

## Session Two of Integrated Pest Management for Multifamily Housing



www.StopPests.org

Find handouts for today's session at:  
<http://stoppests.org/go/usvi>

While we wait, please tell us in the chat:  
 What's your expectation about cockroaches?  
 Do you think they're just a fact of life?

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## Session Two - Meet Your Host



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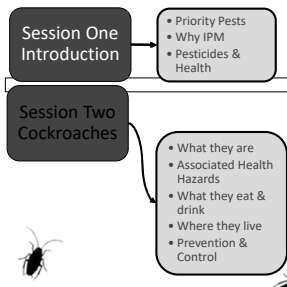
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**Session One Introduction**

- Priority Pests
- Why IPM
- Pesticides & Health

**Session Two Cockroaches**

- What they are
- Associated Health Hazards
- What they eat & drink
- Where they live
- Prevention & Control



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## Session Two - Meet Your Trainer




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Any Questions from Session One  
Introduction



Raise your hand to un-mute, or send to  
Susannah K. Reese <sck27@cornell.edu>

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## Homework from Session 1

### Pesticides & Health – Who Does What?

- Encourage reporting
- Turn PMP & resident observations into work orders
- Discourage pesticide use by residents
- Keep IPM log
- Evaluate effectiveness

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## Homework from Session 1

### ~~Pesticides & Health~~ — **Contract Language**

- Focus Unit Schedule
- Service Schedule/log
- Tools other than sprays
- Educational materials for residents

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## What's Missing?

Please chat or un-mute!

What challenges did you encounter in your discussions? (Raise your hand to be un-muted)

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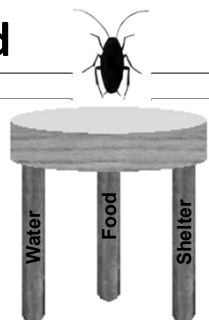
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## What All Pests Need

- Food
- Water
- Shelter




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## Know Your Priority Pests

- **Cockroaches** cause asthma in infants, trigger asthma attacks, and contaminate food
- **Rodents** such as mice and rats carry diseases, bite, destroy property, may cause fires, and may trigger asthma attacks
- **Bed Bugs** and their bites are a nuisance and are expensive to eliminate

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## Poll: On average, what level of infestation have you seen in units? (select one response)

- High (live cockroaches obvious in daytime)
- Medium (evidence of roaches and frass)
- Low (occasional resident reported sightings)
- None
- Don't know

Select one.

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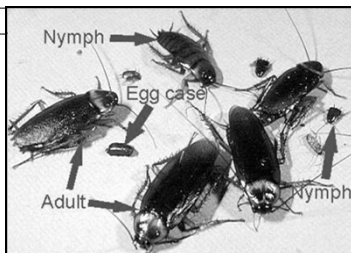
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## What is a Cockroach?

- Live where humans provide food and water
- Multiple eggs in each egg case means many nymphs (babies)
- Mostly active at night, visible Cockroaches during the day indicate a serious infestation




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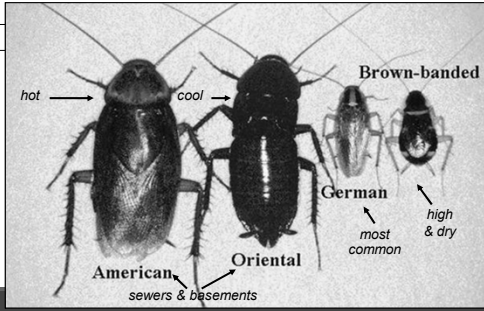
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## Common Cockroaches




