BED BUG DETECTING DOGS

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INSPECTION ---FIRST ELEMENT OF TREATMENT

• PROBABLY MOST DIFFICULT ELEMENT

• MOST TIME CONSUMING

• MUST BE ACCURATE
BED BUG DETECTION

• Visual detection difficult
• Early infestations go unnoticed
• Early control more likely to succeed, and these infestations are less likely to spread and are cheaper to control

15 bed bug nymphs in slots of drywall screw
BED BUG INFESTATIONS

- **Active**
  - Live bed bugs
  - Eggs

- **Inactive**
  - Dead bed bugs
  - Blood spots
  - Fecal stains
  - Cast skins
INITIAL INSPECTION

• SEARCHING FOR ANY INDICATION OF INFESTATION
  • LIVE INSECTS
  • CAST SKINS
  • BLOOD SPOTS
POST TREATMENT
INSPECTION

• MORE DIFFICULT INSPECTION

  – MUST LOOK FOR LIVE INSECTS AND EGGS

  – MUST SEARCH FURTHER AWAY FROM BED
WHERE TO LOOK
Primary Bed Bug Harborage ~70%

Secondary Bed Bug Harborages ~23%

“Other” Bed Bug Harborages ~7%
Possible Primary Harborages

Mattresses

Bed Frames

Box Springs

Linens and dust ruffles

Headboards and wall mounts
Primary Bed Bug Harborage
~70%

Secondary Bed Bug Harborages
~23%

“Other” Bed Bug Harborages
~7%

5 feet
Possible Secondary Harborages

Night stands
Dressers
Chairs
Tables
Carpet and baseboards
Primary Bed Bug Harborage
~70%

Secondary Bed Bug Harborages
~23%

“Other” Bed Bug Harborages
~7%

5 feet
Other Harborages

Smoke detectors

Picture Frames

Wall outlets

Popcorn Ceilings

Anywhere!
A PROPER INSPECTION
HOW LONG DOES IT TAKE

ESTIMATES OF TIME REQUIRED
HOW ACCURATE IS THE INSPECTION

ESTIMATE THE PERCENTAGE OF ACCURACY
CAN MAN’S BEST FRIEND HELP
BED BUG DETECTING DOGS

• COULD BE THE FUTURE OF INSPECTIONS

• MUCH QUICKER

• SIGNIFICANTLY MORE ACCURATE
"Don't let the red bugs bite!"
HOW ARE DOGS CHOSEN

• SPECIFIC BREEDS ARE FAVORED
  – BEAGLE
  – HUNTING BREEDS

• MOST DOGS ARE RESCUED

• DOG’S TRAITS ARE EVALUATED
METHODS OF TRAINING

• STIMULUS IS NORMALLY FOOD

• REPITION IS IMPORTANT

• PRAISE NOT PUNISH
TRAINING STEPS

Basic Retrieve

Controlled Retrieve

Buried Hides

Food Reward
STATION FOR EVALUATING CANINE SCENT DETECTION

- PVC Tube
- PVC Cap with Hole
- Bed Bugs Inside Pill Cup with Perforated Lid
EVALUATIONS

- ARE DESIGNED TO EVALUATE THE DOG AND HANDLER

- ARE REAL SITUATIONAL TESTS

- VALIDATE THE DOGS ABILITY
MATERIALS AND METHODS

- Scent Vials
MATERIALS AND METHODS

- Scent-detection stations
GENERAL HOUSEHOLD PEST TESTS

• 4 dogs, 20 replicates per dog

~ 1 meter

5 Live Bed Bugs
BED BUG DETECTING CANINE

Bed Bug Detecting Canines in Action
RESULTS OF HOUSEHOLD PESTS TEST

- Bed Bugs: 97.5%
- Ants: 0%
- Roaches: 0%
- Blank: 0%
- Termites: 0%
BED BUG MATERIALS TEST

• 3 dogs, 20 replicates per dog
RESULTS OF BED BUG MATERIALS TESTS

<table>
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<tr>
<th>% Indication</th>
<th>Live Bed Bugs</th>
<th>Viable Eggs</th>
<th>Feces</th>
<th>Dead</th>
<th>Cast Skins</th>
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HOTEL FIELD TESTS

- 3 vials male adults only - 1, 5, and 10
- 3 vials female adults only - 1, 5, and 10
- 2 hotel rooms:
  - One with only female vials
  - One with only male vials
- Randomly hidden in 17 possible locations
- 3 dogs, 6 replicates per dog
ABILITY TO LOCATE BED BUGS IN HOTEL ROOMS

% Indication

Vials Containing Females

Vials Containing Males
CONCLUSIONS

• Dogs can be trained to detect the scent of bed bugs

• Dogs differentiated
  – Bed bugs from other household pests
  – Active from inactive infestations

• Determined that dogs could locate bed bugs in hotel rooms
WHO USES BED BUG DETECTING DOGS

• Currently two public housing authorities own dogs and many more hire them

• Many colleges and universities are hiring them

• Hotels and other hospitality organizations are hiring them
CHOOSING A BED BUG DETECTING TEAM

- LOOK FOR CERTIFICATIONS

- ASK FOR REFERENCES

- CHECK OUT WHERE THE DOG WAS TRAINED
CERTIFICATION

• NESDCA – National Entomology Scent Detection Canine Association

• Very rigorous testing process

• Annual recertification required
MEET
JUMPING JACK FLASH
BED BUG DETECTING DOGS

LIMITATIONS

• CANNOT SEARCH UP HIGH

• WORK BEST WHEN PAIRED WITH SAME HANDLER

• NEED REINFORCEMENT TRAINING ALMOST DAILY
SUMMARY

• INSPECTIONS ARE AS CHALLENGING AS TREATMENTS

• BED BUG DOGS ARE PROVEN TO BE MORE ACCURATE AND QUICKER

• THEY MAY BE THE INSPECTOR OF THE FUTURE
WEBSITES

• http://ipm.ifas.ufl.edu
• www.nesdca.com
• www.bedbugcentral.com
• www.thebedbugresource.com
SLEEP TIGHT, LLC
Canine Bed Bug Detection Service

• Gretta MacIntyre - Pennsylvania
  Phone: 724-986-7946
  GRETTA@SLEEPTIGHTLLC.BIZ

• Linda Charlton - Ohio
  Phone: 513-520-5790
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