

Bed Bugs suck – *no*, literally!

IPM meets Bed Bug challenges



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HOT OFF THE PRESS

December 8, 2017, Beyond Pesticides

*Least-Toxic Oil-Based insecticides Show Promise for **Bed Bug Control**, But Non-Toxic Practices Remain the Best Solution*

According to a study (published, Dec 06, 2017) in the [Journal of Economic Entomology](#), less toxic oil-based insecticides are showing promise for the treatment of bed bugs. The common bed bug has seen a significant resurgence in the U.S., and with the pests [found to be resistant](#) to a broad range of modern, toxic insecticides, pest control operators are searching out new, safer ways to manage infestations.

“So far there are no reports of resistance to these oils,” said study author Changlu Wang, PhD to Entomology Today. “It is very difficult for insects to develop resistance to them since they are not neurotoxins.”
[Follow link to continue reading the study](#)

The IPM in Health Care Facilities Project recommends an integrated approach to bed bug management that focuses on cultural practices first and foremost.

This includes eliminating clutter where the bugs can hide, encasing and isolating certain furniture, thorough vacuuming, caulking and sealing cracks and crevices around bed frames, floors, walls, baseboard edges, and moldings, and laundering fabrics and clothing.

Heat and steam treatments are good options that are generally effective at eliminating bed bug infestations.

IPM in Health Care Facilities Project

Winter 2018



[Journal of Economic Entomology, Oxford Academic](#), published December 06, 2017

2018 IPM GOALS
Your facility-wide policy embodies the principles of Integrated Pest Management –

Is Your Team on Target? Now is the time to review and set GOALS!



Did You Know....

Another least-toxic method that might be useful in controlling bedbugs is the use of [neem oil](#), which can be sprayed on carpets, curtains and mattresses.

BED BUGS DO NOT DISCRIMINATE AND ARE FOUND IN BOTH SANITARY AND UNSANITARY CONDITIONS.

IPM – Communication Matters

It's vital to take proactive measures and work with your Pest Management Professional. Talk with your vendor and share this list of [chemicals to avoid when managing bed bugs as they are linked to adverse health impacts and can confuse the medical assessment of a patient exposed to pesticide residues.](#)

KEY:

A = acute health effects
B = bee poison
C = chronic health effects,
GW = ground water contaminant
LT = long-range transport
SW = surface water contaminant
W = wildlife poison

[Acetamiprid](#) (A,C,B)

[Allethrin](#) (W,B)

[Bifenthrin](#) (A,C,SW,W,B)

[Chlorfenapyr](#) (A,C,W,B)

[Chlorpyrifos](#) (A,C,SW,GW,W,B,LT)

[Cyfluthrin](#) (A,C,W,B)

[Cypermethrin](#) (A,C,W,B)

[Deltamethrin](#) (A,C,W,B)

[Esfenvalerate](#) (A,C,W,B)

[Fenvalerate](#) (C,W,B)

[Imidacloprid](#) (A,C,W,B)

[Lambda-cyhalothrin](#) (A,C,W,B)

[Permethrin](#) (A,C,GW,W,B)

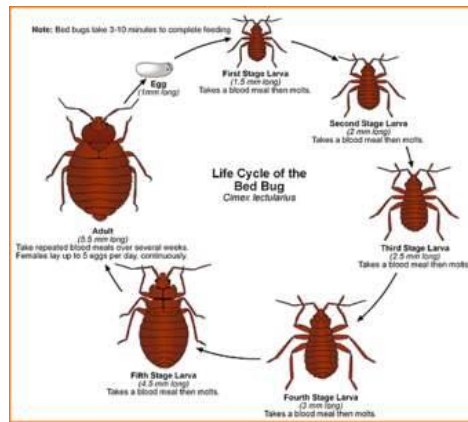
[Piperonyl butoxide \(PBO\)](#) (C,W)

[Propoxur](#) (WB)

[Pyrethrins](#) (C,W,B)

[Resmethrin](#) (W,B)

[Thiamethoxam](#) (C,B) *Bed bugs can be controlled through a comprehensive strategy and incorporates a variety of structural and mechanical methods, monitoring, sanitation and non-chemical and least-toxic treatments.*



Bed Bugs: Don't Panic

(1) Do Not Transmit Disease

(2) Can Be Controlled without Harmful Pesticides

(3) Bed bugs and their eggs are most often found in cracks and crevices of bed frames; and along the seams of mattresses, or within box springs.

