

# Bed Bugs: A Decade Later and Still Battling the Cute Little Critters

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I think I'm in the minority when I say that bed bugs make the perfect pet. First of all, they are so cute. The nearly transparent first instars with their small red eyes are endearing as they climb on and over (some say aggregate with) the adults, but don't stray very far. We don't need to buy them food, or bring them water, change a litter box, take them for a walk, board them or take them for shots at the veterinarian. We just go about our daily lives and they continue to grow in size and number. While our attitudes towards bed bugs need to change, I guess I'm asking a little too much of you to embrace these as pets.

Can you believe it has been a decade since the bed bug resurgence began and we are still not completely satisfied with our management results? Dini Miller of Virginia Tech suggests that as a society we need to change our bed bug consciousness. I refer to it as bed bug attitude. We were prepared to

deal with bed bugs throughout the first half of the last century: we didn't place a purse or coat on the theater seat next to us, we checked a hotel room before unpacking and tenants' belongings were fumigated before they were allowed to move into a rented apartment.

The media has been playing on people's fear and we've got to change our attitude. We're letting a 1/3 inch long creature push us around and it's about time to fight back. We need to feel empowered instead of helpless.

Dr. Miller has produced three fact sheets for consumers that are intended to heighten awareness about the bed bug problem and not to create paranoia. I list them here because I think your clients, and probably your technicians, would benefit greatly from reading them.

Bed Bug Prevention Methods.

<http://www.vdacs.virginia.gov/pesticides/pdf/files/bb-prevention1.pdf>

Non-chemical Bed Bug Management.

<http://www.vdacs.virginia.gov/pesticides/pdf/files/bb-nonchemical1.pdf>

Bed Bug Treatment Using Insecticides.

<http://www.vdacs.virginia.gov/pesticides/pdf/files/bb-treatment1.pdf>

I hope many of you had the opportunity to attend the National Pest Management Association's PestWorld 2010. Several sessions provided information about bed bugs. While I was unable to attend, I did have someone from my lab in attendance. Here are some of the bed bug updates that may be of interest to PMPs. It would be advantageous for you to look through Drs. Kells' and Miller's Powerpoint presentations which are available online if you attended the meeting.

- Steve Kells from Minnesota indicates that adult bed bugs require exposure for 20 minutes at 118F or 90 minutes at 113F to die. Bed bug eggs require 7 hours at 113F, 49 minutes at 118F and 0 minutes at 122 F to die. Although these are higher lethal temperatures than others have reported, heat susceptibility is still considered the Achilles heel of bed bugs.

- When exposed to heat via conduction (from a heated surface), bed bugs started moving at 80F, stop feeding at 95F and had escape behavior movement at 105F, that is, before they reached the lethal limit. When exposed to convection heat (heated air), the bed bugs moved immediately, did not feed and did not begin escape behavior movement until it reached 118F, their lethal limit. Insecticides applied around a room perimeter could counteract the conduction problem.
- Steve uses a hand-held infrared thermometer to ensure surfaces heated by a steamer attachment reach 160 – 180F immediately after the brush passes the surface. Attachment movement speed is adjusted according to the thermometer readout. It is no longer recommended to place a towel over the surface of the steamer attachment, as it decreases steam penetration. The small, single, round hole nozzle attachment may blow bed bugs away before killing them. Be careful with microfiber, silk and other sensitive surfaces.
- For companies relying on insecticides only, use three formulations - a residual, short-acting and dust. Cutting corners will result in callbacks.
- From the ***Bugs Without Borders: Battling Bed Bugs in the US and Beyond*** session
  - **Dr. Dini Miller's** summary:
    - *Bed bugs may well be with us for a long time due to insecticide resistance, no new actives and the cost of control.*
    - *We'll need to develop long term action plans for customers to keep costs down because current costs are not sustainable, and even the most affluent customer will not be able to afford many repeat treatments.*
    - *Apartment managers do not understand pricing and need you to explain it to them in terms of labor hours.*
    - *If you are going to be in the bed bug business, become an expert.*
    - *Know all of your costs and make your sales and technical force aware.*

- *Know when to walk away.*

- **Dr. Mike Potter, University of Kentucky**, covered the information in his new NPMA co-authored publication, ***Bugs Without Borders: Defining the Global Bed Bug Resurgence***. If you are an NPMA member, you can access this publication online at <http://www.npmapestworld.org/members/secureDocument.cfm?docID=158>. In the survey, 95% of PMPs indicated they had encountered bed bugs in the past year. In the US, 76% of PMPs thought the bed bug was the most difficult pest to control compared to ants, termites and cockroaches. Bed bugs were not the most difficult to control in other areas of the world where organophosphates and carbamates are still available for bed bug control. In addition to the survey findings, Potter mentioned that Phantom Aerosol is providing contact kill and provided faster kill than a water-based version of chlorphenapyr. Temprid also provided good contact kill.
- **Stephen Doggett, Department of Medical Entomology, Australia**, evaluated the ActiveGuard Mattress Liner impregnated with permethrin. When control mortality was taken into account, the liner only caused 20% bed bug mortality. A *Code of Practice for Bed Bug Infestations in Australia* is a document that encourages best management practices for eliminating and preventing bed bug infestations. Because this document seeks to keep information up-to-date, regular input is sought. Practices/technologies/products are included if efficacy has been provided or potential limitations are explained. This document is now in the 6th edition since 2006 and is available online at ([www.bedbug.org.au](http://www.bedbug.org.au)).

Be on the lookout for a Tennessee PMP bed bug meeting in February of 2011.