

FACT SHEET

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RODENT CONTROL ON POULTRY FARMS

Fredrick D. Thornberry, John C. Fowler,
William O. Cawley and Virgil V. Parsons*

Costly losses from rats and mice often are ignored or unnoticed by poultrymen. Rodents consume and contaminate feed and may spread diseases such as infectious bronchitis, Newcastle, cholera and coccidiosis. They also damage insulation, curtains, equipment and electrical wiring, and may destroy chicks, poults and eggs. A systematic rodent control program is an effective management tool that will pay dividends by cutting these losses.

Two species of rats, the Norway and the Alex or roof rat, as well as the common house mouse usually infest poultry houses and neighboring premises. The Norway rat and the mouse are burrowers and establish dens in accumulated poultry droppings, dirt floors of buildings, beneath foundations, walks, stacks of lumber or equipment, and in high grass and weeded areas. The slightly smaller, more agile roof rat is a climber and inhabits ceilings, rafters and sidewalls of buildings. An uncontrolled roof rat population may totally destroy insulation material in ceilings and walls within a few weeks. Rats continually migrate from wooded areas, adjacent farm buildings and surrounding poultry farms. The two species of rats seldom are found together except in large buildings, since the Norway rat has an aggressive nature and usually drives the roof rat away. House mice may be found with either rat species. Field mice and wood rats seldom enter buildings.

Rodents mature sexually at less than three months of age. The gestation periods for mice and

rats are about 19 and 21 days, respectively. Both have 10-day estrous cycles and can conceive 48 hours after parturition. Under normal conditions a pair may produce 30 to 50 offspring per year that survive to maturity.

The occasional sighting of a rat or mouse in a poultry house may indicate a large rodent population. In cage layer houses, as many as 20 adult rats per 100 layers have been exterminated at the end of a laying cycle. More than 300 rats have been removed from commercial broiler houses where rodents were infrequently seen.

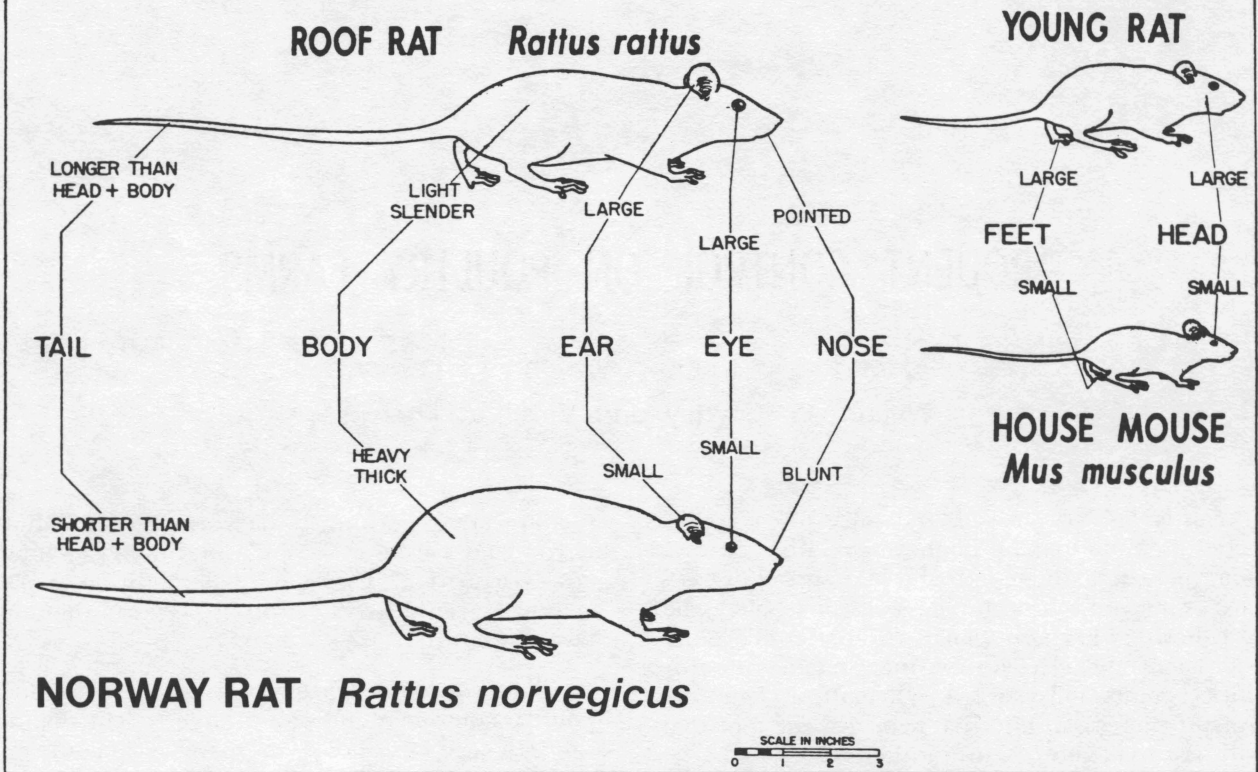
The average rat needs about 1 ounce of food and 1½ ounces of water every 24 hours. Rats weaken after 1 to 2 days without water or 3 to 4 days without food. A mouse is not so reliant on water, but eats about 10 percent of its body weight every 24 hours. If suitable food and shelter are present, rats and mice may range no more than 25 and 100 feet, respectively.

