

# Update

NPMA LIBRARY UPDATE

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## BED BUGS ARE BACK!

**Get the Latest in Bed Bug Management and a Comprehensive List of Resources and Materials to Help You Fight Them**

Although bed bugs had apparently all but disappeared after World War II, within the past decade bed bugs have made a resurgence and are now being found almost everywhere. Theories as to why we are seeing them so frequently now range from the loss of broad spectrum pest control products to increased travel. The bed bug resurgence has been a topic covered nearly daily by the media, and has been a topic of discussion within the pest management and research communities.

Today, bed bugs are found any place inhabited by humans including hotels, apartments, homes, offices, cruise ships, theaters, as well as any other place that humans congregate. Bed bugs will also feed on other warm blooded animals with the main trigger for feeding appearing to be temperature. Early research shows that even cold blooded animals such as reptiles will become a host if they approximate human body temperature.

### Identification

Adult bed bugs are very small, and so it is important that any specimens be properly identified. Commonly, bat bugs or bird bugs may be mistaken for bed bugs. See the NPMA Field Guide to Structural Pests for proper identification tips. Also, bed bugs may be confused for ticks or small cock-



**FREE**  
resources listed  
inside!

roaches. This can result in customers delaying calling a professional. Bed bugs are quite prolific and multiply rapidly so early involvement is critical. Additionally, this particular type of pest definitely requires the assistance of a pest professional and is not something a homeowner can eliminate on their own.

### Treatment & Management

Successful bed bug management requires the full cooperation of the client to make the treatment most successful, as much must be

done to prepare for a bed bug treatment — furniture must be moved, carpet and tack must be pulled back, and often various pieces of furniture must actually be taken apart to treat them properly where bed bugs are hiding. Educating your clients to keep clutter to a minimum is also of paramount importance with this pest so that there is more opportunity for inspection and treatment. Bed bug eggs and nymphs can occupy the smallest of cracks and crevices.

Treatments are generally very time and labor material intensive to truly rid the account of all bed bugs present. We do know that most bed bug work may require several

visits to an account. Customers must be aware of this.

There are new technologies which are promising additions to bed bug management tools. While steam has been used for quite some time, the use of heat as a control measure has become popular by professionals as an option. While the initial cost for the equipment is high, the results have been impressive. Certain precautions must be taken according to the heat generator manufacturers and care must be used when utilizing this type of service. There are also new control products which have been released or relabeled to include bed bugs. Research has shown that bed bugs can be resistant to certain products but that will vary according to the strain of bed bug. This variation may be one reason why products seem to work in one account and not work as well in another account. Finally, there are several devices for

See page 16 for  
more information on the  
Bed Bug Bundle, available  
at [www.bugstore.org](http://www.bugstore.org)



Adult female bed bug



Adult male bed bug

monitoring bed bugs ranging from traps to basic monitoring devices. These can be valuable for the monitoring step of IPM.

## Mattress Concerns and Mattress Covers

Infested mattresses may be kept or removed from the location to be treated. If kept, they should be encased in a mattress cover. If removed, they should be covered first to prevent spread of bed bugs throughout the facility. Then, once at the dumpster site, they should be destroyed or spray painted or marked in some way to make sure they are not retrieved by another person for future use.

Many furniture rental companies and mattress refurbishers have retrofitted semi-truck trailers to be used as heating chambers for infested furniture and mattresses; heat must be held to a specific core temperature for a specific length of time to be effective in killing all life stages! (Usually these specifics are quoted as 120 degrees Fahrenheit for four hours continuously.)

Keep in mind that some pesticide materials are labeled for mattresses, and some are not.

Although many pyrethroids are labeled for use on mattresses, many pest management companies have policies against spraying a mattress for obvious risk and liability reasons. Always read and follow all label directions.

There are several mattress covers currently on the market. Check to see that the zippered enclosure has some kind of locking mechanism to prevent entry of even the smallest 1st instar nymphs! See your local distributor for the most up to date information on mattress covers.

## The Good News

If there is any good news about bed bugs, it is this. To date, there has been no disease transmission concerns associated with the blood-feeding nature of the bed bug. (Some people do have reactions to the saliva of the bite of the bed bug, not unlike a bee sting or spider bite reaction.) Of course, knowing something is feeding upon you at night does not help one to sleep better.

Since you are the pest professional, your clients may be asking you many questions concerning bed bugs; for these reasons, we felt it would be a good idea to compile an up-to-date list of references for bed bug resources and materials currently available to you as you seek to combat this invasive pest. There are many resources available to the pest control professional on bed bugs. We present here a comprehensive list of references to help you as you tackle this daunting but certainly doable bed bug pest challenge!

