

# The Heat is On

By Mark Sheperdigian - Pest Management Professional - November 23, 2009

Heat has been getting a lot of attention lately as a method of eliminating bed bugs. Using heat against insects is not new, but bed bugs add a whole new wrinkle to this unique method of control.

## Fundamentals

Like all insects, bed bugs acquire their body temperature from the environment around them — and like most insects, they can only control their body temperature by moving about. There does not yet seem to be any hard science surrounding the behavior of bed bugs under high temperature conditions, but theories abound.

Some suggest that bed bugs are heat seekers, and actually move *toward* the heat source at the beginning of a heat treatment, thus making themselves more vulnerable than they might otherwise be. On the other side, there are those who think bed bugs are very sensitive to heat and flee the lethal temperatures for the nearest cool spot.

A third theory is that the general survival tactic for bed bugs is to hunker down and weather the storm; only when temperatures approach lethal levels do the bugs begin to actually seek out the safety of cooler quarters.

As research churns out more and more good data, we should begin getting answers to these and other questions in the coming years.

## Where it works best

The biggest advantage of heat is that it finds the bed bugs and their eggs wherever they are hiding. It penetrates layers of fabric, upholstered furniture, boxes of household goods, and even mattresses and bedding. It relieves the pest management professional (PMP) from the task of seeking out every last bed bug and all of their eggs. The heat finds them and "cooks" them all at once.

This is extremely helpful in dwellings where there is a lot of clutter — and perhaps insufficient help to prepare for conventional treatments. There is still a lot of preparation for a heat treatment, but it is less involved than preparing for a conventional treatment. To compound the benefits of heat, preparation for a heat treatment typically needs to be made only once.

## Where it works less

It's not just as easy as turning on a heater and waiting for the temperature to rise, however. There are a number of situations that will bend the advantages in favor of the bed bugs. We noted that heat penetrates many layers of fabric and household goods, but that only goes so far. If there is too much clutter in the environment to allow air movement, there will be cool spots where bed bugs can survive.

In addition, cold exterior walls, especially in cold weather, may provide a haven for the bugs. A concrete slab on grade is extremely difficult to heat up, and a concrete basement can be a heat treatment nightmare.

It may seem that there are a lot of ways for a heat treatment to fail, but the day-to-day reality for the heat crew is generally a high success rate. The take-home message here is that the savvy PMP looks for those jobs that might cause a problem for heat, and take steps to overcome the difficulties. Fans can be used to heat up cold spots. Insecticides can be used to treat other protected areas. It may even be prudent to forego a heat treatment for certain accounts in favor of conventional treatment, fumigation or perhaps a combination of the three methods.

We still have much to learn about the use of heat against this intractable foe, but this much is clear: Heat has earned a position as a starter on our team, and is not just a bench warmer.