Control Measures

An effective rodent control program involves the restriction of shelter, food and water. Trapping and proper use of approved rodenticides can keep rodent populations under control in floor and cage houses and on ranges. The spilling of feed should be minimized, and all piles of lumber and trash near poultry houses or ranges removed to reduce shelter areas and sources of chronic rodent infestation. Vegetation immediately around poultry houses should be kept clipped or controlled with an approved herbicide. Some producers use cats in cage laying houses and on ranges to discourage rats

*Respectively, Extension project leader in poultry science and poultry specialist; area Extension poultry specialist, Texas A&M University Agricultural Research and Extension Center at Overton; Extension poultry specialist; and district Extension supervisor (predator and rodent control), The Texas A&M University System.

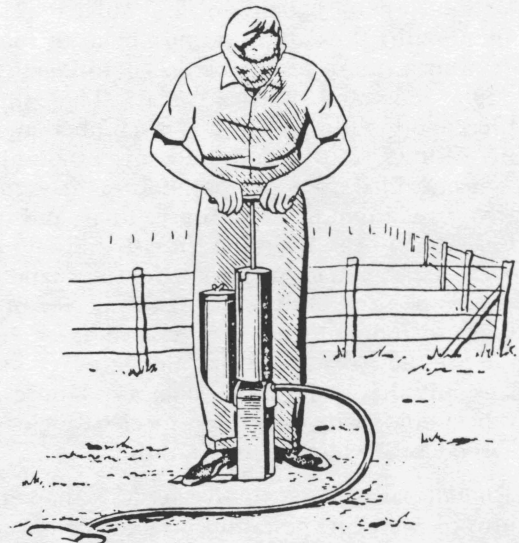
FIELD IDENTIFICATION OF DOMESTIC RODENTS



and mice. However, cats alone cannot ordinarily provide complete rat control.