## Resources

The following NPMA resources covering bed bugs and their control/management are available online at the Bugstore Resource Center at [bugstore.org](http://bugstore.org):

- Smith, Eric and Richard Whitman. 2007. NPMA Field Guide 2nd ed. (Also translated in Spanish.) – [bugstore.org](http://bugstore.org)
- NPMA poster of bed bugs includes bed bug life cycle, habits and inspection and control strategies (coming soon in Spanish)! This poster is good for technicians and for clients such as the hotel industry and dorm facilities management.
- NPMA DVD on bed bug management tips
- NPMA “Bed Bug Brochures” for clients (Commercial or Residential brochures available in packs of 50.)
- Pinto, L. J., R. Cooper and S.K. Kraft. 2007. Bed Bug Handbook — The complete guide to bed bugs and their control. (This is a very comprehensive reference covering all current methods and materials, both pesticidal and alternative, for bed bug management and control — a must read for all pest control professionals who deal with bed bugs.

### Free Resources Available to NPMA Members at [nmapestworld.org](http://nmapestworld.org)

- NPMA Web site - [nmapestworld.org](http://nmapestworld.org) under Technical Support/Pest Facts/Stinging-Biting/Bed bugs.
- NPMA Bed Bug Model Contract for bed bug treatments — [nmapestworld.org](http://nmapestworld.org) under Technical Support/Model Contracts/Bed Bug Sample Contract. Note:

**FREE  
RESOURCES!**

Most companies offer only a limited or no guarantee for their work at this writing.

- Harlan, H., M.K. Faulde and G. Baumann. 2008. *Bed bugs*. In WHO Public Health Significance of Urban Pests by X. Bonnefoy, H. Kampen, and K. Sweeney. pp.131-154. (Download for free under Technical Support.)

#### Other Book Resources

- Doggett, S. 2007. A code of practice for the control of bed bug infestations in Australia. Visit <http://medent.usyd.edu.au/bedbug/bedbug>.
- Usinger, Robert L. 1966. Monograph of the Cimicidae. Recently reprinted by ESA. Visit [http://www.entsoc.org/Pubs/Books/Thomas\\_Say/ThomasSays.htm](http://www.entsoc.org/Pubs/Books/Thomas_Say/ThomasSays.htm).

#### Good Bed Bug Images

Visit [www.afpmb.org/dpmiac/image-database/toplevel.htm](http://www.afpmb.org/dpmiac/image-database/toplevel.htm) (Armed Forces Pest Management Board Image Library, under bed bugs). Be sure to cite the photographer and Web site for any images used.

#### Recent Research Papers of Interest

##### Topic: Answers to the Bed Bug Issue

Potter, M.F., K.F. Haynes, A. Romero, E. Hardebeck, and W. Wickenmeyer. 2008. Is there a Bed bug answer? *Pest Control Technology* 36(6): 116, 118-124.

##### Topic: Insecticide Resistance in Bed Bugs

Romero, A., M.F. Potter, D.A. Potter, and K.F. Haynes. 2007. Insecticide Resistance in the bed bug: a factor in the pest's sudden resurgence? *J. Med. Entomol.* 44: 175-178.

##### Topic: Uses of IPM with Bed Bug Management

Wang, C., M. Abou El-Nour, and G.W. Bennett. 2007. Controlling Bed bugs in Apartments - A Case Study. *Pest Control Technology* 35 (11): 64,66,68, 70.

##### Topic: Bed Bug Sniffing Dogs

Pfiester, M, P. G. Koehler, and R. M. Pereira. 2008. Ability of bed bug-detecting canines to locate live bed bugs and viable bed bug eggs. *J. Econ. Entomol.* 101: 1389-1396.

#### Monitors/Traps

These traps typically have a carbon dioxide source, a heat source and a pheromone source incorporated into them. Two currently exist on the market (with mixed anecdotal results); another is in development and scheduled to come out this year (2009). See your local distributor for the most up to date information.

#### Good How-to Extension Type Guidelines for Various Clients

- [www.hsph.harvard.edu/bedbugs/](http://www.hsph.harvard.edu/bedbugs/)
- [www.nysipm.cornell.edu/publications/bb\\_guidelines/](http://www.nysipm.cornell.edu/publications/bb_guidelines/)
- [www.ipmctoc.umn.edu/Student\\_Advisory\\_Regarding\\_Bedbugs.pdf](http://www.ipmctoc.umn.edu/Student_Advisory_Regarding_Bedbugs.pdf)

#### A Popular Web Site — [bedbugger.com](http://bedbugger.com)

Your customers have probably seen this; you should too. This blog reports cases of bed bug occurrences almost daily. Bed bug registries for various cities and commercial establishments listed. 

