

# Integrated Pest Management in Multifamily Housing: Rodents and Spiders



**Retirement Housing Foundation**

**IPM Training Part 2.**

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## Developed and sponsored by



United States Department of Agriculture  
National Institute of Food and Agriculture



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## What all pests need

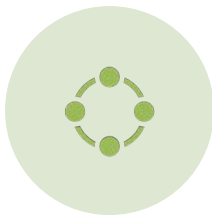
- Food
- Water
- Shelter



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## What is IPM?



**INTEGRATED:** USES MULTIPLE APPROACHES THAT WORK TOGETHER

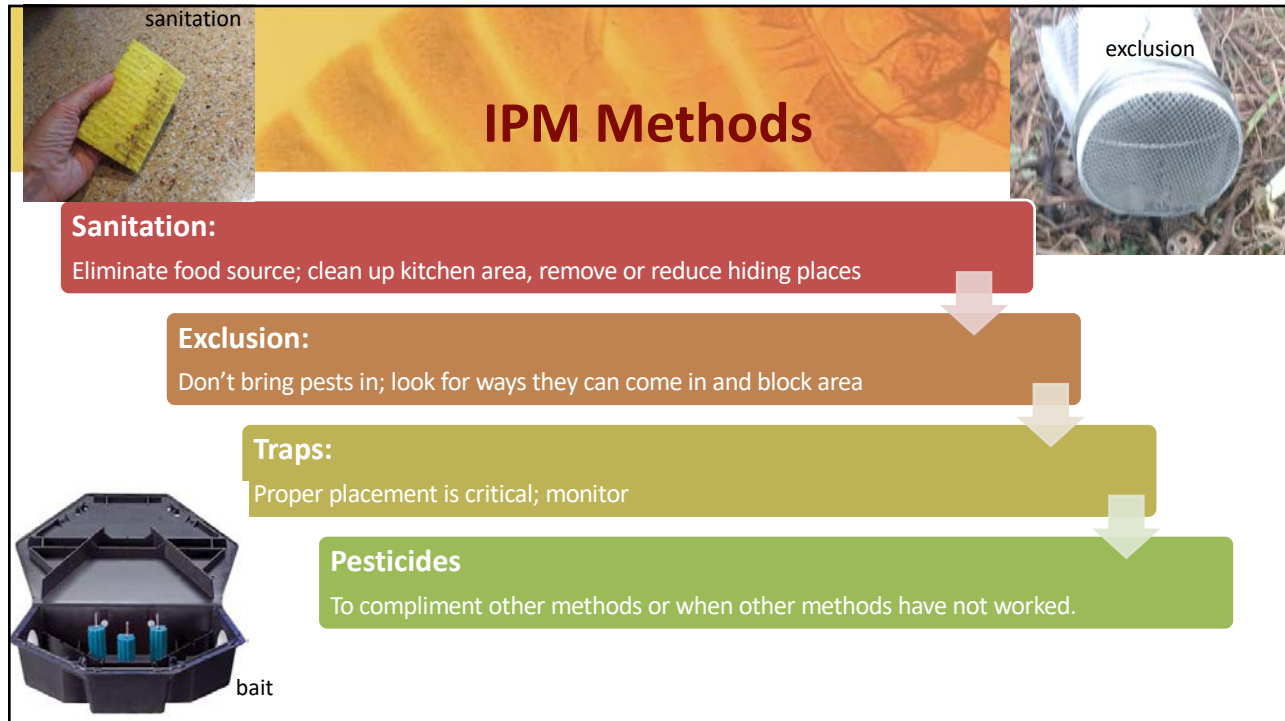


**PEST:** WHAT THE MULTIPLE APPROACHES WORK TO FIGHT

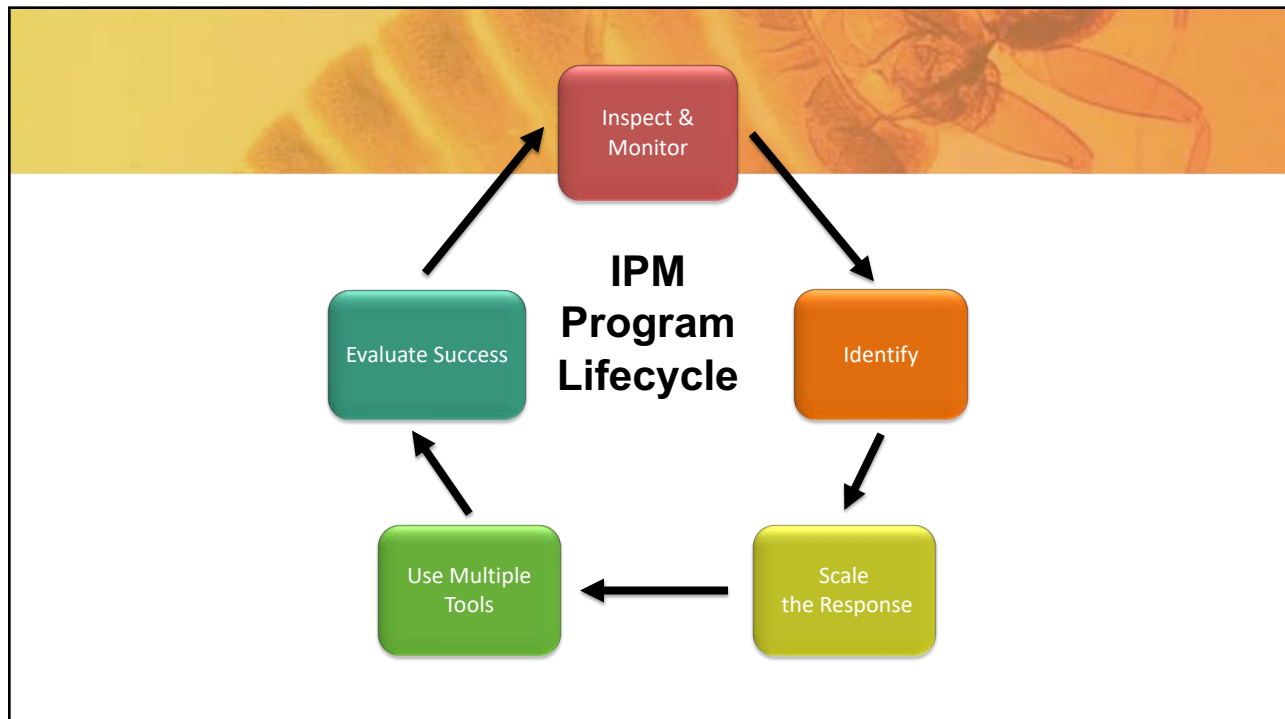


**MANAGEMENT:** USE OF THE MOST ECONOMICAL MEANS WITH THE LEAST POSSIBLE RISK TO PEOPLE, PROPERTY, AND THE ENVIRONMENT

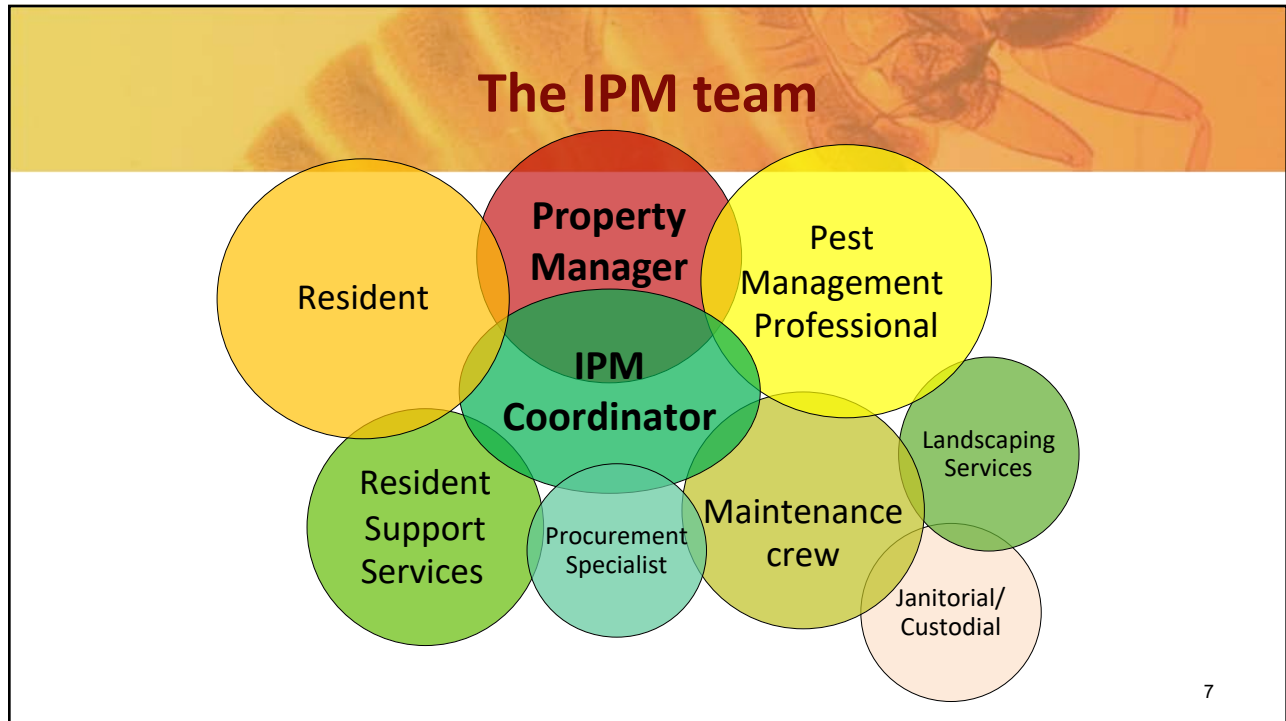
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## Polls 1 and 2

