

Welcome to: No More Prep! A Progressive Approach to Bed Bug Preparation



White Mantis

Find handouts and the recording for today's session at:

<http://stoppests.org/go/noprep>

The webinar will start shortly, while we wait, please tell us in the chat:
What's your name?
Where are you from?

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No More Prep! A Progressive Approach to Bed Bug Preparation



- StopPests is a program of the Northeastern IPM Center of Cornell University, funded by HUD's Office of Lead Hazard Control and Healthy Homes.
- We provide free IPM training and consultation
- Products, vendors or commercial services pictured or mentioned are illustrative, not endorsements.

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Introductions



White Mantis

- Jeffrey White, White Mantis Consultants, Natural Pest Control in the Philadelphia market
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To Prep or Not to Prep...

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Agenda

- Introduction
- Bed bugs and social distancing – what's the news across the industry?
- Where is the bed bug issue heading?
- Inspection and monitoring for bed bugs
- What tools are available to construct a good bed bug protocol?
- Prep for bed bug job...necessary or not?

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Summary – Big Picture Thoughts

- Low-bid pest control will get you nowhere – make sure your RFP will actually solve problems
- Prep for the sake of prep should be an orange flag
- Hoarding and extreme clutter there are no easy answers for
- Be able to identify clients that simply can't participate and provide them help at some level
- 5-10% is a warning...entire building inspection may be necessary
- This isn't about "tag you're it" with a provider...you have to play a role

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Bed Bugs Before WWII

- Bed bugs were a significant pest before WWII
- Many of the same trends you see today are history repeating itself
- DDT is introduced to the public around the end of WWII
- Within 5-10 years bed bugs virtually disappear from developed countries



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The Resurgence

- Bed bugs begin appearing around 2000
- By 2005 they are becoming a common problem
- The media frenzy occurs in 2010
- All 50 states are dealing with issues
- No one truly knows what caused the resurgence

Chicago Tribune | eNewspaper | Obituaries | Alerts | What to buy | Subscribers

Summit bites back at bedbugs

By Robert McCappin
Chicago Tribune • September 21, 2010

You can cook them or freeze them. Poison them, stab them with a screwdriver or smear them on the wall. People have tried all these tactics and more, but bedbugs continue to thrive and spread across the country, experts say.

An entire industry emerged Tuesday to offer suggestions for controlling the bloodsucking parasites at the first-of-its-kind BedBug University: North American Summit in Rosemont.

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How Do People Get Bed Bugs?

- Bed bugs hitchhike from one location to another
- Infested furniture is probably the most common way
- Hotels get a lot of attention but aren't as common as you think
- Although rare, you can pick bed bugs up in public settings



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Residential/Apartments

- Most significant impact bed bugs have had has probably been on the multi-family housing industry
- Some communities can have widespread issues
- Balancing the cost of treatment and the responsibilities of the tenant and management can be difficult



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Hotels

- Were never the issue the media made them out to be
- In your big-brand hotels, data suggests 1-2% have an issue at any given time
- People get very upset when it happens and are loud about it...but it's not as common as many think



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Offices

- Bed bugs were an issue for offices in major cities
- The traditional office may never return to what it was due to CoVid
- Most new hires are looking for flexible hours and work locations
- Customer service call centers barely exist anymore



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Other Public Settings

- Schools have sporadic issues
- Hospitals/doctors offices also have sporadic issues since they can't deny clients service
- Public transportation has issues in certain communities
- Commercial airlines are an industry to keep an eye on



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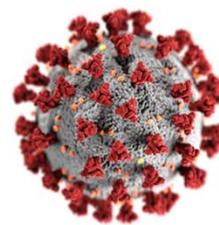
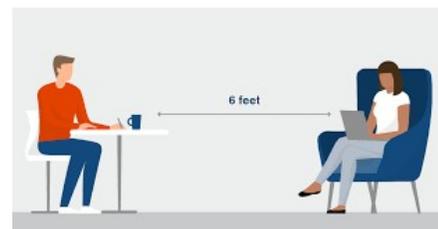
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Bed Bugs and CoVid

- Bed bugs obviously don't get CoVid...although we wish they would
- Social distancing has hugely impacted the flow of bed bugs
- Extent of the impact can be regional and company by company



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Where is the issue heading?

