

# House Mice

Gary L. Heilig Horticulture Educator  
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## House Mice Control

The house mouse is thought to have originated in the grassy plains of central Asia somewhere near the Iran and Russia border. It was transported west on ships of early trade merchants and immigrants. Because of its small size, adaptability and the fact that it needs extremely small amounts of food and space, the mouse is capable of surviving in nearly any environment. With the exception of man, the house mouse is the most numerous and widespread mammal on earth. The house mouse is our "number one" rodent pest. The house mouse is identified by a small slender body that weighs about .5 to 1 ounce as an adult. The ears are large and the tail is semi-naked and is as long as the head and body together.

## General Biology and Reproduction

As with all pests, it is very important to understand the biology and behavior of rodents in order to develop effective control programs. The reproductive capabilities of the mouse are impressive. When living conditions for mice are very good (plenty of food, water and shelter) these rodents can multiply rapidly. When living conditions are stressful, overall rodent reproduction and population growth are slowed considerably. A female produces between four and seven pups per litter following a gestation period of about 19 days. Their babies are born blind and naked. Within 7-10 days they are covered with fur; the eyes and ears are open. By the third or fourth week the babies are weaned and begin to take short trips outside of the nest feeding on solid food and exploring and learning their environment. A female will produce about eight litters in her lifetime. Young mice are sexually mature within 5-8 weeks. The normal life span for a mouse is about one year or less.

## Mouse Behavior

The behavior of rodents is dependent upon each situation and environment. In cities, the mouse may spend its entire life living within buildings. In suburban and rural areas, the mouse may live in buildings, but also commonly lives outdoors among the weeds and shrubbery or nearby building foundations, within storage sheds, garages and crawl spaces below structures. Outdoor mice feed on weed seeds, insects, or whatever, other foods may be found. Some mice move into buildings, when their food supply becomes scarce in the fall (especially in the colder climates).

Inside buildings, mice set up their nests near food sources, and once established, they stay close to home, traveling short distances between the food and the nest. Good nests are very important to the reproductive success and survival of mice. Nests provide warmth and protection to the mother and her babies. Inside buildings, nests are commonly located within walls, closets, ceiling and cabinet voids, within large appliances, in storage boxes, bureau drawers or within the furniture.

As a mouse population grows, territories are set up and controlled by the dominant male and one or more subordinate males or females. Young mice leaving the nest must fight to take over the territory of another mouse. This is how mouse infestations spread from one part of a building to another. The size of a mouse's territory within a building will vary from one situation to another. A mouse territory will be between 10-30 feet from a nest. However, the more mice and food, the less territory each has. So, some mice with a good food supply may only travel a few feet from a nest.

Mice explore and re-explore their home territory daily and when changes occur, the mouse reacts by investigating the changes. Mice feed by "nibbling" on their food, making 20-30 or more short visits to various food sites randomly nibbling at each site. At their favorite feeding sites you will find a pile of droppings and a strong odor. Mice feed during the night with the heaviest activity occurring at dusk and again shortly before dawn. If the building is well lit at all times, then they will feed during the quietest periods. An adult mouse consumes about 3-4 grams of food daily. Mice will eat almost anything, including each other. The house mouse requires extremely small amounts of water to survive. When free water is available, they will seek out and eagerly drink between 3 and 9 milliliters per day. But mice can survive without water in most urban environments because they can satisfy their water needs by extracting water from their food.

### **Control and Management**

There are ten rodent signs that you can use to help determine if you have a problem. Look, smell or listen then inspect the building for: (1) droppings; (2) tracks; (3) gnawing damage; (4) burrows; (5) runways; (6) grease marks; (7) urine stains; (8) live or dead rodents; (9) rodent sounds; and, (10) rodent odors.

Good housekeeping practices are an absolute must in controlling mice. Only using poisons to control mice is not a complete answer to your problem. You must eliminate their food and shelter sources. Because mice require such small amounts of food, it is even more important that you control their sheltering areas. Start with the outside by clearing away all the rubbish piles and garbage and wood piles from around the house. Plug up any openings in the foundation and basement walls with coarse steel wool, sheet metal, hardware cloth or mortar. Place screening over vents. Rodent proof garbage cans and dumpsters with tight lids and keep the bird seed in a secure container. Mow the grass, weeds and other vegetation around the house.

