Canine bed bug detection

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Future of bedbug detection

- The current crisis facing the industry
- History of canines in scent detection
- The solution
- Field exercise examples
- Recent research results

The Problem

- Incomplete & limited ability to eradicate infestation
- Costly call backs
- Anxiety in victim
- Increased litigation
- Impact on the environment

Canines in scent detection

- Military and Police
  - Search and Rescue
  - Narcotics
  - Explosive
- USDA
  - Produce "Beagle Brigade"
  - Foot and mouth disease
  - Bed bug training

The Solution

- Canines require less time than human inspectors
- Canines are efficient at finding live bed bugs at low infestation levels

The Solution

- University of Florida research proved that dogs trained at J & K Canine Academy detect only live bed bugs and ignore dead bed bugs, fecal matter, and cast skins.

The Solution

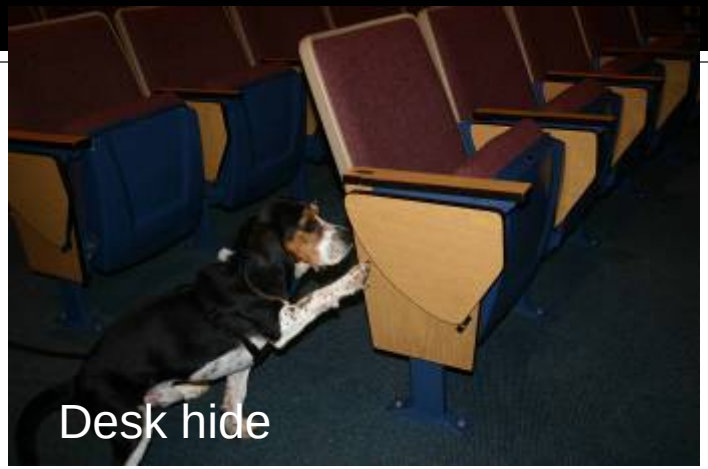
- Research shows that viable vs. non-viable stage eggs can be detected
- Canines are used to verify success of treatment
- Canines are a "green" solution

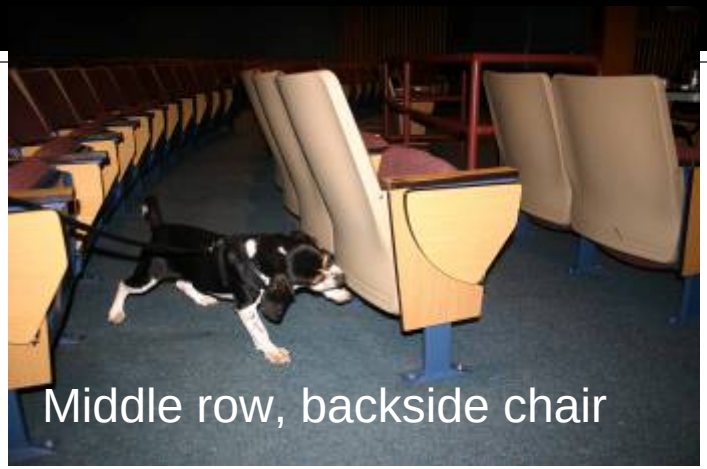
Field Application

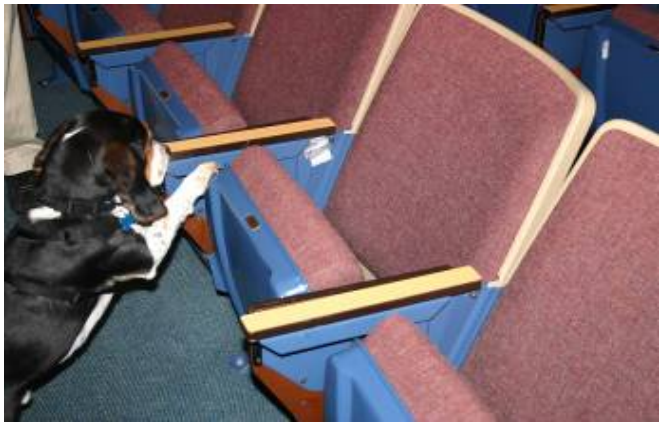
Auditorium Exercise

- Distraction hides: 2
  - One empty satchel
  - Satchel with fecal material, cast skins, dead bed bugs, hot glue and duct tape
- Total of 4 live hides
  - 3 adult bed bugs per hid
- 190 seats

Found All 4 live hides


Desk hide


Middle row, backside chair



Results

In the 190 seat auditorium:

- Found all live hides
- 20 minutes to complete search
- No false positives on proofs

University of Florida Research

HOUSEHOLD AND STRUCTURAL INSECTS

Ability of Bed Bug-Detecting Canines to Locate Live Bed Bugs and Viable Bed Bug Eggs

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ABSTRACT The bed bug, *Cimex lectularius* L., like other bed bug species, is difficult to visually locate because it is cryptic. Detector dogs are useful for locating bed bugs because they use olfaction rather than vision. Dogs were trained to detect the bed bug (as few as one adult male or female) and viable bed bug eggs (five, collected 5–6 d after feeding) by using a modified food and verbal reward system. Their efficacy was tested with bed bugs and viable bed bug eggs placed in vented polyvinyl chloride containers. Dogs were able to discriminate bed bugs from *Camponotus floridanus* Buckley, *Blattella germanica* (L.), and *Reticulitermes flavipes* (Kollar), with a 97.5% positive indication rate (correct indication of bed bugs when present) and 0% false positives (incorrect indication of bed bugs when not present). Dogs also were able to discriminate live bed bugs and viable bed bug eggs from dead bed bugs, cast skins, and feces, with a 95% positive indication rate and a 3% false positive rate on bed bug feces. In a controlled experiment in hotel rooms, dogs were 98% accurate in locating live bed bugs. A pseudoscent prepared from pentane extraction of bed bugs was recognized by trained dogs as bed bug scent (100% indication). The pseudoscent could

Quality Assurance

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National Entomology Scent Detection Canine Association

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NESDCA was formed by Pest Control Professionals to ensure the highest standards for Entomology Scent Detection Canines are upheld.

We are committed to requiring all Entomology Scent Detection K-9 Teams Obtain Accreditation before performing inspections.

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