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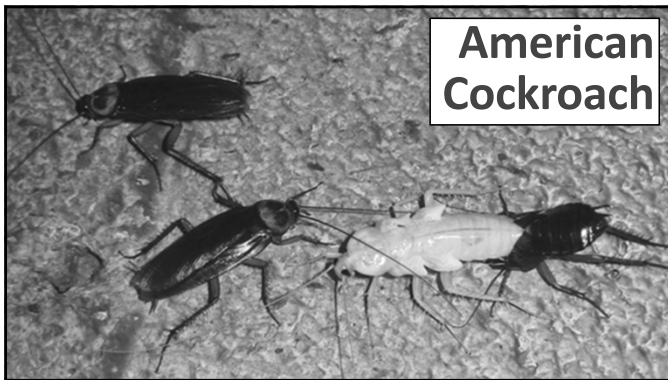
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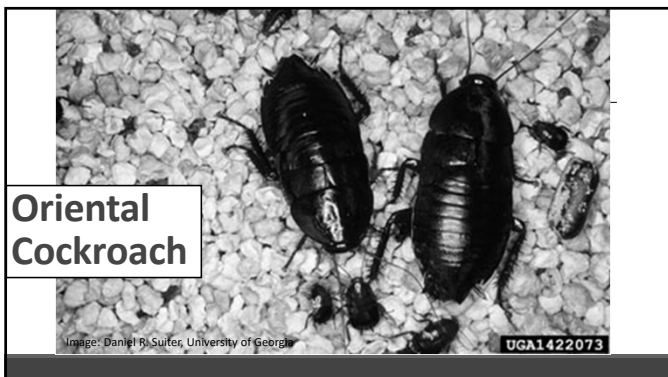
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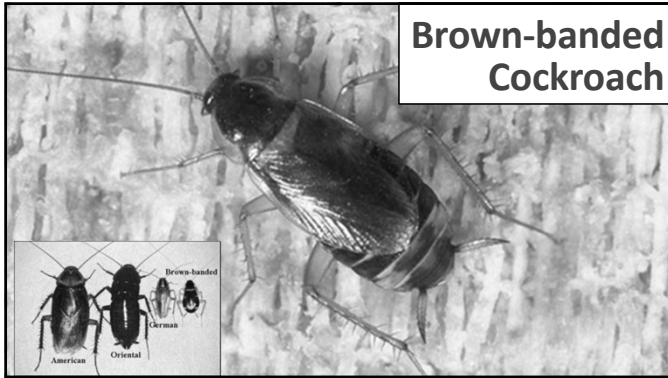
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**Brown-banded  
Cockroach**

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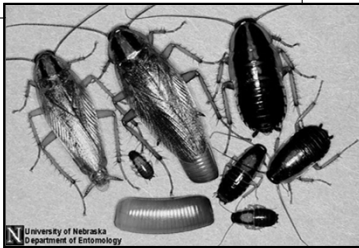
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## German Cockroaches

- Medium size (3/4"), bronze, with "racing stripes" behind the head
- Like warmth, moist and dark conditions




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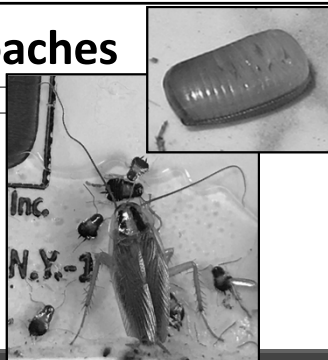
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## German Cockroaches

- Medium size (3/4"), bronze, with "racing stripes" behind the head
- Like warmth, moist and dark conditions
- Reproduces quickly
- Mother carries eggs to term even if she is dead




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## Cockroaches Are Health Hazards

Cockroaches, their shed skins, and their frass:

- Make asthma worse
- **Cause** asthma in children
- Cause or aggravate allergies
- Contaminate food, dishes, and counters
- **We must clean the dead roaches, skins & frass**

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## Cockroach Frass Math

For sensitive people with asthma:

**8 units** of cockroach allergen per gram of dust can trigger a reaction.

One female cockroach will produce

**1,500 units** per day

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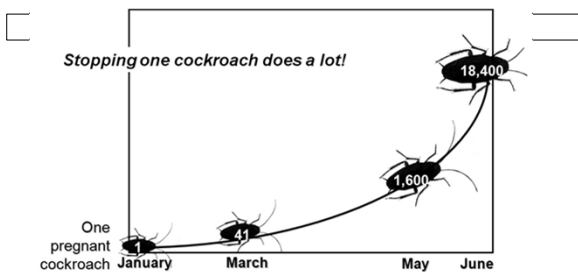
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## One German Cockroach, ½ a Year