Indoor shelters must be identified and eliminated or modified. Such areas as obscure corners, shelves, under and in cabinets, worktables, lockers and equipment must not be overlooked or neglected as they are dark areas ideal for rodent shelters. Place rags, dog or cat food in a tight lidded container not a plastic bag.

Population reduction using a non chemical control involves trapping the critter. Trapping is the most effective method of controlling mice. Trapping offers some unique advantages in control programs. For example: (1) traps are safe; no potentially hazardous baits are used; (2) traps provide quick results; and (3) traps allow for immediate disposal of the dead critter. The biggest draw back of the trapping is in the case of a severe infestation where trapping can be too labor intensive and time consuming to be of practical value unless poison baits are not allowed to be used. There are three types of traps: (1) common snap trap; (2) automatic, multiple-catch traps; (3) glue board traps. Traps should be placed in mice active areas, such as dark corners, along walls, behind appliances and furniture, underneath kitchen sinks, and in food cabinets. Traps should be spaced about 10 feet apart. Place traps so mice will pass over the traps in their natural course of using their runways. For example, traps should extend from a wall at a right angle with the trigger end nearly touching the wall. If traps are set parallel to the wall, set them in pairs with the triggers situated to intercept mice coming from either direction. Traps can be fastened to rafters, beams and pipes with wire. In situations where food for mice is not readily available (basements and attics), use baits that give off an aroma such as bacon, nuts, hot dog or peanut butter. Tie the bait to the trap with dental floss. (Mice have an uncanny ability to remove unsecured bait without setting off traps.) In situations where food is abundant use nesting materials such as cotton, styrofoam or any soft material that would act as a nesting material (tie this to the trap with dental floss too). After a bit mice will become "trap shy" so you may need to camouflage the trap. Try placing the trap in a shallow pan of meal, grain or sawdust. Place baits in several small amounts on top the pan with the trap unset. Once the bait is taken, place bait in the pan directly over the trigger of the set traps.

Automatic, multiple-catch traps are specifically made for catching mice. They are especially useful in severe infestations where long term and continual protection is required. Mice enter multiple catch traps because they are curious to investigate a new "hole" in their territory. In heavy infestations these traps can catch up to 15 or more mice. Be sure to check these traps often, because the smell of dead mice will repel other mice from entering.

Glue boards will often work where other traps or baits have failed. Glue traps should not be used in areas where there is excessive dirt, dust, or water as these factors often reduce their effectiveness. Extremely hot or cold temperatures may also decrease the effectiveness of some glue boards. They should be placed in the same manner as snap traps-that is in the runways and high activity areas. Baits should be placed in the center of the glue boards. Glue traps should not be placed in areas where children and pets will have contact with them, nor should they be placed in high visibility areas.

#### **Additional tips using rodent traps:**

- Before starting a trapping program, eliminate as many sources of food as possible to encourage mice to explore and forage for food and to take the bait on the traps.
- Keep traps clean and in good working condition.
- Store traps in plastic bags to avoid absorbing repellent odors.
- Don't use traps with warped bases. The wobbling will frighten the mice away.
- Avoid handling dead mice with bare hands to prevent contact with diseases.
- Do not touch pets prior to handling traps. Human and dead rodent odors on traps do not cause a reduction in catch. BUT, the odors of natural predators such as cats and dogs on traps may scare mice off.
- Glue traps can be stored in vehicles during warm weather by placing them inside Styrofoam coolers containing gelatin ice packs.

Anticoagulants cause death in mice by disrupting the normal blood clotting mechanisms causing the mice to die of internal bleeding. You may purchase these baits at almost any store that carries the snap trap and the glue boards. Mice will die slowly over a couple of days without any pain. They do not associate their weakened condition to their food supply, so they will return again and again to the baited food supply. Anticoagulants are relatively low in hazard to people and pets. If your pet appears to have some symptoms from this bait they should see your vet immediately, because a quick remedy is vitamin K1 and or blood transfusion to reverse the effects of the bait.

From a practical standpoint, it is questionable whether or not ultrasonic devices will provide any additional mice control beyond that which is achieved with a well-implemented IPM program-especially when you consider the expense of the ultrasonic devices and their installation costs.

Cats and dogs will kill mice. However, they will not provide effective control in most situations. It is common to find rodents living in very close association with dogs and cats because they can obtain their food and water from the pet's dishes or from what the pet spills. Mice will outnumber the single dog or cat in your home, making it impossible for them to get them all.

Information updated by Gary L. Heilig, Ingham Co. MSUE  
Horticulture Educator



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