- Quite honestly....your guess is as good as mine!
- Every time we all think we know where this issue is going something changes the path
- Not only do people need to go back to life pre-CoVid but we will then need to give it time for populations to build
- Most experts think it will be a few years before bed bugs look like pre-CoVid levels again...and that's from when CoVid relaxes

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Bed Bugs and Affordable Housing

- Rutgers and many other universities have extensively researched bed bugs in affordable housing communities
- Rutgers surveyed 2,372 apartments in North Jersey
- Buildings ranged from 3-30% infested
- Average was 12.3% of apartments have bed bugs
- Many of your most heavily impacted buildings are high-rise structures in inner-city settings

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The Issue is Silence

- In high-rise, senior living buildings, over 70% of residents are unaware they have bed bugs
- The most problematic apartments are those where no one reports the issue
- Shame and mental health issues are usually the problem



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Problem Solving



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Problem Solving



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Problem Solving



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Problem Solving

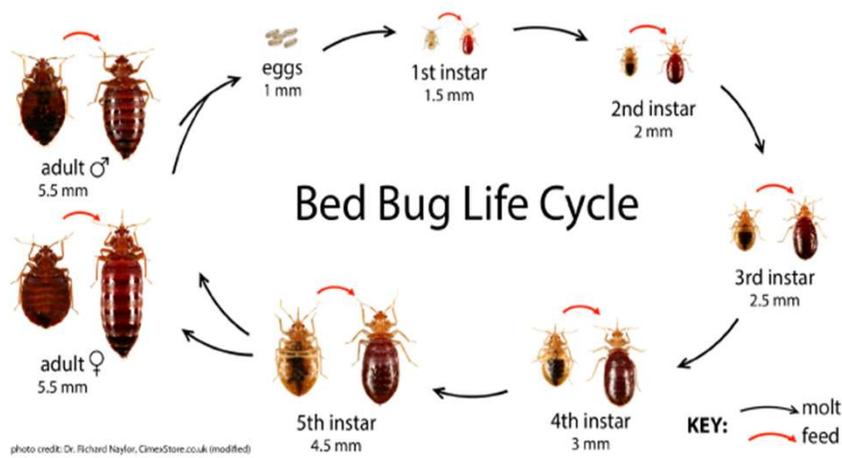


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Bed Bug Life Cycle



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Bed Bug Basics

- Egg to Adult
 - 64 degrees in 60 days
 - 82 degrees in 14 days
- Females can lay 1-3 eggs per day (on average)
- Eggs hatch in 7-10 days but it is temperature dependent
- Blood is the only food source
- Impossible to say how long an infestation has been present

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Signs and Symptoms

- Finding the bugs themselves
- Spotting/fecal material is the best indicator
- Cast skins may also be found – may be confused with other insect evidence
- Bites provide clues but aren't definitive



Credit: Richard Cooper

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Bed Bug Bites

- Not everyone reacts
- About 30% don't react at all
- Those that react often react differently from one another
- Seniors often don't react at all
- Easy to confuse with other reactions
- Can't tell the source of a reaction by appearance



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Bed Bugs and Disease

- Bed bugs have not been shown to have the ability to transmit disease
- Many often feel the disease they transmit is the psychological reaction
- Mental health issues associated with bed bug infestations is quite common
- Infections and scarring associated with itching the bites is a common side effect

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Inspection and Monitoring



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Mark, Release, Recapture Study

- 6 apartments
- 4 occupied and 2 vacant
- Bugs were captured, painted different colors and then released
- Monitors were checked every day for 14 days and data collected