How often do you see mice in the buildings and developments where you work?

How often do you see rats in and around the buildings and developments where you work?

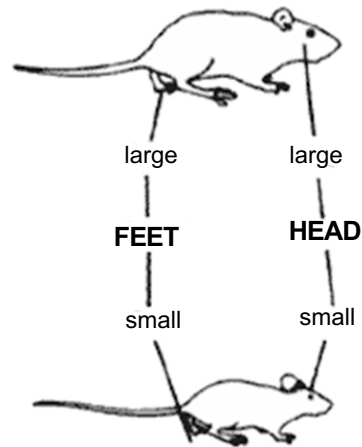
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## Rodents

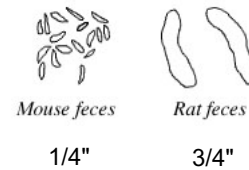
### Outline:

- What rodents are
- What they eat
- Where they live
- How to think like a rodent
- Prevention and control

Also known as...  
ratones y ratas



### Young Rat



Mouse feces

Rat feces

1/4"

3/4"

### House Mouse

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## Rodents Violate Housing Programs and Codes

### HQS, UPCS: Health & Safety violations

- Infestation of rats, mice, or vermin
  - Droppings or chewable holes
  - One or more live rats or mice
  - Other insects or vermin observed



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## Rodents are Health Hazards

### Rodents and their waste:

- Cause or aggravate asthma and allergies
- Can carry infectious diseases
- Bite
- Contaminate and damage food & property
- Chew wires & create fire hazards



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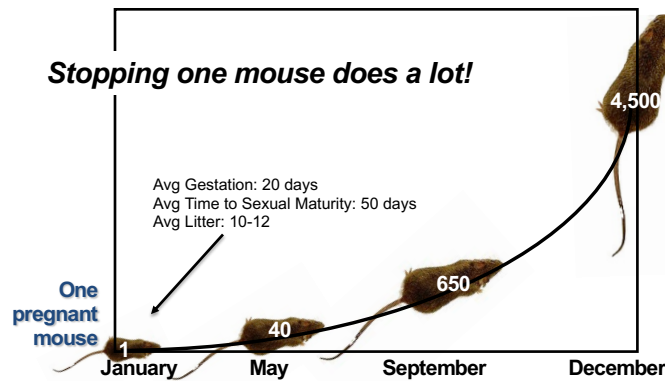
## What is a Rodent?



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## One Mouse, One Year...