(4) In more established infestations bed bugs move further from the bed and can be found in:

- cracks in the floor
- plaster or ceiling moldings
- drapery pleats, upholstery of sofas or chairs
- inside clocks, phones, televisions and smoke detectors

IPM PLAN:

Train Your Staff Not to Panic

Prevent and Manage

Before attempting any other management methods and especially before considering using a chemical control, do the following:

***Eliminate Clutter**

Clutter creates areas for the bed bugs to hide, making eradicating them extremely difficult. When efforts to manage bed bugs fail, it is almost always due to clutter and lack of cooperation with key prevention and follow-up instructions.

***Vacuuming**

Thorough vacuuming will get rid of any visible bed bugs along with any dirt that provides them shelter, helping to reduce populations. In

vacuums with a removable bag, seal and discard it after using. Additionally, it is best to choose a vacuum attachment that does not have bristles or brushes. Scrubbing infested surfaces with a stiff brush will help dislodge eggs and using a powerful vacuum will help remove them from cracks and corners.

***Caulk and Seal Crevices**

Fill cracks, crevices, nooks and crannies in bed frame, floors, walls, edge of baseboards and moldings with sealant.

WHEN TREATMENT IS NECESSARY

***Steam Treatments**

Steam treatments, when properly applied, will kill all stages of bed bugs. Proper application includes using low moisture or “dry” steam from a commercial unit with a floor and upholstery attachment, moving the nozzle over the bed bugs at a rate of 20 seconds per linear foot. If it is applied with too much pressure, the bed bugs will be blown away. In order to diffuse the pressure an upholstery nozzle can be wrapped in a piece of fabric.

It is important to note that many, if not most, pest management companies have steam units available. Ask your current vendor if they have this equipment available and request that they use this bed bug treatment!



A Telltale Sign of Infestation

Bed Bug Skins

* LAST RESORT – IPM Least-Toxic

1. Open wall voids and treat with sodium borate or food-grade diatomaceous earth.
2. Wear a dust mask when handling powder formulations.
3. Seal void completely.
4. Clean vacuumed areas with diluted sodium borate (2 oz. per quart of water).
5. Insist on heat treatment from your pest management company, because spraying for bedbugs is hazardous and generally ineffective due to resistance.

*Bai, Xiaodong, et al. Transcriptomics of the Bed Bug (*Cimex lectularius*). PLoS ONE 6(1): e16336.

Schedule your Bed Bug Presentation Today:

Bed Bugs – Don't Panic Information Presentation and Staff Training Review



Email:

GNavarro@beyondpesticides.org

Want to learn more about the health and environmental effects of pesticide ingredients follow link to the **Beyond Pesticides Pesticide Gateway**, (www.beyondpesticides.org/gateway) or call the office 202 543 5450 email for assistance. info@beyondpesticides.org



The IPM in Health Care Facilities Project provides **FREE** pest management log reviews to help you identify pest conducive areas and safe pest management alternatives

Is your Bed Bug Protocol Causing More Harm?

1. Confirming a bed bug infestation is the first step toward controlling them. When bed bugs are suspected, specimens should be collected and submitted to entomologists or pest management professionals qualified to identify them. **Caregivers, launderers, maintenance, housekeeping staff, and others should be trained to recognize and report bed bugs and their signs.**
2. Without specimens identified as bed bugs, a report of suspected bites does not necessarily mean a facility is bed bug infested. While skin markings may be consistent with bed bug bites (often circular, inflamed and somewhat linear in arrangement), other biting arthropods and environments and medical conditions can produce similar markings. Visible reactions may not appear for two weeks after the bite. Many people show no skin markings at all, and the elderly and immune-compromised are known to experience lesser reactions to bites.
3. When bed bugs are suspected or

confirmed, staff should immediately and directly notify your designated authority for the facility. Reports passed "up the chain" may not get to a person with the authority to act, and the longer an infestation goes unchecked, the more costly it may become. **Your pest management company should inspect and treat using approved IPM strategies as needed in areas where bed bugs are suspected as well as all rooms adjacent, above and below.**

4. When bed bugs are discovered on a patient, if possible the patient(s) should be bathed or showered, clothes changed, and transferred to another room. **Bedclothes should be carefully removed, tightly sealed in bags, put directly into washer or dryer and dried on the hot setting for at least 20 minutes to kill all stages of bed bugs.**

5. Seal potential bed bug access points to adjacent rooms, by filling gaps that occur where plumbing penetrates common walls and around electrical, cable and phone outlets.