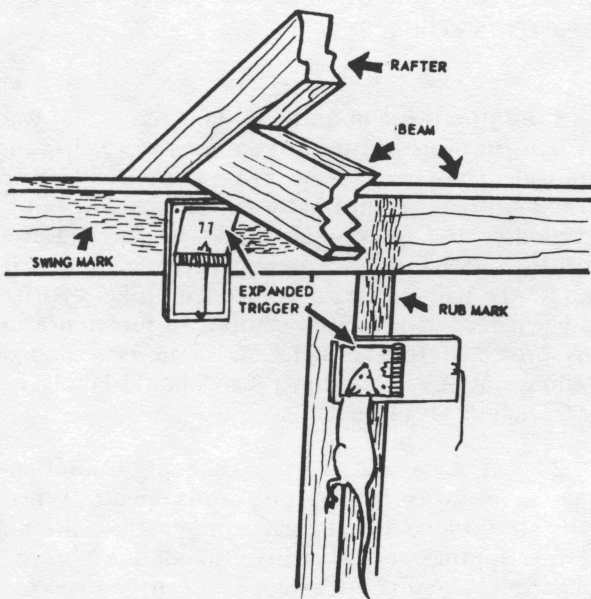
Control measures also include ratproofing buildings. Openings as small as $\frac{1}{2}$ inch will admit young rats, while $\frac{1}{4}$ -inch openings will admit young mice. Present buildings can be modified and new construction planned to prevent entry of rodents. Information on ratproofing new and existing buildings can be obtained from lumber yards, feed dealers and the county Extension office. In Texas most poultry buildings are lightly constructed and difficult to ratproof. However, using ratproof materials at likely points of entry will be of some help.

Rodents burrowing around buildings and on ranges are effectively controlled with calcium cyanide. A foot pump duster normally is used to place cyanide dust in burrows. Extreme care should be taken when fumigants are used. Do not fumigate near buildings containing poultry, and follow carefully all precautions and directions on the label. Fumigation equipment and calcium cyanide are available from agricultural chemical supply stores.



Burrowing rodents around buildings and on ranges can be effectively controlled with fumigants. Extreme care should be exercised to minimize danger to the operator and livestock or poultry in the vicinity.

Snap traps placed in concealed areas and in rodent runs along walls, rafters and on studdings assist in keeping rodent populations at a minimal level once populations are under control. Traps commonly are baited with meat, fish, peanut butter, cereal, bread, cake, fruit or cheese, and should be checked frequently. Runs are easily identified by smears or rub marks left by rats. Unbaited traps placed in runs can be made more effective by attaching a square of cardboard or tin to the trigger on each trap (Figure 3). The trap should be placed at right angles to the run, with the enlarged trigger extending across the run, since rats are more apt to cross the narrow width than the length of the trap.



Snap traps placed in runs can effectively assist in controlling rodents.

Ultrasonic and electrical shock devices are advertised for rodent control, but have not gained widespread acceptance in the poultry industry.

A baiting program using an approved rodenticide should be maintained on every poultry farm. All bait should be out of reach of farm animals and children.

Highly toxic poisons such as strychnine, zinc phosphide and sodium monofluoracetate (1080) are extremely dangerous, but are sometimes used in bait to bring large rodent populations under immediate control. Sodium monofluoracetate (1080) can be used only by licensed exterminators. Strychnine- and zinc phosphide-treated baits are available

to unlicensed personnel. Strychnine-treated grain is not effective on Norway or roof rats, although it will control mice. Extreme care should be taken when using such materials, and all precautions and directions for use followed closely.

Anticoagulant Baits

Anticoagulant baits are recommended over other rodenticides for use on poultry farms. Active ingredients in anticoagulants may include Warfarin, Pival, Fumarin, Diphacin, Prolin and P.M.P. The chemicals inhibit the coagulation of blood so that death is brought about by internal hemorrhage. Anticoagulants are relatively safe and offer little danger to farm animals, since the bait must be consumed for 3 to 10 days before a lethal dose is consumed. Bait exposure should be 10 days for rats and 15 days for mice, or until all signs of rodent activity have stopped.

Anticoagulants can be obtained as ready-mixed bait under various trade names, as a 0.05 percent concentrate to mix with fresh cereal feed at the rate of 1 pound of concentrate to 19 pounds of feed, or in a water-soluble form for use in water. Rodents do not relate their deteriorating condition to the bait and do not become "bait shy." Water and dry cereal bait anticoagulants should be used together to minimize the time required for maximum kill.

