

# Got Bed Bugs?

**Pennsylvania Integrated Pest Management Program**

Penn State Entomology



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  - CLS: Community Legal Services (215) 981-3798



# Bed Bugs...

- Are tiny insects, but you can see them
- Poppy to apple-seed size
- Have not been shown to spread disease
- Can't fly or jump; only crawl
- Can be controlled with heat
- Most liquid and aerosol pesticides are not effective



# Bed Bug Life Cycle



Photo: John Obermeyer, Rutgers University

- Egg-nymph-adult
  - Nymphs and adults must feed
- 6-12 eggs laid @ 2-3 days = 400+ lifetime
  - 1 mm long = 1/26", sticky
  - Eggs are pesticide resistant
- Nymphs hatch out in 6-10 days
  - Must have a blood meal to grow
  - 30+ days to maturity
- 70% of an infestation are comprised of nymphs
  - Can determine male or female at adult stage only

# How do you get Bed Bugs?



- Because you are unlucky!
  - *Not* because you are dirty!
- Crowding & transient – apartments, group homes, etc.
- Bed bugs hitchhike – clothes, backpacks, etc.
- Transfer where people sit for long periods of time
- Offices and schools are not good environments for bed bugs!

**Nobody wants bed bugs**

# How & Why Bed Bugs Spread

- Hitchhiking
- Sex (theirs, not ours!)
- Over the counter chemicals
- **Used mattresses & furniture**
- By visitors
- Even by staff!
- Reports are now stable



Photos: Louis N. Sorkin, B.C.E. Entisult Associates, Inc.

# Signs of Bed Bugs

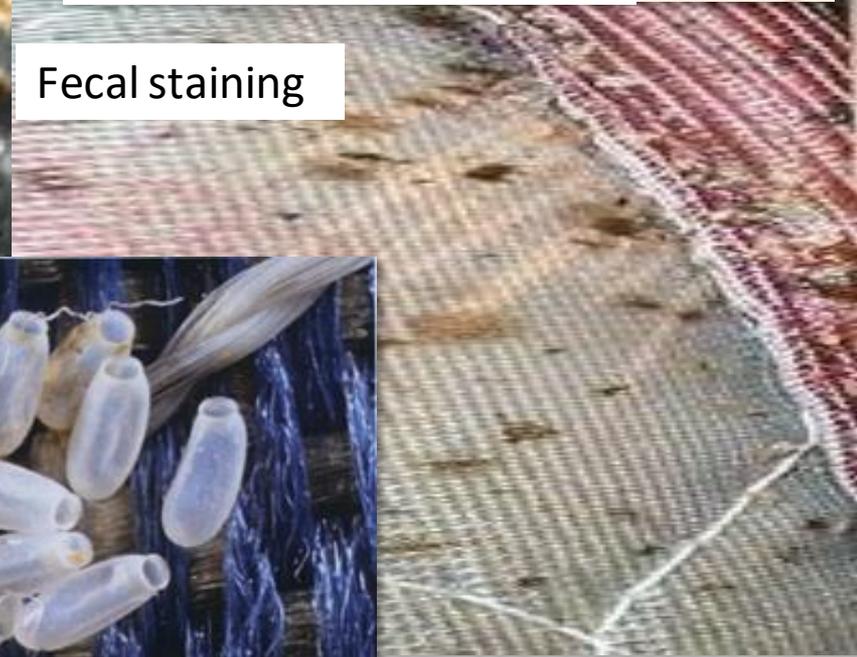
Cast "skins" (exoskeletons) of young bed bugs



"Aggregation" on mattress



Fecal staining



Bed bug eggs



Bed bug feeding & defecating



“Aggregation” on mattress



“Aggregation” on mattress



Bugs –all ages- between mattress & box spring



**Bed bugs and fecal spots on the underside of a box spring**

# Bed Bugs in Offices & Schools

- Introduction vs. Infestation
- Offices and schools are not a good environment for BB
  - No sleeping
  - Too much activity
- Possible hot spots:
  - Young children – naps; “cozy corners;” cribs
  - Special education – wheelchairs
  - Cubbies & lockers
  - Staff lounges/break rooms



# Protect yourself when visiting Homes

- **Avoid sitting** on couches, beds, stuffed chairs
- If possible, bring your own folding stool
- Wear light colored clothing, shoes, and socks that can be thrown in the dryer
- Take along an extra set of clothes and a large ziplock bag in case you suspect infestation
- Only take necessary items into the home
- If you have a handbag, set/hang it on your stool

# Make Offices unfriendly to Bed Bugs

- Eliminate **clutter** - it impedes detection/solutions
- **Caulk** cracks and crevices
- **Paint** walls a light color
- Use plastic or metal client **seating**
- Keep a **plastic bin** on floor, next to chair for client's handbag, etc.
- Use bed bug **barriers on feet** of desks or cubicle walls (e.g., ClimbUp Interceptors; Volcanoes)
- **Report** any concerns immediately to office IPM Coordinator!



After 2 weeks!...



Volcano & Lure

# Treatment

## Non-chemical

- Vacuum
- Steam
- Hot boxes; clothes dryer

## Chemical - *PMPs only!*

- Dusts – DE, silica gel, CimeXa
- Liquids & aerosols – *limit!*
- Biopesticide – Aprehend (BB)

HEPA  
Vacuum  
= \$ 250



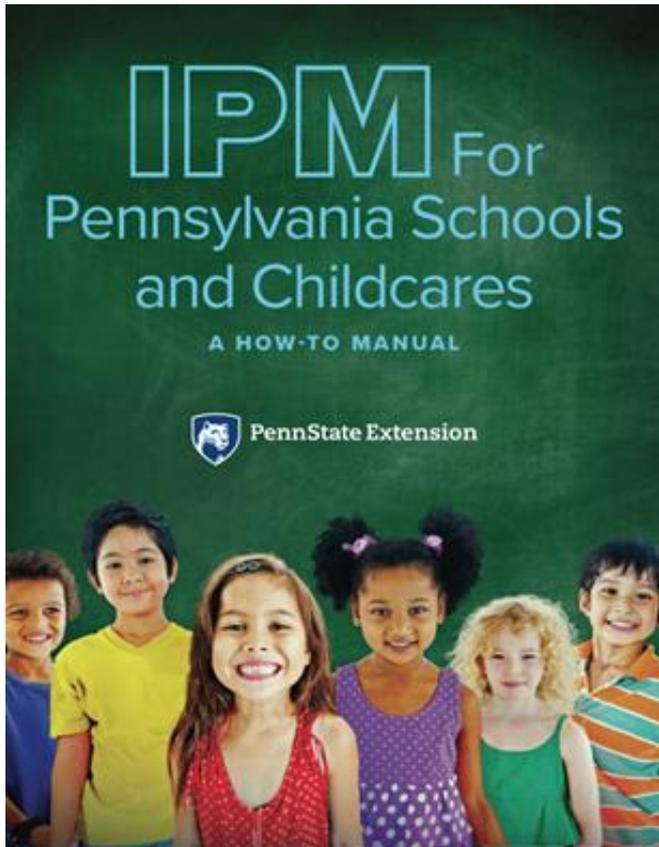
Commercial  
steamer = \$350



ThermalStrike  
heater = \$150



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**Sources** as noted on slides and in References

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