6. **Waiting rooms, visitor lounges, common areas, laundry rooms, and equipment such as wheelchairs and food carts, should be regularly inspected for bed bugs**

NOT SURE...Go to the Gateway

Beyond Pesticides created a database tool intended to provide decision and policy makers, practitioners, and activists with easier access to current and historical information on pesticide hazards and safe pest management.

3. When bed bugs are suspected or



Quick IPM Bed Bug Check-List:

Non-chemical and mechanical controls

- ✓ Seal cracks and crevices
- ✓ Create a barrier
- ✓ Remove Clutter
- ✓ Vacuum
- ✓ Steam Treatment
- ✓ Heat

Product to try

Native Organics' Bed Bug Killer

The IPM in Health Care Facility Project has provided sample Bed Bug Killer spray from Native Organics to Baltimore families through our New Mom Program for years.

Native Organics does what others claim to do: They kill bed bugs and keep them away. Virtually odorless and complies with the EPA's designation of "Generally Regarded as Safe."

[Read more](#) about Native Organics' Bed Bug Killer ingredients and how to effectively eliminate the pests!



FAQ's – [Can I buy Native Organics products for commercial use?](#)

ABSOLUTELY!

PESTICIDES AND PUBLIC HEALTH

Synthetic Pyrethroid and Respiratory Disease Link

Pesticides, especially **synthetic pyrethroids** used for bed bug management can precipitate or exacerbate respiratory tract disorders. Several pesticides are known sensitizers and can result in respiratory allergic reactions such as **asthma**.

Overexposure to pesticides can cause cholinesterase inhibition, resulting in bronchoconstriction, increased airway secretions, and respiratory distress.

Pesticides and Asthma in Children

Asthma rates among children have reached epidemic proportions; rates have nearly doubled over the past two decades. Maryland's asthma rates, particularly in Baltimore, are among the highest in the country!

Did You Know --

IPM also supports several **Environment of Care standards required for accreditation by the Joint Commission** on Accreditation of Health Care Organizations (JCAHO) by helping hospitals

- 1) "Manage safety risks,"
- 2) "Establish and maintain an appropriate environment."
- 3) "Improve the environment"

First, Do No Harm

By eliminating toxic chemicals, you and your team create a safer environment for patients and staff!

Motivate Your Staff

Modeling how things could be done better is a far superior way to get a point across than saying something.

Science is for Sharing and Making the Right Choice to Support IPM.

The ABCs of IPM

IPM is an environmentally friendly, common sense approach to managing pests. It's *Smart*, *Sensible* and *Sustainable* approach to pest management.

Smart because IPM creates a safer and healthier environment by managing pests and reducing patient, visitor, and staff exposure to pests and pesticides.

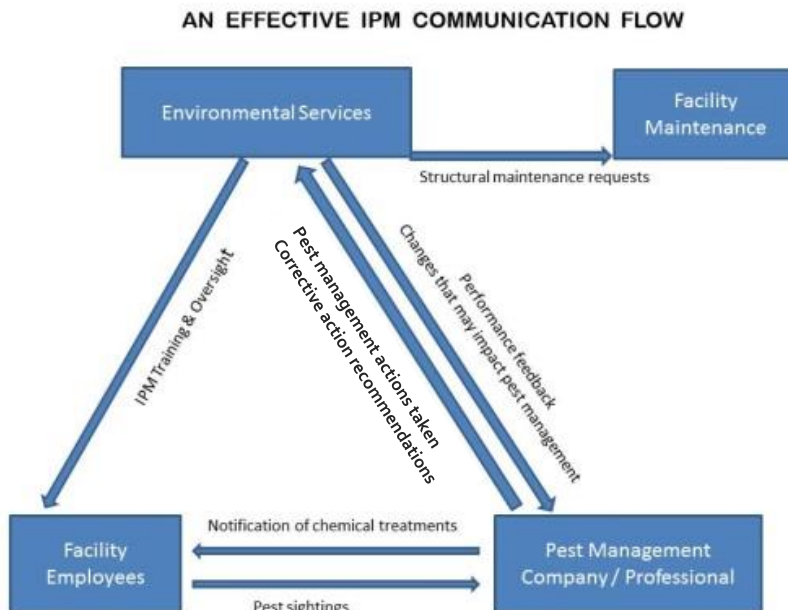
Sensible since practical strategies are used to reduce sources of food, water and shelter for pests in facilities and grounds.