For effective rodent control, all poultry houses should be treated with anticoagulant baits each time birds are removed and houses are empty. It is important to identify the species (Norway rat, Alex rat or house mouse) involved, because each requires some variation in treatment. The following recommendations will provide maximum rodent kill:

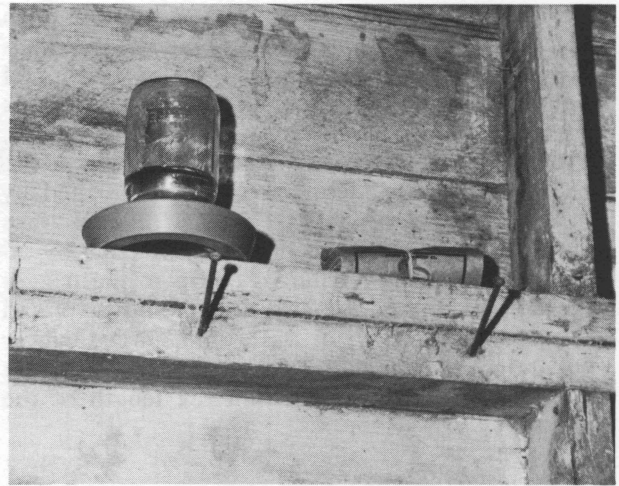
1. Remove feed, including spilled feed, and water from the premises. The rodents are accustomed to the feed and may prefer it to the bait. Also, feed contains Vitamin K which acts as an antidote for the anticoagulant.
2. For Norway rat control the dry cereal anticoagulant bait should be exposed to the rats in 1/2-pound sacks or packages. Placement inside buildings should be along walls, in corners and by burrows, but not more than 25 feet apart. Distribute at least 20 to 30 sacks per house initially. Never place bait in large sacks or open containers. This minimizes urinating and defecating on the bait. Bait placed outside buildings, by burrows under foundations, should be covered by heavy boxes with one or more small openings large enough only for rat

entry. Water-soluble anticoagulant bait placed in chick fountains, along with the cereal bait, will greatly help the control program. Four to six chick jugs per house are needed for dispensing the bait.

3. For roof rat control the same methods of bait exposure can be used, except that it may be necessary to place the water and cereal baits on the wall joists, shelves or inside ceilings. Small platforms can be constructed on rafters and walls to hold the bait (Figure 5).
4. Mice are effectively controlled with anticoagulant baits if bait stations are no more than 10 to 15 feet apart. Smaller amounts are needed. Cigar boxes with small entrances for mice have been used successfully. The boxes should be cleaned and replenished with fresh bait every 2 or 3 days, especially if mice are feeding heavily. Water-soluble bait is not as important in mouse control as in rat control, since mice require very little water other than that derived from food.
5. *Don't run out of bait.* During the 15-day treatment period, sacks should be checked daily and empties replaced. After the second or third night, uncut sacks should be removed to major feeding areas.
6. Disturb rodents as little as possible during treatment. Keep houses closed and dogs, cats and people out.



These anticoagulant cereal and water baits are properly placed for Norway rats and mice.



These anticoagulant cereal and water baits are properly placed for roof rats.

Continuous use of anticoagulant cereal and water baits in protected feeding stations will help control rodent populations in laying houses and other farm buildings. Continually baited areas in poultry houses and on ranges should be checked frequently and a supply of fresh anticoagulant cereal and water bait maintained. Rodents like security and will feed at protected stations in preference to less protected feed troughs and waterers. Baited feeding stations on poultry ranges should be placed near shelters and feeders.

The effectiveness of anticoagulants cannot always be measured by counting dead rodents. When baits are no longer being eaten, when there are no fresh droppings and when live rats or mice are no longer seen, results are as good as can be expected from any rodenticide.

Important factors in preventing rats and mice from reinfesting buildings are:

- Dispose of refuse and dead birds properly.
- Store feed properly.
- Minimize feed spillage.
- Maintain bait stations with effective rodenticides all year.
- Ratproof buildings if possible.
- Destroy rat shelter areas.

Sources of traps and baits can be obtained from the local county Extension agent.

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