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## Rats & Mice Rodents, but Different

Rats	Mice
<ul style="list-style-type: none"> <li>• Mostly outdoors</li> <li>• Cautious (paranoid)</li> <li>• Food: 0.5–2.5 oz daily</li> <li>• Drink 1 ounce of water daily</li> <li>• Entry size: ½”-1” gap (quarter)</li> <li>• Travel up to 450 feet from their burrow</li> </ul>	<ul style="list-style-type: none"> <li>• Mostly indoors</li> <li>• Curious/cautious</li> <li>• Food: 0.1 oz daily</li> <li>• Rarely drink</li> <li>• Entry size: ¼-½” gap (dime)</li> <li>• Travel 10-30 feet from their nest</li> </ul>

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## Rodents commonly found in homes

**Norway rat**

**House mouse**

**Deer mouse**

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## Rats



**Roof rat**

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**Pack rat or wood rat**

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**Norway rat**

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## Woodrat or “pack rats”


- Relatively large ears
- Furred tails
- Habit of gathering items for their nests.
- Some drop what they have for shiny objects.

Big-eared woodrat





Desert woodrat



White-throated woodrat



Bushy-tailed woodrat



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## Droppings: Norway vs Roof vs Wood rats

- Can be similar widths and lengths
- Norway droppings are generally larger
- Roof rat-pointed ends
- Norway rat-rounded
- Wood rat droppings can vary but more tear drop shaped



Norway rat



Roof rat



Wood rat

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## Signs of Rodents

- Sightings
- Noise
- Gnaw marks
- Holes
- Nests
- Rat burrows
- Droppings
- Dog or cat alerts
- Rub marks
- Indicator pests
- Smell



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## Droppings and Urine stains



Rodent urine stain in dropped ceiling



Mouse droppings

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## Holes and Rub Marks



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## Got Rodents? Now What?

- No single answer
- Use the IPM log
- Use solutions that provide:
  - Most effective prevention and control
  - Compatibility with people, pets, and other control measures

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## Everyone should report sightings

- ☛ Identify:
  - Rat or Mouse
- ☛ Location & Date
- ☛ How Many
- ☛ Obvious food source
- ☛ Note Action Taken
- ☛ Follow-up



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## Staff and PMP: Inspect and find out where they are getting in

- Outside: utilities, pipes, doors
- Inside: appliances, heaters, corners, closets & basement
- Where have you seen them?
  - Mice rarely travel more than 10 feet from their nest for food



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## How do rodents get in?



Find the gaps



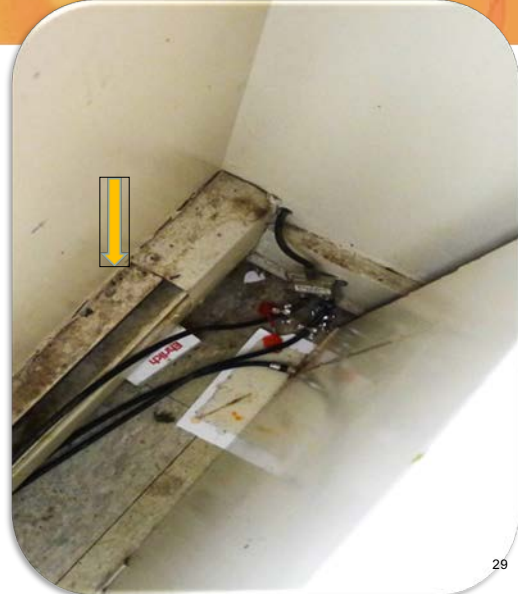
Fill the gaps



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## Once inside, where do they live?



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## Does Anyone Check Under the Hood?

Abundant mouse feces below the stove burner plate

This volatilizes into the air when the stove heats up



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### Where do they live?



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### Signs of Mice in Stoves



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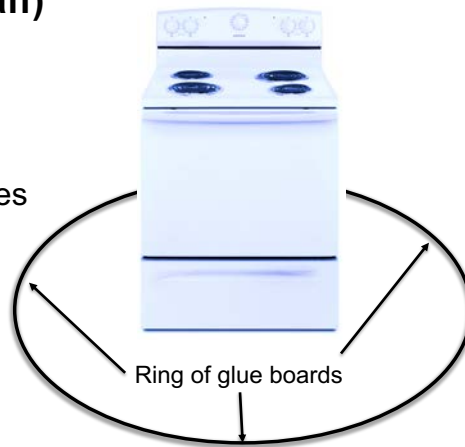
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## Infested Stoves: Replace or Clean Out?