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## Signs of Cockroaches

- Live cockroaches
- Dead cockroaches and their parts
- Frass
- Egg cases

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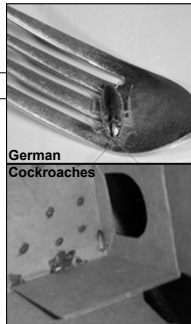
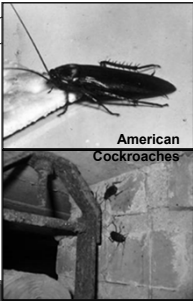
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## Live Cockroaches



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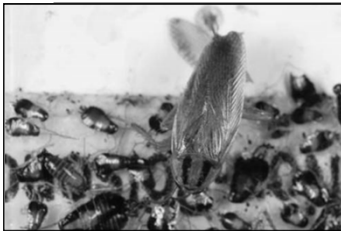
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## Dead Cockroaches



German cockroaches on a sticky trap



Brown banded cockroaches  
by a door hinge

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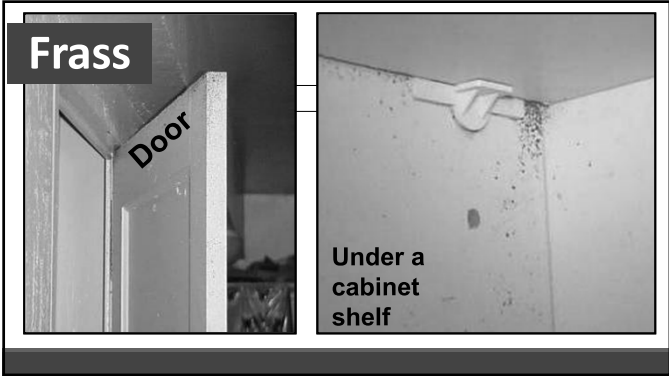
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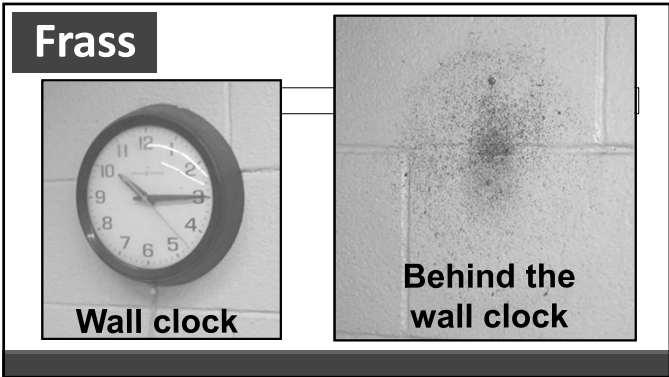
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### Where Cockroaches Live

- Near water, food and warmth
- Cracks and crevices
- Anywhere in a building



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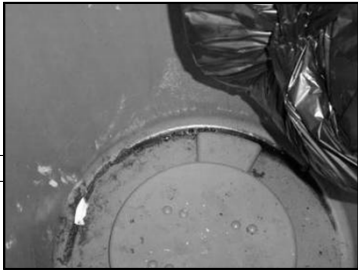
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## What Cockroaches Eat

- Crumbs
- Grease
- Trash
- Cardboard glue
- Just about anything\*

\*This knowledge will help us later




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## Where Cockroaches Drink



- Sinks
- Counters
- Floors
- Pet bowls
- Shower stalls
- Sweaty pipes
- Refrigerator drip pans and gaskets
- AC units

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## Poll: Which of the following are TRUE statements about cockroaches?

- Make asthma worse in sensitive people
- Can cause asthma in preschool-aged children
- Live where humans provide food & water
- Will eat just about anything
- All of the above

Select all that apply.

