

Poultry Engineering, Economics & Management

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Critical Information for Improved Bird Performance Through Better House and Ventilation System Design, Operation and Management

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Simple Steps to Stop Rodent Damage!

By Jess Campbell, Dennis Brothers, Jeremiah Davis, Jim Donald & Gene Simpson

Don't allow rodents to ruin your investment! Poultry farms are excellent places for rodents to not only survive but THRIVE – unless you are taking the necessary precautions to prevent them from calling your farm home. Poultry houses are warm in the winter, cool in the summer, provide plenty of food and water, have almost unlimited places to hide, and on some farms, have virtually no predators. That is, unless you are on top of your rodent control program. If you can't remember the last time you restocked your bait stations and you have been seeing signs of rodents lately, you might be surprised to find out just how many have infested your farm. If you see just one rodent during the day there are likely hundreds and possibly thousands more living on your farm, eating up feed and causing damage. You likely have a much bigger problem than you realized and it is time to focus on your rodent control program.

Rodent Problems to Consider

Rodents Harbor and Transmit Diseases: Rodents can easily contaminate feed and water with urine and feces. They carry diseases such as salmonellosis, colibacillosis, coryza, pasteurellosis, mycoplasmosis, hemorrhagic enteritis, hymenolepiasis, capillariasis, and ascaridiasis. Because of their ability to harbor many pathogens, rodents also can carry over disease organisms from one flock to the next flock, even if the facilities are vigorously cleaned and disinfected. Rodent control should be a part of the disinfection program to eliminate disease carry over.

Rodents Eat Feed: A single rat can eat as much as 40 pounds of feed a year. That is the equivalent feed consumed by four 5-pound broilers in one flock. Some experts say that for every rodent you see there are likely 50 or more that you don't see. So, if one rat eats 40 pounds of feed a year, then his colony is eating at least 2,000 pounds of chicken feed every year (at \$300/ton). Are rodents eating away at your flock feed conversion and income? Rats eat breeder eggs too!



Rodents consume feed and cause damage to the house and equipment, both of which will hurt flock performance. Even more serious is the risk of catastrophic losses by transmitting disease to the flock, or by damaging electrical wiring and equipment.

This photo shows how a rodent has chewed through the exterior sheath of insulation on this black cable as well as the insulation directly surrounding the red and blue wires inside the cable, exposing the copper on both wires. The scary thing is these are the main alarm wires running from the control room.

Alarm failure could cost this grower \$10,000 in lost income, not including cleanup costs following a total flock loss.

Rodents Cause Damage by Constantly Chewing: The upper incisor teeth of rodents continue to grow throughout their life and they must continually chew to keep their teeth from becoming too long, so they chew on poultry houses and equipment such as lumber, insulation, electrical and control wiring, ceiling material, curtains, and rubber tunnel door seals. They may be living in your generator shed and chewing on the actual generator or transfer switch. Rodents have been known to cause fires by chewing on electrical wires, and can do serious damage to generators and transfer switches putting your farm at risk of a catastrophic electrical failure.

Rodents Are Elusive and Nocturnal: Rodent infestations are not always apparent until we find the obvious signs of damage to the houses or equipment on the farm. There are literally hundreds of places they can hide from us. They may have a nest in the attic of a house like the one in the picture below. They can burrow in the dirt pads, litter, and any small crevice and go unseen. Much of the damage that is done by rodents is done at night when we are away from the farm, the lights are off, and the birds are not active. Are rodents working behind the scenes and on 3rd shift on your poultry farm?

Rodents Multiply Very Quickly: Rodents become sexually mature around 2 to 3 months of age with a gestation period of between 21-25 days. A single female may produce as many as 70 offspring that mature and colonize in a year. A single pair of rodents can infiltrate a poultry farm and establish a vast colony quickly and without being noticed. If you see one it is likely you are not dealing with just one mouse but an entire colony or more! Rodents have strength in numbers! Some of these rules of thumb should get your attention: If you see –