### Clean out? (PMP or staff)

- Surround the stove with a ring of sticky traps
- Remove the sides of stoves that need to be cleaned
- Mice are caught on sticky traps as they run out



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## Exclusion: repairing holes, cracks, and gaps



**Stuff it**



**Seal it**



**Check it often**

- Start on the outside of the building and work in (opposite for rats, don't trap them in!)
- Use appropriate materials
- **No spray foam**



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## Exclusion materials

Deny, deny, deny  
&  
Maintain, maintain,  
maintain



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## Resident's Role

- Clean up spilled food right away
- Wash dishes and cooking utensils soon after use
- Keep outside cooking areas/grills clean
- No pet-food or water bowls out overnight
- Thick plastic or metal garbage can with a tight lid
- Keep compost bins away



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# Sharing Information

## House Mouse

House mice are well-adapted to living in close contact with humans and thrive where food and shelter are abundant. They eat and contaminate food supplies and also can transmit disease. Their gnawing activities may damage structures or property. Manage them by cleaning up debris, removing food and shelter, eliminating entryways into buildings, or using traps or baits. High frequency electronic devices are not effective.

**How to detect a house mouse infestation**

- Look for droppings, fresh gnaw marks, and tracks, which indicate areas where mice are active.
- Search behind boxes, in drawers, in garages, or around woodpiles for nests made of finely shredded paper or other fibrous material.
- Check for musky odors associated with mice.
- Mice are most active at night, but you can see them during daylight hours.

**Discourage mice by removing food, water and shelter and sealing entryways.**

- Good housekeeping within buildings reduces shelter and food for house mice.
- Seal all structural cracks and openings larger than 1/8 inch. Use wire screen or coarse steel wool that mice can't chew through.
- Ensure doors, windows, and screens fit tightly.
- Feed pets only the amount of food they will eat at a single feeding.
- Seal all food storage and garbage containers.
- Thin or remove plants next to or climbing up buildings, since house mice are excellent climbers.

**Remove mice from your home by trapping.**

- Snap traps and glue boards are the safest and most economical.
- Place traps in secluded areas along walls, behind objects, in dark corners, and in places where you find droppings.
- Bury dead rodents or place them in plastic bags and put them in the garbage. Do not touch mice with your bare hands, and wash hands thoroughly after handling traps.

**What about poison baits?**

- Avoid using baits indoors. Mice can die in hidden places, create bad odors, and be difficult to locate. Seal buildings before baiting outdoors to prevent mice coming indoors to die.
- Baits generally take several days for effective control.
- Place baits in camper-proof bait stations out of reach of children and pets. All rodent baits are toxic.

See Pest Notes: House Mouse at [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu) for complete instructions on carrying out these practices.

The house mouse (left) has almost no hair on its tail and no white markings. The carrier of the deadly hantavirus, the deer mouse (right), has a white underside, more hair on its tail, and a rare in humans.

Set traps with the trigger next to the wall. Increase your chance of success by using two.

Minimize the use of pesticides that pollute our waterways. Use nonchemical alternatives or less toxic pesticide products whenever possible. Read product labels carefully and follow instructions on proper use, storage, and disposal.

For more information about managing pests, contact your local Cooperative Extension office listed in your phone book or at [www.csees.usd.edu/Extension/index.html](http://www.csees.usd.edu/Extension/index.html). If you have a question about choosing a pesticide, contact the National Pesticide Information Center at 1-800-858-7378 or via e-mail at [npic@ace.orst.edu](mailto:npic@ace.orst.edu).

**What you use in your home affects the health of those around you!**

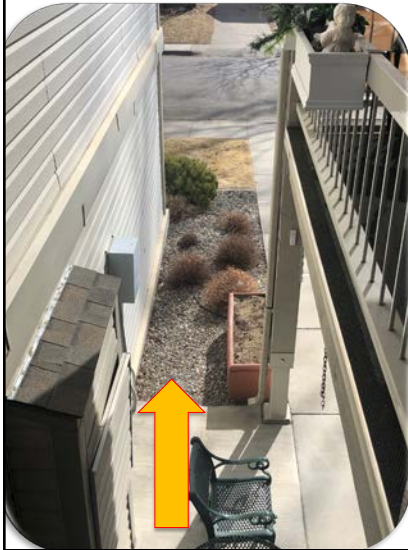
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# Trash and recycling

