

Pest Control

SOLUTIONS FOR YOUR BUSINESS

Baked Bedbugs? A New Recipe for an Old Favorite

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Pest Control

Problem: Bedbug infestation in a chemically sensitive account

Solution: An integrated, nonchemical approach that includes vacuuming, ThermaPure heat treatment and monitoring



In a second-floor apartment in an upscale waterfront complex on Florida's west coast, a tenant is undergoing chemotherapy. She cannot tolerate any new "chemicals" in her environment. An infestation of bedbugs (*Cimex lectularius*) was found in her unit, in the master bedroom and the living room.

St. Petersburg, FL-based American Pest Management identified the infestation and communicated information to the occupant about bedbugs, which is a critical step. Knowledge of several critical facts about bedbug behavior was necessary in solving this situation:

- Bedbugs do not distribute themselves evenly throughout their environment.
- They use concentrated harborages near their food supply.
- Emergence from harborages occurs when feeding, and only when it is dark.
- They do not stay on the host because they do not possess any appendages designed for clinging to hair, fur or skin.
- Many times, the only evidence seen is the dried fecal material near their harborage entrances.

The thoroughness of the inspection cannot be emphasized enough, because the signs can easily be missed. Even mattress seams are a common harborage area.

The inspection also needs to include areas that allow you to answer: "How did they get here?" Because the source had to be moved into the apartment, how and when did that happen? In this situation, a couple of important factors emerged from the inspection/interview:

- rats in the attic (no bedbugs were found in the attic),

- tenant in infested unit moved in within the last six months (her personal items did not reveal any transported infestations).

In other words, nothing conclusive could be established.

The treatment

During the interview with the tenant, American Pest Management learned that she vacuumed the infested areas of the apartment every day. This included the bed (stripped to reach the seams top and bottom), the couch (deep between the cushions) and all cracks and crevices on the walls near them. Bedding was washed frequently in hot water (120° F minimum).

Because pesticides were not allowed due to the tenant's medical condition, the firm chose to use the ThermaPure method. This patented, forced hot air process has been used for drywood termite, powderpost beetle and fungus/mold issues in structures (see "Hit 'Em with Heat," Pest Control, January 2001, page 50).

The majority of arthropods will succumb to temperatures of 120° F for 40 minutes. Because the bedbugs hide in tight cracks and crevices, target temperatures of 145° F for two hours were chosen. This was to provide a comfortable margin of error.



A large-capacity, forced-air propane heater (manufactured by Coniflo dba HeatQuip, Santee, CA) was used to heat targeted rooms in the apartment. Thermocouples were placed and monitored remotely with a digital thermometer.

Sensitive items in the unit were moved to rooms not being heated or were covered with thermal wraps to avoid rapid elevations in temperature. American Pest Management took great care to protect personal items in

areas to be treated during the process. In this situation, it took three people about one hour to prep the apartment for heat treatment. Protecting heat-sensitive items is critical when planning and pricing treatment.

Temperatures were monitored every 20 minutes to ensure that surfaces did not get too hot, and to make adjustments for optimum heat. After two hours of treatment, with the air temperature averaging 152° F, the unit was opened up and cooled for about 25 minutes.

Finding a solution

Did this recipe produce a perfect dish? Two weeks later, there were more sightings and bites from bedbugs, but they were greatly reduced (the occupant estimated a 75% to 80% reduction in activity). While not a completely successful treatment, it provided valuable information regarding needed exposure time for heat to kill bedbugs.

Activity was reduced dramatically, so we knew we were going in the right direction. Because it was established early on that the treatment process had not been “proven” with bedbugs and that there may be a retreatment, the tenant was prepared for this possibility. This is critical whenever you deal with something new, however. People will be more willing to work with you where there are no surprises.

American Pest Management set up a retreatment, with the assumption that the initial treatment did not allow long enough exposure to thoroughly treat all of the bedbug harborage. For the second treatment, the technicians increased the exposure time to three hours. Five weeks later, there were still no reported sightings or bites by the tenant.

We can proceed with future treatments with a high degree of confidence that we can remediate bedbugs with heat. We have established a minimum of three hours at a minimum of 140° F for bedbug treatment. This should maximize efficacy and minimize damage from excess heat. It also provides customers with a choice to treat in a traditional manner using pesticides or one without pesticides. This process, offered to a hotel that may have a high incidence of guests from foreign countries, can provide a four-hour treatment of a hotel room. There’s minimum shutdown time, no disturbance of other rooms (heaters sound like a big air conditioner), and little concern about when someone can enter the room after treatment.