. A Las Vegas motel had to close for extermination and replace all mattresses, curtains and carpeting because of a bedbug infestation. The National Pest Management Association reported a 500 percent increase in U.S. bedbug incidents in the last few years, and infestations have risen tenfold since 1996 in parts of London. Universities with international students have reported bedbug infestations in the student dorms. In addition, cruise ships, hotels, hospitals, nursing homes, military bases and homeowners are now requesting pest control service for bedbugs at an alarming rate.

For over fifty years in the United States, bedbug infestations and re-

quests for pest control service for this pest were extremely rare thanks to the now-banned DDT pesticide. However, we now live in a worldwide community with international travel as the norm and bedbugs are expert hitchhikers. These insects may find a ride inside the cuff of a pant or clothing in general, or in a crease or seam of soft luggage. In addition, females may lay their eggs on, or inside your luggage if it is placed in an infested location. Hiding in mattresses, bedframes, headboards, sheets, luggage, clothing, carpet, cracks, crevices, furniture and even picture frames and bookcases, bedbugs emerge at night and can quickly infest homes and hotels via travelers' items. Bedbugs travel from room to room via wall voids such as, electrical outlets and wiring, pipes, water lines and the like. They most often migrate upward in buildings.

Bedbugs are tough to eradicate. According to the University of California Agriculture and Natural Resources "Pest Notes" September 2002, "Female bedbugs may lay from 200 to 500 eggs (in batches of 10 to 50)...Eggs are covered with a glue and hatch in about 10 days...There are five progressively larger nymphal stages, each requiring a single blood meal before molting to the next stage. The entire life cycle from egg to adult requires anywhere from 5 weeks to 4 months, depending on temperature...Bedbugs can go without feeding for 80



According to the National Pest Management Association (NPMA), bedbugs are not only a problem in hotels, but residential and multi-family homes, apartment complexes, residence halls and even cruise ships. Bedbugs are rusty brown in color, but are sometimes red after dining on one of their victims. An unfed bedbug is 1/4 and 3/8 inches long, which makes it easy for them to hide in places that can make elimination extremely difficult. They are a flat, broad oval-shaped bug with antennae. Though they can hide just about anywhere, they live and feed in beds, hence their name. The NPMA suggest vacuuming suitcases after traveling and checking bed sheets for small blood spots. For more information on bedbugs and many other pests, please visit www.pest-world.org.



to 140 days...Adults have survived without food for as long as 550 days. A bedbug can take six times its weight in blood, and feeding can take 3 to 10 minutes. Adults live about 10 months and there can be up to 3 to 4 generations of bedbugs per year."

Bedbugs are equipped with piercing, sucking mouthparts, but are not considered to be disease carriers. The piercing mouthparts consist of two stylets. One stylet allows the bedbug to ingest blood from the host; through the other, saliva is injected into the feeding location. It is the saliva that can cause the familiar swelling and irritation on the outer skin of the host. In addition to humans, bedbugs are also known to live on animals like mice, birds, rats, rabbits and chickens.

Aside from being extremely contagious with the ability to quickly spread and contaminate rooms and businesses, individual reactions to their bite can range from the annoying to the extremely severe. Symptoms can include red spots, severe intense itching and sleepless nights. The bites can produce a hard, whitish swelling that can bleed and the resultant scratching can produce secondary infection. Severe infestations may result in over 100 bites per night. Blood loss in such cases can result in anemia in infants that suffer from severe exposure.

Though once controlled with broad-spectrum pesticides like DDT, the insects are tough to eliminate with today's targeted pesticides. Spraying and dusting with pesticidal chemicals into every crack and crevice has raised concerns of exposure.

Fortunately, a revolutionary pest eradication treatment called ThermaPureHeat is proving to be a fast, non-chemical, non-toxic cure to bedbug infestations without residue, odor, or the need for replacing costly furnishings. The

process uses super-heated, dehumidified air to eliminate insect infestations as well as disinfect, decontaminate and dry out buildings in much the same way heat is used to pasteurize milk and kill bacteria in wine. The process has been used in thousands of insect-eradication projects from Hawaii to California, from Texas to Florida, from New York to Puerto Rico.