- Dumpster check:
  - ✓ Free of holes
  - ✓ Covered
  - ✓ Placed on concrete
  - ✓ Monitored
- Empty recycling and dumpsters regularly
- Keep recycling bins clean and covered

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## Landscaping



- Monitor for rat burrows
- Report problems
- Plant choice

- ✓ Doesn't offer coverage for rodent travel and burrowing
- ✓ Never touching the building



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## Traps

- Effective and reusable
- Leave unset until bait is eaten
- More ARE better
- Check often
- Placement is key
  - Place the trap **against the wall** where rodents travel.
  - The bait side of the trap should touch the wall.



Trap set correctly so it snaps toward the wall

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## About Glue Boards...



- May catch an occasional **rat** but they won't "stick" around.



- Mostly catch juvenile **mice**
- Tells us nest is close by
- How will your resident cope?

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## About Ultrasonic Repellants...

- Just don't.



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## Targeted Chemical Use with Rodenticides

- **The label is the law**
- PMP ONLY
- Most require tamper-resistant stations
- Bait station should be:
  - ✓ Secured
  - ✓ Locked
  - ✓ Labeled
- Rodents nesting inside? PMP could use traps in box

Dry ice used in a rat burrow.  
(NBC Chicago)



Opened bait station  
(only PMPs should open bait stations)

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## Do bait boxes work?



Not if the rodents are already inside the building

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## Do bait boxes work?



Not if they're never serviced

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## CDC Recommendations for Cleaning Mouse Urine and Droppings

- Trap rodents one week and exclude
- Ventilate (open doors and windows)
- Don't stir up by vacuuming or sweeping
- Wear an N-95 mask and latex gloves
- Spray the nest, urine, and droppings with disinfectant or a mixture of bleach and water, let soak 5 min or follow label
- Use a paper towel to pick up the urine and droppings
- Dispose of waste in sealed bag



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## A Review: Effective IPM Tools

- Sanitation:
  - Eliminate food source/eliminate rodents
- Exclusion:
  - As important as sanitation
- Traps:
  - Proper placement is critical
- Rodenticides:
  - Last resort, not highly effective without sanitation and exclusion, PMP only

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## Spiders!



Wolf spiders are large, common,  
but harmless to humans



Jumping spider eating a fly


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## Spiders

### Western black widow, *Latrodectus hesperus*


- Common in California homes and landscapes
- Bites are rare
- Venom contains a neurotoxin
  - *Symptoms*: muscle spasms, profuse sweating, cramping
- Sexual dimorphism



Immature  
(Photo by Rick S. Vetter)



Male  
(Photo by Rick S. Vetter)



Female  
(Photo by Rick S. Vetter)


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## Spiders

### Brown widow, *Latrodectus geometricus*

- Newer to California, mostly in Southern CA homes and landscapes
- Venom is less toxic than black widow

Feature	Brown widow	Black widow (immature)
Black spots on lateral abdominal stripes	large, squarish	small, elliptical
Hourglass	bottom half larger	top half larger
	rough margins	crisp, straight margins
White markings on front of abdomen	not continuous	continuous



Mature female  
(Photo by Rick S. Vetter)

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# Spiders



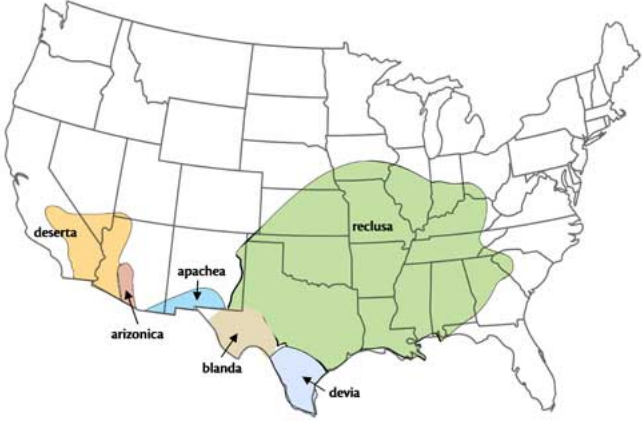
Sac spider, *Cheiracanthium* sp.  
 Common in the household  
 Painful bite (like a bee sting)

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# Spiders

## Brown recluse and other recluse spiders, *Loxosceles* spp.

- Brown recluse DOES NOT occur California
- Bites are rare



(Photo by Rick S. Vetter)

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# Best tools...