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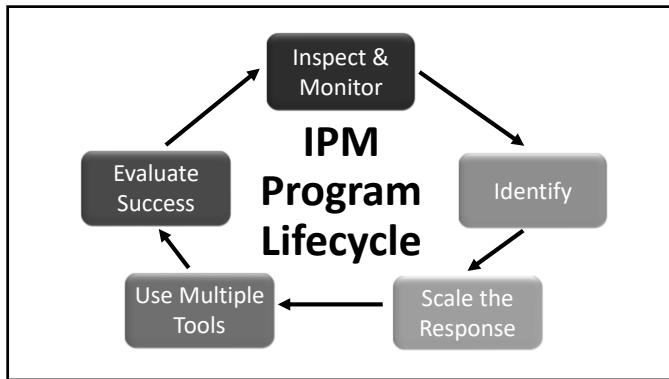
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## Inspect & Monitor

Inspect & Monitor

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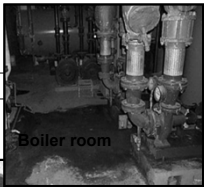

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## Inspect

- Using a flashlight, look for evidence where cockroaches would find food, water, or a hiding spot: up, down, behind, and under
- Think like a cockroach – look in hidden areas

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## When are cockroaches most active?

- Cockroaches are active at night when people aren't looking
- They hide where people don't usually look
- Monitors help find cockroaches when and where people can't




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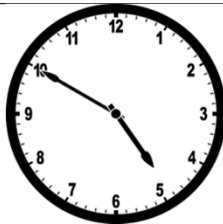
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## Monitors Can Help

- Monitors help find cockroaches when and where people can't.




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## Monitor

**Monitor** by placing sticky traps near areas where cockroaches might travel - at corners and near warmth, food, and water




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## Monitor

**Monitor** by placing sticky traps near areas where cockroaches might travel  
- at corners and near warmth, food, and water




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## Monitor

**Monitor** by placing sticky traps near areas where cockroaches might travel - at corners and near warmth, food, and water




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## Identify

Check your monitors:

- Is it a cockroach?
- What kind?

Identify

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## Scale the Response

How many  
cockroaches  
do we have?

Scale the  
Response

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## What's Your Response?

Please chat!

How do you  
currently handle  
cockroach  
sightings?

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## Use Multiple Tools

- Sanitation
- Exclusion
- Targeted Chemical Use
  - Only by Licensed Professionals

Use Multiple  
Tools

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## Sanitation

Detailed sanitation  
makes pest control  
work

Eliminate hiding spots,  
food, and water  
available at night



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## Clean the Kitchen



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## Clean the Kitchen



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### Vacuum Cockroaches

- Non-chemical intervention
- Quickly reduce cockroach population
- Remove live roaches, dead roaches, shed skins
- Prepare the area for cleaning and treatment



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## Simple Soap and Water Work Best

- Cockroaches, shed skins, and their frass:
- We must clean the dead roaches, skins & frass.




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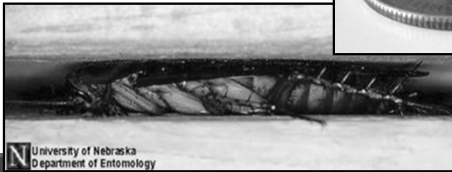
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## Cockroaches like to be squeezed




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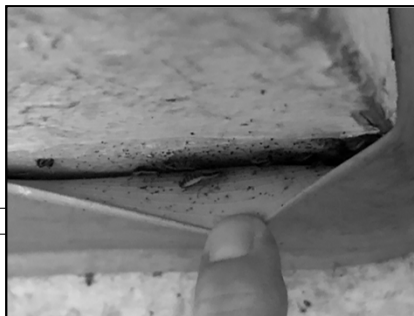
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## Exclusion

Seal or fix cracks, loose moldings, or holes where cockroaches could fit




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## Exclusion Tools

Use:

- Silicone caulk
- Copper mesh
- Screens



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## Exclusion



Caulk:  
Around cabinets and  
counters to limit access

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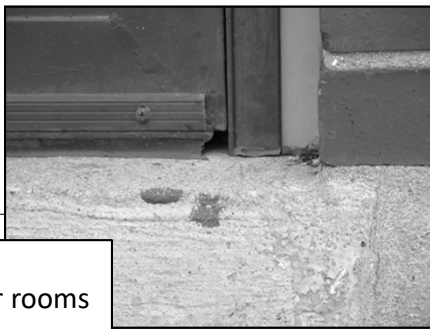
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## Exclusion