Credit: Richard Cooper

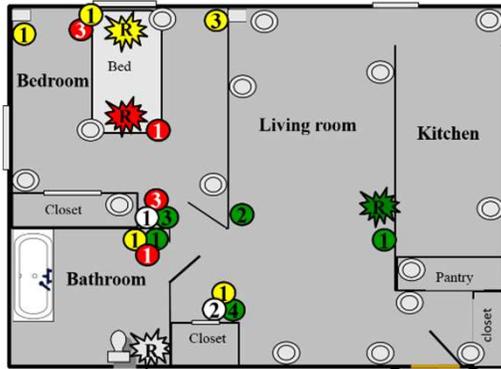
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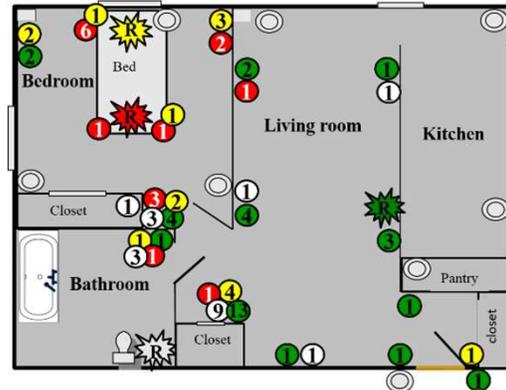
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Results

24 Hours



14 days



Credit:
Richard
Cooper

**Bed bugs found in surrounding
apartments within 3 days of release**

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Why Do We Monitor and Inspect?

- To detect a new infestation
- To assess the extent of the infestation
- To evaluate our control efforts, especially on follow-ups
- To determine when the infestation has been eliminated



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Where Should We Inspect?

- Sleeping areas have the highest probability of infestation:
 - Beds – mattress and box spring
 - Couches
- Nightstands are also high risk
- If you can't confirm bed bugs in the high risk areas, it's unlikely bed bugs are present
- Consider monitors to help identify odd situations



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Interception Devices

- Interception devices can detect 80-95% of infestations within two weeks of installation
- Under-the-leg devices may be best as part of bed bug treatment
- Stand-alone may be best for proactive monitoring



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SenSci ActivCR and Volcano

- Bed bugs are attracted to CO₂, heat and chemicals on the surface of the skin
- ActivCR mimics sweat
- As bed bugs move around they detect the attractant and it increases the chance they enter the monitor



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Bed Bug Detection Dogs

- While fewer companies are offering canine scent detection, there are still companies that are offering it
- Effectiveness can differ by company – find a company you trust
- Confirm what the canine is saying
- Can be a good option for public settings and other unique environments



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Building a Bed Bug Protocol



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Before You Start...

- Evaluate the infestation
- Not all infestations are the same
- Low Level – 20 bugs or less (70%)
- Moderate Level – 21-100 bugs (20%)
- High Level – over 100 bugs (10%)
- Not all highs are the same...some are manageable and some are pure chaos

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To Prep or Not to Prep...



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Why do we prep...

- An organized room allows us to move faster
- We can't treat personal belongings
- Some apartments are so cluttered we can't move
- What if bed bugs are in the clothes? The only way to deal with them is to launder the clothing
- Some of the furniture is old and may fall apart
- A million other reasons...

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It's not a Black and White world...

- Prep doesn't have to be all or nothing
- Evaluate the situation and where bed bugs are being found
- Make targeted recommendations
- Most infestations won't even require prep...bugs aren't in the clutter
- Use limited/no prep as a marketing/sales tool



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In a study of 114 bed bug infested apartments (most in affordable housing buildings), Rutgers University solved 95% of the infestations with no involvement from the tenant.

Wang et al, PCT 2014 and Cooper et al, Pest Mangmt Sci 2015

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What Tools Should You Consider

- Pesticides – Liquids and Dusts
- Vacuums
- Steamers
- Encasements
- Interception Devices
- Etc....



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Liquid Residuals

- Resistance is a factor but you should still be using a liquids
- Dual-action products are the most popular choices
- Rotation is key as you never know what resistance you will encounter
- Liquids don't always kill through residual – get to the bug!