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# Spiders Pest Notes

<http://ipm.ucanr.edu/PMG/PESTNOTES/pn7442.html>

UC IPM Home > Home, Gardens, Landscapes, and Turf > Spider

### How to Manage Pests of Homes, Structures, People, and Pets

#### Spiders

Revised 10/20

In this Guideline:

- Identification
- Management
- Spider bites
- About Pest Notes
- Publication
- Glossary
- Common garden spiders
- How to catch a spider
- How to clean up spider webs

Many people fear or dislike spiders but for the most part, spiders are beneficial because of their role as predators of insects and other arthropods, and most cannot harm people. Spiders that might injure people—for example, black widows—generally spend most of their time hidden outside homes in woodpiles or in clutter in the garage. The spiders commonly seen out in the open during the day are unlikely to bite people.

#### IDENTIFICATION

Spiders resemble insects and sometimes are confused with them, but they are arachnids, not insects. Spiders have 8 legs and 2 body parts—a head region (cephalothorax) and an abdomen. They lack wings and antennae. Common spider families are described in Table 1.

#### Black Widow Spider

The black widow spider, *Latrodectus hesperus*, is the most common harmful spider in California. Venom from its bite can cause reactions ranging from mild to painful and serious, but death is very unlikely and many symptoms can be alleviated if medical treatment is obtained. Anyone bitten by this spider should remain calm and promptly seek medical advice. It is helpful if the offending spider can be caught and saved for identification by an arachnologist.

The typical adult female black widow has a shiny black body, slender black legs, and a red or orange mark in the shape of an hourglass on the underside of the large, round abdomen. In contrast, immature and male western black widows have white stripes on a tan abdomen and look very different from the adult females. Only the larger immature female and adult female spiders are able to bite through a person's skin and inject enough venom to cause a painful reaction.

The adult male black widow is one-half to two-thirds the length of the female, has a small abdomen, and

UC IPM Pest Notes, Publication 7442 UC IPM

## Spiders

Integrated Pest Management for Home Gardeners and Landscape Professionals

Many people fear or dislike spiders (Figure 1) but for the most part, spiders are beneficial because of their role as predators of insects and other arthropods, and most cannot harm people. Spiders that might injure people—for example, black widows—generally spend most of their time hidden outside homes in woodpiles or in clutter in the garage. The spiders commonly seen out in the open during the day are unlikely to bite people.

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Most spiders have venom which they use to kill their prey. However, with these spiders whose venoms typically cause a serious reaction to humans are called "toxic" spiders. See Spider Bites.

#### Black Widow Spider

The black widow spider, *Latrodectus hesperus* (Figure 2), is the most common harmful spider in California. Venom from its bite can cause reactions ranging from mild to painful and serious, but death is very unlikely and many symptoms can be alleviated if medical treatment is obtained. Anyone bitten by this spider should remain calm and promptly seek medical advice. It is helpful if the offending spider can be caught and saved for identification by an arachnologist.

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The adult male black widow is one-half to two-thirds the length of the female, has a small abdomen, and is seldom bited. The male black widow does possess venom, but its fangs are too small to break human skin.

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## Audience questions?

The screenshot shows the StopPests.org website. The main navigation bar includes 'Webinars', 'Request Training', and 'Pest Solutions'. A featured article titled 'News You Can Use' discusses 'Pest Control Operations and Social Distancing in Multi-Family Housing During the COVID-19/Coronavirus Outbreak'. The sidebar on the right lists 'Home, garden, turf, and landscape pests' and provides 'QUICK LINKS' such as 'Pest Notes library', 'Quick Tips library', and 'Video library'. A large question mark graphic is overlaid on the right side of the screenshot.

Use chat feature!  
 Visit StopPests.org  
 &  
 ipm.ucanr.edu

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## Poll #3

Will the information you got from this training improve how you deal with spiders or rodents at work?

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## Contact us!

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