Protecting Yourself From Bed Bugs

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2012 Top Bed Bug Cities Based on Treatments

1. Chicago
2. Detroit
3. Los Angeles
4. Denver
5. Cincinnati
6. Columbus
7. Washington, D.C.
8. Cleveland/Akron/Canton
9. Dallas/Ft. Worth
10. New York
11. Dayton
12. Richmond/Petersburg
13. Seattle/Tacoma
14. San Francisco/Oakland/San Jose
15. Raleigh/Durham/Fayetteville
16. Indianapolis
17. Houston
18. Milwaukee
19. Baltimore
20. Syracuse
21. Boston
22. Colorado Springs/Pueblo
23. Lexington
24. Miami/Ft. Lauderdale
25. Atlanta
26. Dayton
27. Chicago
28. Detroit
29. Boston
30. Philadelphia
31. New York
32. Los Angeles
33. San Francisco
34. Houston
35. Austin
36. Dallas
37. Denver
38. Phoenix
39. Seattle
40. Portland
41. San Diego
42. Portland
43. Charlotte
44. Memphis
45. Nashville
46. Las Vegas
47. Greenville/Spartanburg/Asheville

Bed Bugs – Biology & Control

August 2013
What Is a Bed Bug?
• aka, “Chinches”, “Red Coats”, “Chinch Bugs”
• Small (3/16” long) broadly oval, flat, reddish-brown color
• Piercing-sucking mouthparts

Bed Bugs & Their Relatives
• Bed bug - Cimex lectularius
• Bat bug - Cimex adjunctus
• Chimney Swift bug – Cimexopsis nyctalis
• 16 Cimex species in the U.S.
  – Bats – 9 species
  – Birds – 10 species
  – Humans – 3 species

A Bed Bug’s Life
• Female lays 200-500 eggs in batches in cracks and crevices. Eggs hatch in about 10 days
• Nymphs (immatures) take about 35-48 days to become adults

A Bed Bug’s Life
• Require a blood meal (lasts about 5-10 minutes) in order to molt and for females to lay eggs
• Can survive 80-140 days without a blood meal
• Adults often live 6-7 months.
• Critical temperatures:
  Low: 55°F
  High: 112°F

Bed Bugs & Disease
• Literature: plague, yellow fever, TB, relapsing fever, leprosy, leishmaniasis, smallpox, Chagas’ disease - Lack of definitive evidence
• HIV – detected up to 8 days after ingestion of highly concentrated virus (experimental meals)
  • No replication or virus found in feces
  • No mechanical transmission

Bed Bugs & Disease
Hepatitis B
• Hepatitis B DNA detected in bed bugs 6 weeks after feeding on infected blood.
• No replication
• BB Eradication had no impact on Hepatitis B rates
Bed Bugs – Biology & Control

Bed Bug Do…….

CRAWL
- 20 ft. in search of a “meal”
- Use conduit/utility pipes to move between areas

HIDE
- in cracks and crevices, often (but not always) in groups.

HITCH-HIKE
- Bags/backpacks/luggage
- Furniture

Bed Don’t ……

- Discriminate based on socio-economic status, but lack of money often means lack of control (ability and effort)
- Indicate unsanitary conditions (but unsanitary conditions complicate spread & control)
- Fly, jump, or burrow into the skin


Jeffrey Hahn, University of Minnesota
Laurel Hansen, Spokane Falls CC
Craig Hollingsworth, University of Mass.
Brad Kard, Oklahoma State University
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August 2013
“What is the oddest location where bed bugs have been found?”

- Make-up drawer
- Kitchen, bathroom
- In the shower head
- In a car
- Radios and stereo speakers
- Around a fireplace
- Telephone
- Children’s toys
- On the person
- In luggage
- Sofa or couch
- On a pool table
- In a microwave oven
- In an old man’s ears

Bed Bug Hiding Spots

- Mattress: 34.8%
- Boxspring: 22.4%
- Frame/Headboard: 13.4%
- Baseboard Areas: 11.4%
- Couch/Chair: 7.3%
- Nightstand/Dresser: 6.2%
- Walls/Ceiling: 3.1%
- Other: 3.1%

Source: Potter et al. – University of Kentucky

Signs of bed bugs

- Blood spots
- Shed skins
- Dead bed bugs
- Live bed bugs
- Eggs
- Sweet odor (heavy pop.)

Source: Potter et al. – University of Kentucky
Furniture

Other Bed Bug Critical Areas

Clutter – A Bed Bug’s “BFF”

Sanitation
Medical Facilities

Evidence Lockers

• You need to adjust your procedures for handling potentially infested items (including people)
• Can anything be done with infested items?

Got Bed Bugs?
What’s Your Game Plan?

- “Prevention”
- Confirmation
- Inspection
- Containment
- Elimination

Bed Bugs Can be confused with...

- Ticks
- Cockroach nymphs
- Bat bugs
- Carpet beetles
- Other kinds of bug bites

Bed Bug – Identification

Bites are not reliable as the sole means of determining a problem

Body Lice & Scabies

Handling Potentially Infested Items

- Plastic sheeting on seats?
Heat Treatment

- Wash (or dry-clean) items (if dry cleaner accepts them)
- Place in dryer on high setting for 30 minutes (don’t pack dryer full of items)

Detecting Bed Bugs

Homemade Detection Devices
Carbon Dioxide Sources

- Dry ice - Potential hazard around children and pets
- Need a point source (not flood the area with CO₂)

Homemade Detection Devices
Carbon Dioxide Sources

- Sugar-Yeast Trap
  - 5 tbs of sugar
  - 1 tbs of yeast
  - 24 oz of water

- Place in a suitable open container and on an inverted pet food bowl
PackTite™ Heating Unit

- Portable and easily set up
- Useful for items that can’t be put into a clothes dryer (shoes, equipment belts and other gear)
- Not suitable for some items (ammunition, pepper spray or other compressed gas cartridges/containers)

Bed Bug Treatment

- Use "Sterifab" or similar product or steam on automobile seats suspected of having bed bugs.
- Kills on direct contact only

Nuvan Strips

- DDVP ("vapona")
- Use only in confined areas (closets) and in rooms that occupied less than 4 hours daily
- Use with storage containers
- Question again about affect on evidence

Heat Treatment

- Not simply a matter of raising the room temperature with HVAC
- Core temperature must reach 113°F
- Would it affect evidence in storage (e.g., biological samples)?
Prevent The Spread of Bed Bugs

• Disposal of mattresses and box springs is an option.
• Remove from residence carefully
  – Wrap in plastic sheeting
  – Render useless or make sure they’re removed from property immediately

Travel Advice

• Keep luggage off beds & floor
• Don’t use hotel dressers to store clothing

Travel Advice

• Look for signs of bed bugs BEFORE you unpack and settle in

Be Careful With Used Furniture

When in doubt:

BAG IT & CONTAIN IT

If you think you’re bringing “guests” home:
• Isolate “infested” items
• Wash and dry (if possible)
Silver Bullets

YES

NO

NO

YES