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Dusts

- Applying dusts to cracks and crevices may be the most important step in a bed bug protocol
- Cimexa is an extremely popular product
- Many other dusts are available
- What equipment are you using to apply the dust?



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Vacuums

- Can be used to remove large numbers of bugs in a short amount of time
- HEPA filters are ok but tough to empty
- Bagged vacuums may be a more convenient option
- Removing the bugs is better than "spray and pray"



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Steam

- Used to kill bed bugs and eggs on contact
- Most useful with upholstered furniture
- Not used on every job – often only used for 5 minutes
- Great tool to have when needed



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Encasements

- Used to lock bugs in and keep bugs out
- Most helpful for the box spring
- Treating box springs can take excessive time and is prone to failure
- Also used to protect bedding and salvage bedding
- Sizing can be an operational challenge
- Can shorten the length of jobs



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Interception Devices

- Capture bugs as they travel to and from the bed
- Can be used as part of a bed bug service to reduce activity and provide information on where the bugs are coming from
- Critical in making no-prep work well
- Use the bugs behavior against them!



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AprehendTM
Ready to use

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Biopesticides

- A form of pesticides based upon micro-organisms or other naturally existing active ingredients
- Biopesticides are subject to special rules when registering the product with the EPA
- Many different forms of biopesticides:
 - Btk for Gypsy Moth
 - BT for mosquitoes
 - Beauveria bassiana in greenhouses

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Field Trials

- Lab studies have demonstrated both effectiveness and residual activity
- Field results can be wildly different
- First wanted to try to the product in a bad infestation and evaluate the results



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Observations

- Significant improvement after only one application
- Degree of improvement differed by room – probably due to severity of issue in each room as well as furniture and carpeting
- Bugs were not eliminated after two applications
- Client called for additional treatments – whole-home heat treatment was scheduled

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Second Field Trial

- Goal was to try the product in “normal” infestations
- 14 infestations treated
 - 8 were low levels – less than 10 bed bugs found
 - All were eliminated in one treatment
 - Weeks/months after, bed bugs were found in some units due to surrounding unit infestations
 - 2 moderate level – 20-100 bed bugs
 - 4 high level – over 100 bed bugs

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Results

- Overall good...4 responded well...2 did not
- One unit with an extensive history has 40+ bed bugs noted in random locations. One treatment and infestation was eliminated
- One unit had a persistent issue in a couch that Aprehend struggled to overcome
- One unit had a long history and a chronic smoker – nicotine on walls may have impacted Aprehend

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Overall Messaging

- Aprehend is working well in most infestations
- Some companies are using it exclusively
- Some companies have decided to stay away from the product for an assortment of reasons
- There is no right or wrong answer
- Decide what's best for you, your company and clients!

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Heat Treatment for Bed Bugs



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Why Heat?

- Considered a green/reduced pesticide service
- Can eliminate many infestations in just one service
- Can crash bad infestations quickly
- Some clients only want heat
- Overcomes resistance in bed bug populations

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Why NOT Heat?

- Cost of entry into the market can be high
- Profitability can be a challenge
- Some equipment can pose operational challenges with size and weight...especially in NYC
- The tools available to us have improved and companies don't "need" heat as much as they used to

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Summary – Big Picture Thoughts

- Low-bid pest control will get you nowhere – make sure your RFP will actually solve problems
- Prep for the sake of prep should be an orange flag
- Hoarding and extreme clutter there are no easy answers for
- Be able to identify clients that simply can't participate and provide them help at some level
- 5-10% is a warning...entire building inspection may be necessary
- This isn't about "tag you're it" with a provider...you have to play a role

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Summary

- CoVid has temporarily changed the bed bug landscape
- We must find the infestations no one is reporting
- Prep should be a case by case decision
- Identify quickly if someone does not have the physical resources to participate
- Lots of great tools to solve bed bug infestations...the key is not to let the infestation get bad!

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Thank You

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