Door sweeps:  
Always on boiler rooms  
and exterior doors

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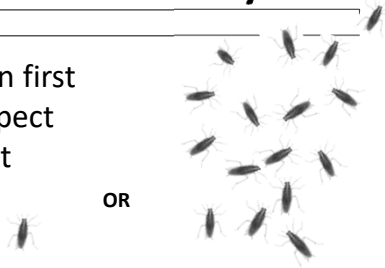
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## Targeted Chemical Use by PMP

- Ideally, sanitation first
- Monitor and Inspect before treatment

OR




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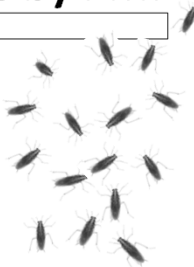
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## Targeted Chemical Use by PMP

- Ideally, sanitation first
- Monitor and Inspect before treatment
  - No “calendar-based” spraying
  - How much to apply
  - Where to apply
- Only licensed individuals should apply pesticides




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## Baits: The most effective pesticide option

- Cockroaches feed and share
  - Secondary kill - All stages
- Use in every room where inspection finds evidence



Bait Station

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## Bait Delivery Mechanisms

- Bait station
- Gel form




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## Targeted Chemical Use by PMP: Baits



- Will still work where sanitation is low
- More roaches = more bait
- Rotate formulations



PMPs applies gel bait under a drawer

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## Targeted Chemical Use by PMP: Keeping Baits Attractive

- Wear gloves
- No pesticide sprays
- No scented cleaners




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### Targeted Chemical Use by PMP: Insecticidal Dusts

- Boric acid, diatomaceous earth
- Stomach poison
- Desiccant




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### Targeted Chemical Use by PMP: Insecticidal Dusts

- Light dusting, keep dry
- Unit turnovers or Cabinet replacement:
  - Clean first
  - Apply in walls, under and behind cabinets




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### Targeted Chemical Use by PMP: Insect Growth Regulators



- Interfere with cockroach growth and egg hatching
- Take a month to work, effective for +/- 90 days
- Compatible with other IPM methods; may enhance baits

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### Poll: Which of the following treatments does your PMP use?

- Monthly or quarterly sprays
- Baits
- Monitoring
- Insect growth regulators
- Insecticidal dusts
- I don't know

Select all that apply.

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### Prohibit the Use of Over-the-Counter Sprays & Foggers

- Not part of IPM
- Not compatible with baits
- Cockroaches develop resistance




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### Evaluate Success

Evaluate  
Success

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## IPM Practice

### Please chat!

Examine each photo, then tell us:

- What's the problem here?
- How would you fix it?
  - Who is responsible?

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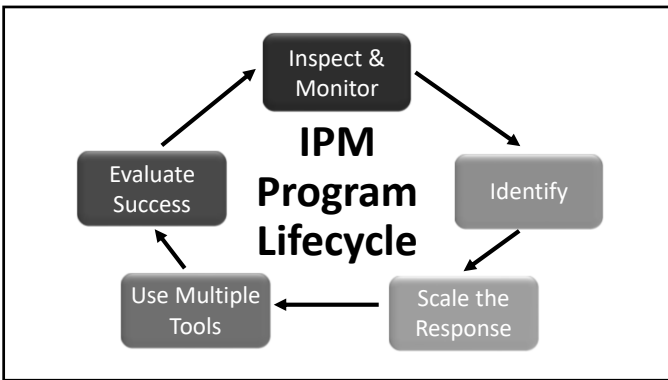
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**Session One Introduction**

- Priority Pests
- Why IPM
- Pesticides & Health

**Session Two Cockroaches**

- What they are
- Associated Health Hazards
- What they eat & drink
- Where they live
- Prevention & Control

**STOP  
Pests  
in housing**

[www.StopPests.org](http://www.StopPests.org)

What we learned...

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## Homework for Session 2

Cockroaches – **Who Does What?**

- Monitoring
- Sanitation/Cleaning
- Exclusion
- Repairing Leaks
- Apply Pesticides

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## Homework for Session 2

Cockroaches – **Contract Language?**

- No routine spraying or pyrethroid sprays
- Use monitors in halls/units
- Treat with bait, dust, IGR based on monitor counts
- Follow-up schedule (2-4 weeks)
- Bait Rotation schedule

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**STOP**  
  
**Pests**  
 in housing  
[www.StopPests.org](http://www.StopPests.org)

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