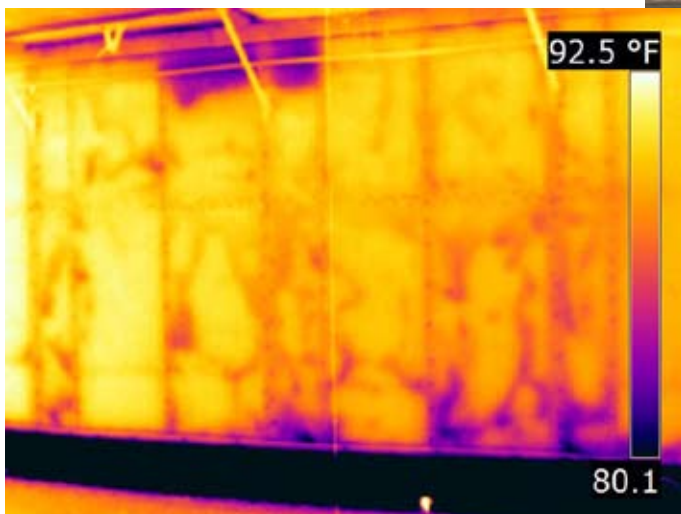
- Rodent signs only \approx 1 to 100 on the premises
- Occasional sightings at night \approx 100 to 500
- Nightly sightings and occasional daytime sightings \approx 500 to 1,000
- Several daytime sightings \approx 1,000 to 5,000



We weren't brave enough to find out the species or population in this large rodent colony in a poultry house attic. The main rodent entry way is to the left (sun shining through hole), and the main den is to the right. Don't underestimate the importance of inspecting attics and protecting them with poison.

Photo at right shows the bottom seal on a tunnel door on a house less than a year old. The rodents have damaged approximately 40% of the bottom seal.

Also notice there is no bird wire over tunnel inlet opening. That leaves one less obstacle for rodents (or birds) to worry about when they want to enter.



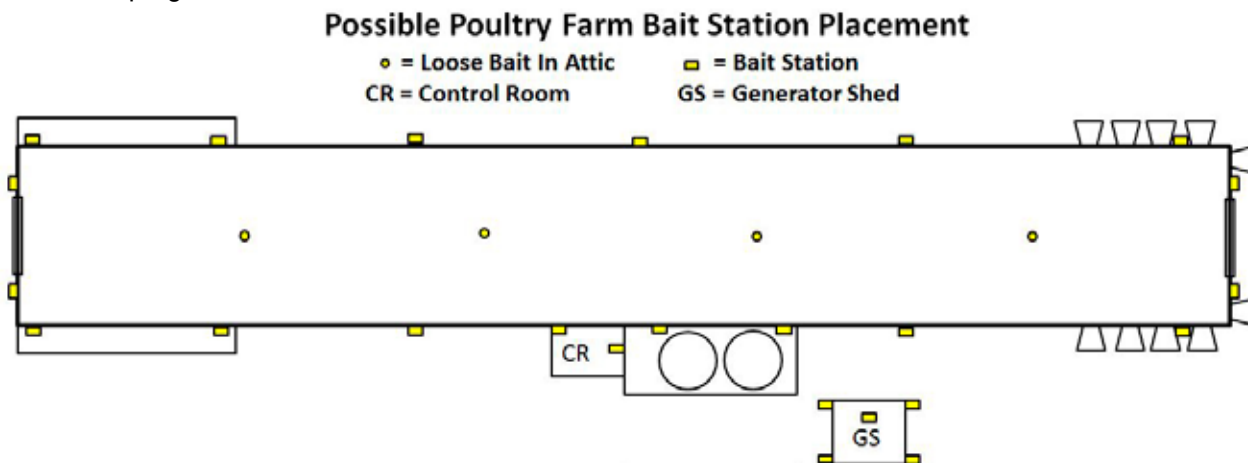
This thermal image reveals multiple rodent tunnels inside a solid insulated wall that are otherwise invisible. The exterior metal on the outside of the wall was not fastened tightly at the top or bottom. The cold spot at the top of the wall is the top entry point allowing the rodents into the attic and the lower dark spots to the right show entry points from the ground. This is a perfect harbor for rodents. We found insulation along the outside of this wall where rodents were entering and leaving.

There are two basic steps to any successful rodent control program. Step 1: Eradicate (kill) all possible existing rodents. Step 2: Keep any others from visiting or moving in – or staying alive if they do come in.

Step 1: Eradicate (kill) all possible existing rodents.

1. Identify the rodents on your farm. Mice leave behind rice size feces and rats are closer to the size of a bean. Know your enemy and consult your company service technician or local equipment supplier for advice on helping you pick the right bait stations, traps and poison to do the job right.
2. Install 1 bait station close to each corner of the generator shed and one under the generator.
3. Install bait stations a maximum of every 100 feet along exterior perimeter of all poultry houses. Some experts may suggest more frequent spacing of 80 feet.
4. Install approximately 2 bait stations inside every evaporative cooling plenum room (dog house).
5. Install 2 bait stations in every control room. Install 1 additional bait station around feed bins.
6. Install 1 bait station on both sides of every end wall door.
7. Loose rodent meal or block bait should be thrown into the attic from each attic access hole in both directions to increase baited area.
8. For houses that have a concrete or lumber ledge on the interior wall of the house 1 bait station every 100-feet along the interior of the house may also be necessary.
9. All bait stations must be cleaned out thoroughly every year by pressure washing. All bait stations must be serviced and restocked with new bait of an alternating active ingredient at least every 4 months. All cobwebs must be removed with a stiff bristle paint brush. Watch out for black widow spiders in stations so use gloves for your safety and to keep from contaminating bait and stations with human scent.

