Facts About:
Controlling Rats and Mice

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Characteristics

The Norway rat, roof rat, and house mouse (Family Muridae) are generally referred to as commensal rodents.

These animals are not native to the Americas. The roof rat probably reached North America from Europe prior to 1700. The Norway rat and house mouse invaded the United States about 1775.

Each year rats and mice eat or contaminate vast quantities of food, feed, and fiber originally intended for man's use. In addition, rats act as a vector for 46 different diseases that affect man or his domestic stock. The roof rat is credited with causing more deaths than all the wars of history.

Rats and mice have very poor eyesight with clear vision limited to less than a foot. However, they can detect motion several feet away. Their other senses (taste, touch, hearing, and smell) are very well developed. They are also excellent climbers, swimmers, and jumpers. An adult rat can reach about 18 inches, jump two feet vertically and eight feet horizontally.

Norway rats prefer to live at or below ground level and will burrow under shallow building foundations to gain entrance. Roof rats are more arboreal and will generally be found in the upper stories of buildings.

One way to distinguish the Norway rat from the roof rat is by their tail length. The roof rat's tail is longer than its head and body. The Norway rat's tail is shorter than its head and body.

Commensal Rodent Control

A complete rat and mouse control program requires three steps: sanitation, rodent proofing, and population reduction.

Sanitation

The first step in rat and mouse control is a cleanup program. Rats and mice find shelter in or under old lumber piles, stacked firewood, piles of old papers, boxes, bags, broken-down sheds, trash dumps, abandoned vehicles, or other trashy areas. All such areas must be eliminated. Once all areas of potential rat harborage outside have been cleaned up, check inside buildings and such places as grain bins, barns, and poultry houses. Any accumulation of trash, garbage, or spilled feed should be cleaned up. Particular attention should be paid to areas of reduced accessibility such as under sinks, or behind large appliances - washers, dryers, stoves, freezers, etc. Small quantities of livestock feed or garden produce should be stored in large metal cans with tight covers. Large quantities should be stored on raised shelving or in rat proof feed bins.

A good cleanup program will greatly reduce rat and mouse problems. But remember, this must be an ongoing program—once an area is cleaned up, keep it clean.

Reducing or eliminating rat or mouse food and cover without reducing their numbers will only spread the problem. ***Therefore, the sanitation and population reduction programs should be conducted simultaneously.***

Rodentproofing

Rodentproofing means stopping the movement of rats and mice into buildings or other areas where they are not wanted. Young rats can squeeze through an opening 1/2 inch in size, and mice through 1/4 inch openings. Some of the more common points of entrance are through poorly fitting doors and windows, holes around pipes and wires, vents, cracked siding, and joints between building foundations and walls. All such openings should be closed using sheet metal, hardware cloth, or cement, as the situation warrants. Doors and windows should be adjusted to close tightly.

Any sharp corners that offer a biting surface should be sheathed with sheet metal. Where feasible, building foundations should extend 36 inches into the ground or in an “L” shape 24 inches into the ground and 12 inches out. Double walled buildings need special treatment to keep rats and mice out. This space may be closed by using cement or sheet metal to close openings at the wall and floor junction.

Population Reduction

Any time population reduction is used as a control tool, the annual natural mortality must be exceeded or no overall reduction of the population will be achieved.

There are three methods generally used for population reduction: Trapping, glue boards, and oral toxicants.

Caution: Before using any pesticide, read the label and follow all manufacturers' directions for use and placement. Never place any poison where it is accessible to children, domestic animals, or non-target wildlife.

Trapping is a practical way of removing rats and mice. It is particularly useful where the exposure to poisons might be hazardous or where odors from dead animals would be objectionable. One of the most effective and versatile traps is the wooden based snap trap. The most common mistake made when using traps is not using enough of them. If too few traps are used, a trapping program will have little or no effect on rat or mouse numbers. For more information on trapping see leaflet (EH-EEP-502) “Trapping Rats and Mice”

Glue boards involve the use of non-toxic sticky substances similar to flypaper to catch rats and mice. The glue is spread on squares of tarpaper or heavy cardboard, which are then placed in active runways. As the animals become trapped, they can be killed, rolled up in the paper and disposed. Glue boards do not work well in dusty areas. They are well suited for use in food handling establishments.

Anticoagulants (multiple-dose poisons) prevent normal blood clotting. This causes the animal to die from internal hemorrhaging. Killing success with anticoagulants depends on the animal consuming a small dose for several consecutive days (rats for 7 to 10 days, mice 10 to 15 days). Because of the mode of action and low concentration of actual poisons, anticoagulants are relatively innocuous as compared to single-dose poisons.

Water-soluble forms of anticoagulant poisons may be used to supplement dry baits. They appear to be most effective during the summer months or in locations where water is not readily available. In many places it will be advantageous to expose water bait alongside dry bait. Even the exposure of unpoisoned water in this manner will often improve acceptance of the food baits.

For maximum effect, single-dose toxicants should be exposed for 24 to 48 hours to eliminate the majority of the rodent population. After the single-dose poison is picked up, anticoagulant bait should be exposed for 7 to 10 days for rats and 10 to 15 days for mice. This should eliminate almost all of the rodent pests. No toxic bait is one hundred percent effective. Trapping is necessary if every last rat or mouse is to be removed.

Bait Stations

There is no such thing as a “safe” poison - all rodenticides can kill humans, domestic stock and non-target wildlife. All poisons should be put out in bait stations. The use of bait stations reduces the accessibility of the poison to non-target animals and children. Also, they provide the cover preferred by rats and mice when feeding.