State of the Bed Bugs

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Outline

• A look back
• State of the bed bug industry
• Two year research recap
• Battle plan

A look back
Bed Bugs Without Boarders Survey

Source: PestWorld Magazine

UKY survey
251 Pest Control Companies

Have you treated or been asked to treat for bed bugs within the past year?

- Yes: 99.6%
- No: 0.4%

Over the past year, do you feel the incidence of bed bugs in your region is...

- Increasing: 72%
- Same: 25%
- Decreasing: 3%
• Multifamily housing: 98% up
• Single-family homes: 96% up
• Hotels/motels: 75% down
• College dorms: 47% down
• Nursing homes: 46% same
• Schools & day care centers: 41% up
• Office buildings: 36% down
• Hospitals: 33% up
• Transportation (train/bus/taxi): 21% up
• Retail stores: 15% down
• Libraries: 12% up
• Movie theaters: 10% down
• Laundromats: 9% same
• Restaurants: 7% same
• Airplanes: 2% down

Which of the following pests do you consider most difficult to control?

- Bed Bugs: 76%
- Ants: 17%
- Cockroaches: 6%
- Termites: 1%

Which methods are you using to find bed bugs?

- Canine/Scent Detection: 46%
- Active Traps: 30%
- Visual Inspection: 99%
- Pesticide Traps: 50%
- Passive Traps: 46%
Which insecticides do you usually use?

Other findings
- Seasonal speculation
- 94% spend more than one hour on the initial
- 69% usually need 2 or 3 services to get control
- 67% said clutter was the biggest customer-oriented challenge (58% not following advice)
- 60% offer proactive/preventative service
Research Recap: Biology

- Population dynamics
- Lay ~200 eggs in a lifetime
- Live ~5 months without food
- Effects of caffeine & alcohol
- Ability to crawl up smooth surfaces

Research Recap: Behavior

- Female scent attracts nymphs to food/shelter
- Bed bugs move around A LOT within a home
- Bed bugs may be attracted to human odor
Research Recap: Inspection & Monitoring

- Canines are not 98% effective
- Evidence of both single and multiple introductions in a building
- Monitor tests
  - Verifi,
  - BlackOut,
  - ClimbUp,
  - Nightwatch, and
  - DIY active monitors

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Research Recap: Non-chemical Control

- Steam
  "Results of this study suggest that non-chemical methods can effectively eliminate bed bugs in lightly infested apartments. –Wang et.al."
- Heat
- Freezing
- Cryonite
- Vacuuming
- Bean leaves
- Fungus
- Gut symbionts
- Ultrasonic

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Research Recap: Chemical Control

- Botanicals
- Diatomaceous Earth
- Conventional Pesticides
- Resistance
- Misuse
- DDVP
- Pesticide-Impregnated Covers
- Foggers
- IGRs

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Research Recap
Integrated Programs

• Cannot rely on residents to report
• Misconceptions abound
• Teaching staff

• Canada: sufficient funding, partnerships among many stakeholders, training and education, and surveillance and evaluation

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Your turn

• On the index card, please write a question that you would like researchers to answer.

Current requests
Areas at-risk for introduction and infestation

• Introduction is likely where people
  – frequently travel
  – set down personal belongings
  – sit or lay down for long periods of time
• Infestation is likely where bed bugs can
  – Crawl (upholstered furniture or bedding)
  – Feed on a person for 5 minutes without being detected
  – Hide in cracks or folds

Areas prone to introduction vs. infestation

<table>
<thead>
<tr>
<th>Area</th>
<th>Risk of Introduction?</th>
<th>Risk of Infestation?</th>
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3 =High  2=Medium  1=Low

Integrated Pest Management (IPM)

1. Inspect and monitor
2. Identify
3. Determine the scale of response
4. Respond
   – Non-chemical control
   – Changing people’s behavior
   – Chemical control
   – Biological control
5. Evaluate effectiveness
11/19/13

Battle Plan

Keep up the great work!

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I would appreciate your research suggestions!
If you want me to follow up, write your e-mail
address on the back