The diagram below shows some possible locations to consider installing bait stations if you don't already have a successful program.



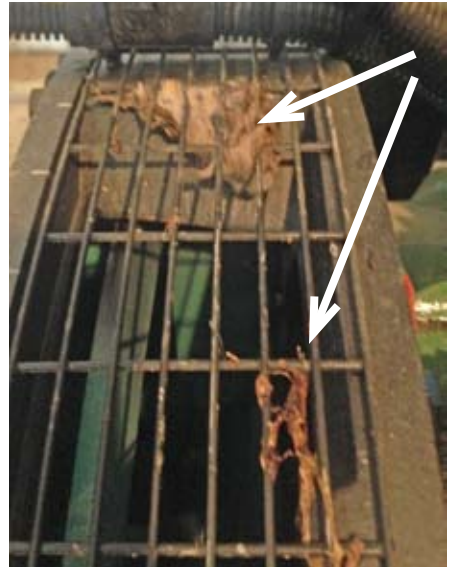
Step 2: Keep other visitors from moving in – or staying alive if they do come in.

Once all possible rodents have been eradicated from the farm and there are no signs of rodent life, the next step is to do everything possible to keep other rodents from coming in. The first step is to make sure the farm is kept as clean as possible. This includes eliminating brush and garbage piles, keeping garbage cans clean and having lids, keeping spilled feed cleaned up, keeping water from standing around houses, and keeping the grass cut short between and around all houses. Rodent control pertains to incinerator sheds, hay barns, bird freezer sheds, and other offices or buildings that are in close proximity to poultry houses. Control rooms should be kept clean and orderly and generator sheds should not have supplies piled up on the floor, especially around the generator.

Realistically, the steps outlined above will minimize the number of rodents coming onto your farm and getting into your houses; but you can't keep them all away. That's why Step 9 in your rodent control program (above) is so important. Even when you know you have eradicated all your previous tenants, you must keep the program going by regularly cleaning and restocking bait stations. This is an ongoing and extremely important step that must not be taken lightly, especially if other poultry farms are in close proximity. Routinely monitoring and maintaining all rodent bait stations, meal baits and traps is the only way to successfully keep rodents from establishing a home on your farm and damaging your equipment.

At least 4 times a year all houses must be inspected for possible places where rodents can or have entered the houses. Mice can gain access through and around evaporative cooling systems, damaged exterior metal, corrugations in metal, around doors, through curtains, through fans, through vents, around the eaves, through

Photo shows two generations of dead mice just inside the grill over the internal fan of the generator. The generator is the most important and expensive piece of equipment on any poultry farm and the first place to start and maintain rodent control. The generator is a great place to stay because it is warm as long as the block heater is operational, there are multiple things to chew on, and this is one of the least frequent places for humans to visit. Well it was a great place to stay until the generator exercised. The generator shed is the most important place for rodent control!



plumbing entrances, through feed auger entrances and any number of other places. Mice can fit through a hole the size of a dime and rats through a quarter-size hole. On some farms it may be impossible to fill all the holes, so you may have to be more aggressive with bait stations.

Think safety first! Regardless of the manufacturer of meal baits, soft baits, or stations, make sure you read and understand all instructions and directions before installing stations and poisons. The instructions are there to help you succeed, so take the time to do some homework and do it right the first time. The last thing you want to do is to harm a child, yourself or a pet companion, so think safety first.

The Bottom Line

Considering that a colony of only 100 or so rats will eat 4,000 or more pounds of feed a year, think of what a serious rodent infestation can do to your flock feed conversion, and your income. The feed problem alone makes rodent control worth taking very seriously. Generator, transfer switch, controller and alarm component repair or replacement costs are measured in thousands of dollars. Total loss of an entire flock due to equipment damage could cost \$10,000 in a small house, not including the associated equipment repairs and flock disposal costs. Damage resulting in the total loss of an entire poultry house from rodent damage causing a fire would be the replacement cost of the house. This varies but is estimated at about \$225,000 for the average 40x500 broiler or pullet house or \$300,000 for a breeder hen house. Don't let rodents catch you off guard! Maintain a strict rodent control program.

Tip: Most poultry companies already have specific details and guidelines in place for implementing their recommended rodent control program, so ask your service technician for details.

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