

Rats & Other Rodents



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When considering storage rooms, wash and pack sheds with growers there is one topic that is sure to strike a nerve:

RODENTS.

This document is intended to provide summary information about measures you can take to reduce crop losses from these pests. It is the result of a review of current literature on the topic and feedback from the Listserv of the Vermont Vegetable and Berry Grower's Association (VVBGA). This document includes both **active measures** (traps, rodenticides, FSMA compliant cats and ball pythons, etc.) and **passive measures** (sealing, doors, packing, hardware cloth, novel construction, accepting the loss, selling everything early).

But why are these creatures so challenging? Here's some background¹:

House Mice Can

- Enter openings larger than 1/4 inch
- Jump as high as 18 inches
- Travel considerable distances crawling upside-down along wire
- Survive and reproduce at a temperature of 24°F if adequate food and nesting material are available.



A rat approaching a baited trap.

Rats Can

- Crawl through or under any opening higher or wider than 1/2 inch
- Climb the outside or inside of vertical pipes and conduits up to 3 inches in diameter
- Jump from a flat surface up to 36 inches vertically and as far as 48 inches horizontally
- Drop 50 feet without being seriously injured
- Burrow straight down into the ground for at least 36"
- Swim as far as 1/2mi in open water, dive through water traps in plumbing, and travel in sewer lines against a substantial water current.

As one grower put it, "To deal with rats, you've got to think link a rat!"

Bottom Line

Cleanliness and Sanitation – Keep food sources well contained and sealed up, reduce "harborage" (places they can hide and live including weeds around the edge of a building), minimize available standing water. In short, make it unappealing and uncomfortable for them.

Rodent Deterrent Construction – Keep them out of the building. [References 1-3 provide very detailed guidance and novel, passive and relatively inexpensive construction ideas] Some examples from the references include keeping all wood products like cardboard, roots, or lumber off the ground and away from the building. Installing proper drainage with sand, stone and proper slope away from your building helps reduce moisture which can carry other pests like beetles and termites. Think about your exterior landscaping and its ability to trap moisture against the building. Keeping grass and weeds trimmed won't leave a place for rodents to hide and travel. Think about all possible points of entry, sills, doors, windows, roofs. Mice can sneak into small holes and cracks so do your best to seal up all possible points of entry.



A well-cleared base-board / ground interface. Minimal space for harborage.



Excessive weed growth allowing ample cover and harborage.

Population Reduction — Bait, trap, kill.

Using snap traps, sticky pads, poisonous bait are all the most effective ways of dealing with a rodent problem [References 5 -7].

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Responses from the VVBGA LISTERV

The following are responses from Vermont growers. These are some of their challenges and solutions related to rodents on their farms.

- I have had over 20% of my sweet potatoes damage by voles. Usually the largest sweet potatoes are the ones half eaten. The next year I put five “yard windmills” in the sweet potato bed, 100 ft. long, along with a half stick of gum under the black plastic by each plant – cheap gum from the discount food store. Both were done after I removed the row covers and before the vines spread. That reduced the damage to less than 5%. Very anecdotal and empirical data but worth exploring. Supposedly the voles do not like vibration of the windmill and eating the gum gives them a bellyache, if fatal I do not know. Bigger windmills, four inches in diameter and larger, with metal post seem to work better. How much gum is actually needed I do not know. A SARE grant in your future.



“Tomcat” Traps are easy to set & easy to empty.

- Not the cheapest retrofit, but have had the best luck with making all walls tin or concrete, and having rat traps permanently set at every overhead door jamb, since the seal is not



Rodent bait near a doorway close to the floor.

100%. Ventilate with in-wall intake and exhaust fans instead of opening doors.

- I recently tried the tin cats and was happy. Baited them by putting small amount of oats in the trap and tilting it so the grain slid to the end where the screen was. After the mice got a few seed through the screen, they were drawn into the trap to get the remainder. Two mice in the same trap on the first night. The downside is that you have to clean out all the grain each time so it doesn't hamper the trap mechanism. Have used Contract waxy block in bait stations for at least 4 years. Switching to a different bait because I think they are starting to get a resistance.