Entomologists at the University of California, Riverside; University of California, Berkeley; University of Hawaii; University of Florida and others have independently tested the process. Dr. Vernard Lewis of UC Berkeley conducted testing on behalf of the State of California for a 5-year period and found the process to be fully efficacious in the eradication of drywood termites in phase two, and the only non-chemical alternative to structural fumigation. The ThermaPureHeat process is also effective in eradicating all metamorphic stages of an insect, including egg, larva, pupa and adult.

Research determined that air must be heated and circulating and that temperatures of 140 degrees Fahrenheit for 3 to 4 hours or more was required in order to heat the infested area to lethal temperatures for insects. While laboratory testing confirmed that insects cannot survive 120 degrees Fahrenheit for an hour or less, experimentation revealed that higher temperatures were required to heat the building materials, furnishings, cracks and crevices, as well as wall voids to lethal levels.

"The ThermaPure process completely rids the room not only of bedbugs, but also of any other infestation, odors or moisture issues as well," says Scott Birchell, owner of CenCal, an exterminator specializing in non-toxic ThermaPureHeat treatments.

This process, which injects superheated air into the affected space,

raises the temperature of a room or entire structure up to a sauna-like 140° F to 160° F for several hours. The heat effectively destroys the insects, which won't develop a resistance to it as they do to chemicals.

"The room can be treated with everything in place and it will kill the bedbugs wherever they may be hiding — bedding, mattresses, carpet, furniture, or even deep in cracks and crevices," says Birchell.

Special difficulties that hotels, motels and multiple units face with respect to bedbugs are significant. If a guest is exposed to pesticide residue and gets sick, the person may sue. If the inhabitant is bitten several times, the result may be the same, as was the case when a couple on a cruise ship cabin received over 100 blood meal wounds and sued. If the facility has to close down in order to fumigate an entire structure, the loss of revenue can be substantial.

We already know that bedbugs can be found inside books, like phonebooks or in bookcases. Even by atomizing pesticides, it is unlikely to penetrate the pages of books in a drawer or tightly fitted on a bookshelf. A residual dust will not work in any visible area where a guest eats or sleeps. Even then, a desiccant dust is very slow acting over a period of two to three months. This would allow bedbugs to exist within a given habitation over a long a period of time. Even with low odor pesticides, persons with a sensitive sense of smell will detect the unmistakable bug-spray odor. If bedding is being changed from room to room, bedbugs may hitch a ride from one room to the next before the maid deposits the infested bedding into the laundry room. In fact, the bedbug may hitch a ride on the clothing of the maid.

The ThermaPureHeat process is lethal to the bedbugs without having to use pesticides of any kind. Doctors have prescribed the process for asthma patients to purify and



cleanse the structure wherein they reside. Additionally, the process can achieve lethal levels inside mattresses, pillows, wall voids, books and all contents within a given room. Because bedbugs typically migrate upward, rooms on several floors can be treated simultaneously within 4 to 8 hours depending on the number of heaters and the size of the treatment area. What that means is that rooms can be rented out by 6:00 p.m. if treatment commences in the morning hours. The loss of revenue is minimized, or eliminated altogether. Electric heaters will not arouse the same concern from patrons as will pesticides and fumigants.

Most importantly, the hotel or motel owner does not have to completely remove and replace all of

the furnishings, drapes, carpets or mattresses — a significant savings to the business.

As a side benefit, this type of process can oxidize and eliminate odors. When negative air machines filter the heated treatment air, the particulates, odors and aldehydes are captured through filtration. Thus, the indoor air quality of the structure being treated has been purified and improved.

Using this heating method to treat a structure generally takes less than eight hours. No multiple day move outs are required, thereby minimizing business disruption and secondary costs. It has been successfully used against infestations such as bedbugs, termites, mold, fungi,

bacteria and viruses. Additional benefits include improved indoor air quality by accelerating the off-gassing of odors and toxins.

ALB

Mr. William Currie is the director of the International Pest Management Institute and former U.S. EPA training officer for the Office of Pesticide Programs.

For more information about ThermaPureHeat, contact Dave Hedman at 866-665-3432 or visit www.thermapure.com.