Sustainable because the emphasis is on prevention, this makes IPM an economically advantageous approach.



Flipping the script for 2018

Creating an effective IPM Communication Flow is a prerequisite for success. Consider adopting this “bird’s eye view” of an effective IPM communication flow:



10 Step Guide to Implementing an IPM Program

1. Understand IPM and its advantages over other pest control methodologies
2. Identify the IPM Implementation Coordinator
3. Identify your IPM Implementation Team
4. Establish an IPM policy and plan to ensure sustainability
5. Analyze current housekeeping, maintenance and pest management practices.
6. Establish a system of regular IPM inspections
7. Make it clear that least-toxic chemicals will be used only as a last resort. [Request Least-Toxic List](#)
8. Establish communication protocols for Environmental Services, Management and Service Provider.
9. Provide IPM training and review IPM Plans and Policies with your team.
10. Rank progress and reward success.

IPM Resources

- [Sample IPM Policy](#)
- [Sample IPM Landcare Policy](#)
- [Sample IPM Contract](#)
- [IPM Rounds Checklist](#)
- [IPM Bed Bug Protocol](#)

For more information on how to implement an effective IPM Program – contact the [IPM in Health Care Facilities Project](#)



IPM in Health Care Facilities Project News

1209 N Calvert Street
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Interested in learning
how your facility can
participate in our IPM
in Health Care
Facilities Project?

Contact [Gina Navarro](#)
443-465-4845

Additional Resources:

[Lawns and
Landscapes](#)

Take a Course –
[Organic Land Care
Basic Training](#)

Be in the KNOW...

The Science Behind Synthetic Pyrethroids:

Currently, EPA classifies permethrin, a synthetic pyrethroid, as “**Likely to be Carcinogenic to Humans**” based on observations of tumors in male and female mice.[\[1\]](#)

A recent study reports synthetic pyrethroids, like permethrin can negatively affect neurobehavioral development in children by age six.[\[2\]](#) Associations with attention deficit hyperactivity disorder (ADHD) in children and young teens[\[3\]](#) and increased risk of autism[\[4\]](#) have been observed.

**There are effective IPM strategies and alternatives
Email [Today](#) or Search the [Beyond Pesticides Gateway!](#)**

[\[1\]](#) USEPA. 2017. Permethrin: Human Health Draft Risk Assessment for Registration Review. Office of Pesticide Programs. Washington DC

[\[2\]](#) Viel, JF, Rouget, F et al. 2017. Behavioural disorders in 6-year-old children and pyrethroid insecticide exposure: the PELAGIE mother–child cohort. *Occup and Environ Med.* 74(4) <http://dx.doi.org/10.1136/oemed-2016-104035>

[\[3\]](#) Wagner-Schuman, M, Richardson, JR, Auinger, P et al. 2015. Association of pyrethroid pesticide exposure with attention-deficit/hyperactivity disorder in a nationally representative sample of U.S. children. *Environmental Health.* 14:44 <https://doi.org/10.1186/s12940-015-0030-y>

[\[4\]](#) Shelton, J, Geraghty, E, Tancredi, DJ et al. 2014. Neurodevelopmental Disorders and Prenatal Residential Proximity to Agricultural Pesticides: The CHARGE Study. *Environ Health Perspect*; DOI:10.1289/ehp.1307044

Next Issue: Spring 2018

IPM Project's Member Health Care Facilities Share Their Tips for Successful IPM Implementation

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IPM Resources, Tools, Training and Presentations

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