



INTEGRATED PEST MANAGEMENT: RODENTS

The most common rodent pests are the roof rat, the Norway rat and the house mouse. Mice are more common and more difficult to manage than rats. To protect the health of children and staff in early care and education (ECE) facilities, we need strong integrated pest management (IPM) programs to manage rats and mice.

When are rodents a problem?

Rats and mice can damage buildings, food, clothing and documents by gnawing, urinating, defecating and nesting. Because they gnaw on hard objects, such as plastic electrical boxes, they can cause fires. Rats bite more than 4,000 people a year, mostly young children. The urine, saliva and dander of rats and mice may also trigger asthma attacks. House mice may spread lymphocytic choriomeningitis, a viral disease that causes inflammation of the membrane that surrounds the brain and spinal cord. The disease can be transmitted from pregnant women to their unborn infants, and is an under-recognized cause of hydrocephalus (a buildup of fluid in the brain) in newborns. Mice can also cause salmonellosis, a form of food poisoning.

Characteristics and habits

Rats often live in packs, so if you see one, there are likely to be more around. Rats and mice reproduce often. If not properly managed, a rodent infestation will rapidly increase. Mice are 10 to 20 times more common than rats in indoor environments. Rats and mice are most active at night. If you see them during the day, you probably have a serious infestation.

IPM strategies

Many people use poisons to get rid of rodents, but this won't solve a rodent problem without a comprehensive IPM plan. If rodents are killed, but their food and water, and a place to live are still available, it's likely that other rodents will soon appear.

1 KEEP RODENTS OUT

Rodents enter buildings through holes in walls, around pipe entries, through sewer outlets and under doors. Mice can fit through a hole as small as ¼-inch. Rats fit through a hole as small as ½-inch.

- ▶ Use metal flashing, hardware cloth and copper wool to seal floor drains, vents, holes and gaps around pipes.
- ▶ Install a doorsweep under each exterior door.
- ▶ Seal cracks in the foundation and openings to keep rodents from entering the building.

2 REMOVE RODENTS' FOOD

In most areas, garbage is the main source of food for rats.

- ▶ Discard food waste in indoor and outdoor eating areas in domed-lid trash containers lined with plastic bags.
- ▶ Clean garbage cans and dumpsters frequently to prevent the build-up of food waste.
- ▶ Keep dumpsters on hard concrete surfaces away from the building.

3 MONITOR

Look for:

- ▶ rodent droppings.
- ▶ burrows in the ground.
- ▶ nests in ivy or around cluttered areas.
- ▶ fruit or nuts that have been gnawed on.

4 IDENTIFY WHAT KIND OF RODENT YOU HAVE



Norway rats are the best burrowers and stay in the basement or ground floor.

Roof rats are clever climbers and like enclosed elevated spaces in attics, walls and false ceilings.

Mice can run up any rough, vertical surface and nest in enclosed places such as drawers and boxes.



[IPM strategies continued]

5 GET RID OF RODENTS

- ▶ **Traps:** Use snap traps baited with food (peanut butter is a good bait).
 - ▷ Always wear gloves when handling traps to protect yourself from diseases.
 - ▷ Place traps near openings rodents use to enter buildings and between walls and equipment, with the baited end perpendicular to walls so rodents will be caught coming from either direction.
 - ▷ Set traps behind objects, in dark corners, and in places where there’s evidence of rodent activity. Make sure traps are placed out of children’s reach.
 - ▷ To improve success with catching rats, put out traps with bait such as peanut butter, but do not set the traps for several days until the rats are used to them.
 - ▷ Use enough traps to make the trapping period short and productive in managing your rodent problem. Empty and reset traps daily until no more rodents are caught; then check them weekly.

- ▷ Mice seldom venture far from their shelter and food supply, so space mouse traps no more than 10 feet apart in areas where mice are active.
- ▶ **Baits:** If the rodent infestation is severe, baiting may be necessary, and should be done by a pest management professional (PMP) who knows how to use these poisons safely.
 - ▷ Baits must be placed out of children’s and pets’ reach and in tamper-resistant bait stations.
 - ▷ Rodenticide baits shouldn’t be used indoors because a rodent could die inside the walls or ceilings. Carcasses attract flies, which then may infest the entire building if the carcass isn’t removed quickly.

6 CLEAN UP AFTER RODENTS

Don’t sweep or vacuum rodent droppings, urine or nesting materials; they can carry diseases. Sweeping or vacuuming will stir up dust and increase your chance of inhaling viruses. Wear gloves and spray the urine and droppings with a mixture of 1 part bleach to 10 parts water. Let soak 5 minutes. Use a paper towel to pick up the urine and droppings and dispose of them in the garbage. Mop floors with a bleach solution. Remove and dispose of gloves and wash hands.

ACTION PLAN FOR RODENTS

WHEN TO TAKE ACTION	NONPESTICIDE PRACTICES	LAST RESORT
▶ If you see one rodent.	<ul style="list-style-type: none"> ▶ Clean up cluttered areas. ▶ Sanitize and keep things clean. ▶ Seal all cracks and openings that are bigger than ¼ inch. ▶ Identify rodent pathways by looking for rub marks or trails of urine. ▶ Use traps and make sure they are out of children’s reach. 	<ul style="list-style-type: none"> ▶ Contact a PMP to help with rodenticides. Rodenticides can be used outdoors, but should be placed in a tamper-resistant bait station and secured to a concrete block. ▶ Make sure to check the bait stations and replace baits at least once a month to ensure freshness of the bait.

<p>RESOURCES</p> <p>DPR Pest Info, IPM for Schools—<i>Preventing Mice and Rats from Invading Your School</i> www.cdpr.ca.gov/docs/pestmgmt/pubs/rats_color.pdf</p>	<p>University of California Statewide IPM Program, Pest Notes: <i>Rats</i> www.ipm.ucdavis.edu/PMG/PESTNOTES/pn74106.html eXtension School Integrated Pest Management Action Plans http://www.extension.org/pages/School_Integrated_Pest_Management:_Action_Plans</p>
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