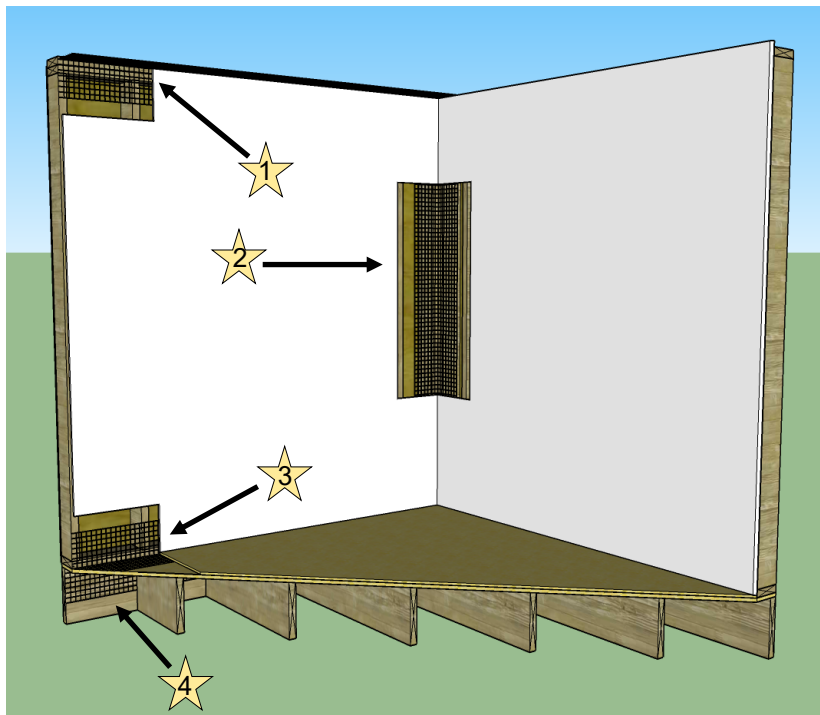


Traditional snap-traps are often effective.

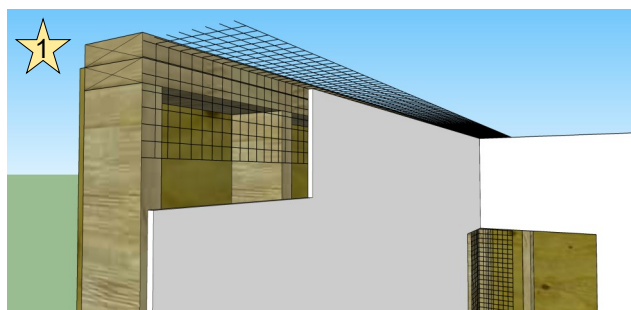
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Responses from the VVBGA LISTERV (cont.)

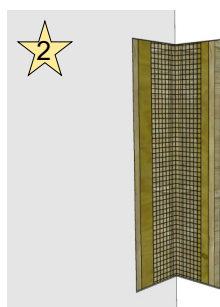
- I've been using that old root cellar all winter for 3 years now without any rodent problems. The process of having someone cement hardware cloth over every crack and crevice was time-consuming but really seems to have worked. I think I finally got rid of the rats in my toolshed through a combination of trapping and disturbing their nesting spots. I'm curious about rodent solutions that apply to the field and high tunnel. I've tried to keep cats but the fishers get them.
- I have not had a single animal in the new barn that I built with the 12" concrete knee wall. I partly contribute the success to the fact that I do not set the bins on the ground. They are filled on the trailer and go directly from the trailer to the barn. This reduces the chance that a hitchhiker will take a ride into the barn.



Possible places to install "hardware" or "wire" cloth (1/4" mesh) to deter rodents at potential entry points.

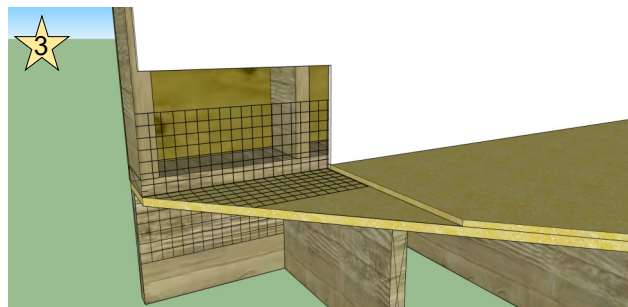


At the corner of wall & ceiling.

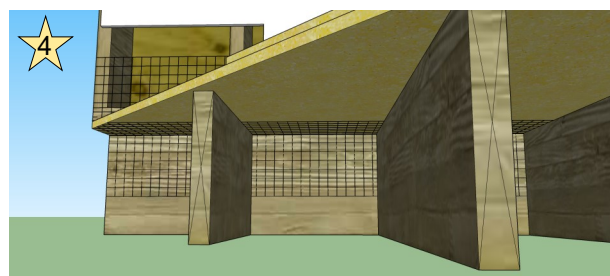


At inside corners of walls.

- Hardware cloth can be stapled in place and covered with sheathing or finish surfaces.
- Hardware cloth may be placed behind sheathing or between sheathing and finish surface in the case of a retrofit.
- Bending the cloth prior to placement eases installation.



At the corner of wall and the floor. Can be done above or below floor.

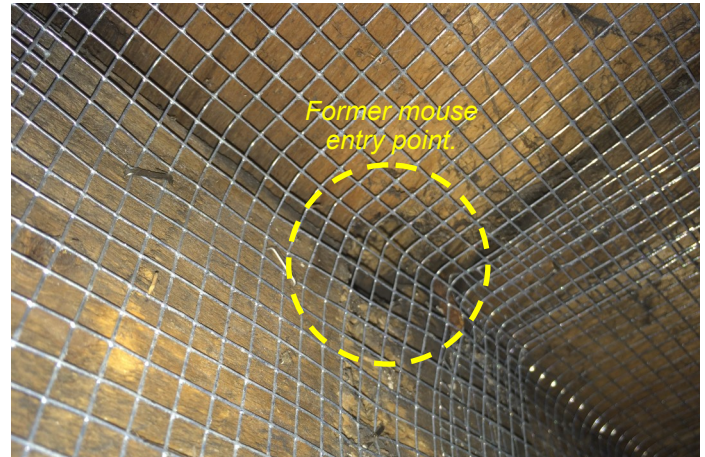


Installing below floor, between each joist and the floor may be necessary as a retrofit.

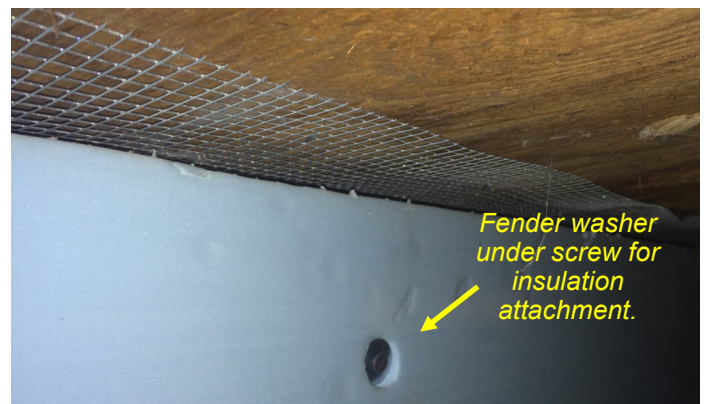
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Responses from the VVBGA LISTERV

- We are a very small pumpkin farm and don't have the storage needs for food, but I use lots of snap traps and dump those little, dead vermin bodies while wearing a happy smile!
- We have only killed rats by accidentally moving a pallet onto one. Can't bait them. They are very intelligent.
- "We have a great barn cat and a Jack Russell terrier for our farm."
- Mice – kernel of corn wedged into mouse trap trigger covered in peanut butter. Rats – same as above but do not the set the trap for several nights and remove all other food sources (in chicken hutch empty all food containers) then set the trap. Putting a milk crate over the trap prevents chickens, cats, dogs from getting caught. Also works with chipmunks, and occasionally with red squirrels. Voles – hard to trap, run them down and stomp.



Hardware cloth between the joist and the floor.



Finished installation, underfloor without finish surface.

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