

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Historical Materials from University of  
Nebraska-Lincoln Extension

Extension

---

1994

## G94-1217 Rodent-Proof Construction: *Drains and Feeding Equipment* (Revised November 2003)

Scott E. Hygnstrom

University of Nebraska-Lincoln, shygnstrom1@unl.edu

Dallas R. Virchow

University of Nebraska-Lincoln

Dennis M. Ferraro

University of Nebraska - Lincoln, dferraro1@unl.edu

Richard R. Stowell

University of Nebraska-Lincoln, rstowell2@unl.edu

Follow this and additional works at: <https://digitalcommons.unl.edu/extensionhist>



Part of the [Agriculture Commons](#), and the [Curriculum and Instruction Commons](#)

---

Hygnstrom, Scott E.; Virchow, Dallas R.; Ferraro, Dennis M.; and Stowell, Richard R., "G94-1217 Rodent-Proof Construction: *Drains and Feeding Equipment* (Revised November 2003)" (1994). *Historical Materials from University of Nebraska-Lincoln Extension*. 1516.

<https://digitalcommons.unl.edu/extensionhist/1516>

This Article is brought to you for free and open access by the Extension at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Historical Materials from University of Nebraska-Lincoln Extension by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.



## Rodent-Proof Construction: *Drains and Feeding Equipment*

Techniques are described in this NebGuide for excluding rodents from drains, pipes, feed bunks, bins, and storage containers.

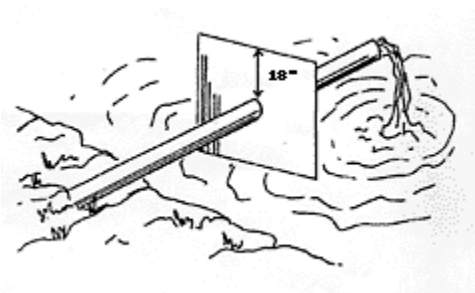
---

*Scott E. Hygnstrom, Extension Specialist - Wildlife Damage Management*  
*Dallas R. Virchow, Wildlife Disease Management Specialist, USDA-APHIS-Wildlife Services*  
*Dennis M. Ferraro, Associate Extension Educator*  
*Richard R. Stowell, Extension Specialist - Agricultural Engineer, Livestock Systems*

---

- [Drains and Pipes](#)
- [Mechanical Guards](#)
- [Livestock Feed Bunks and Bins](#)
- [Feed and Refuse Storage](#)

Rodents often travel along pipes, electrical cables, conduits, drains, and other equipment to gain access to buildings used for housing livestock and storing feed. Rodent-proof materials should be installed to prevent access to buildings along these routes. Additional methods to consider in an integrated pest management (IPM) program include sanitation, toxicants, and trapping. For additional information on rodent control, see NebGuides 92-1105, Controlling House Mice; 92-1106, Controlling Rats; and 03-1530, Rodent-Proof Construction: Structural at the University of Nebraska Cooperative Extension Publications Web site (<http://ianrpubs.unl.edu/wildlife>) or the Web site on rodent control in swine operations (<http://rodent.swine.unl.edu>).



**Figure 1. Shield manure discharge pipes to prevent access by rodents.**

### Drains and Pipes

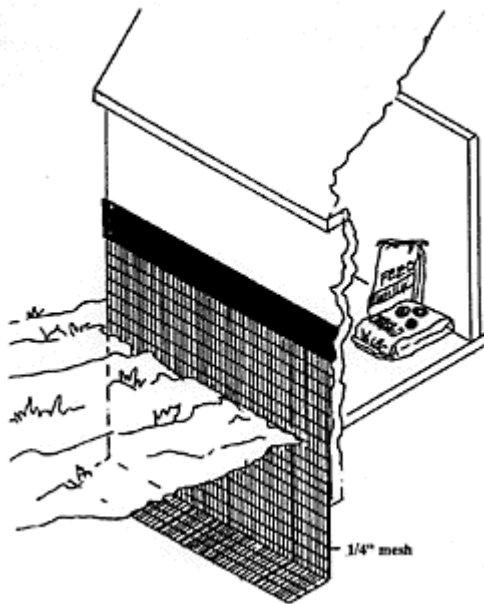
Both rats and mice use drainage pipes or sewage systems as routes to enter buildings. Equip floor drains with metal grates that securely fasten in place. Use grates with openings that are 1/4 inch or less.

Systems for managing manure in livestock facilities often include periodic draining of manure and water from the building to a lagoon or other storage area. Extend discharge pipes far enough over the bank or into the lagoon to prevent rodents from

jumping or crawling into the open end. Install rodent shields (*Figure 1*), or use a downward-turned elbow to prevent rodents from gaining access. A hanging metal cover at the open end of the discharge pipe, with a hinge at its upper edge, can also be effective. The hinge must operate easily so water or manure will open the cover and the cover must fall back into the closed position when the flow stops. Hanging covers sometimes freeze shut, so they must be checked regularly.

Always cap pump-out ports for manure storage pits when the ports are not in use. Open ports allow easy entry to rodents.

## Mechanical Guards



**Figure 2. Feed sheds, corn cribs and other existing wood structures can be rodent-proofed by installing hardware cloth topped by a band of sheet metal. The hardware cloth can also serve as a curtain wall to prevent rodent burrowing.**

and trees. Use shields or wire guards made of 1/4-inch wire mesh to exclude rodents from the interior of feed augers, fan housings, and similar openings. With some ingenuity, you can design rodent guards to fit any situation.

Install guards made of sheet metal or similar materials to prevent rodents from climbing or traveling along particular routes. Guards must be wide enough and positioned to keep rodents from climbing over or jumping around them. Attach sheet metal bands to walls to prevent rodents from climbing. Rodent guards on walls should be 12 to 18 inches wide and 36 inches above the floor or ground level.

Install guards to prevent rodents from climbing the outside of buildings that have rough exterior walls. Use rodent guards in combination with hardware cloth, or other suitable materials to make corncribs, bins, and other buildings rodent-proof (*Figure 2*).

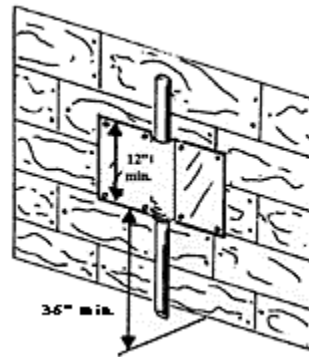
Install flat guards to prevent rodents from traveling along walls where horizontal or vertical pipes, wires, conduit, and cables are attached (*Figure 3*). Install cones or discs on cables, ropes, augers, or pipes (*Figure 4*). Guards that hang freely are easily damaged. Construct circular guards of 24-gauge sheet metal and anchor them in place by one or more arms on the side opposite to that which is accessible to rodents. Circular guards must extend out 18 inches around the lines they guard. Cone-shaped circular guards prevent rats from climbing vertical pipes, pilings,

## Livestock Feed Bunks and Bins

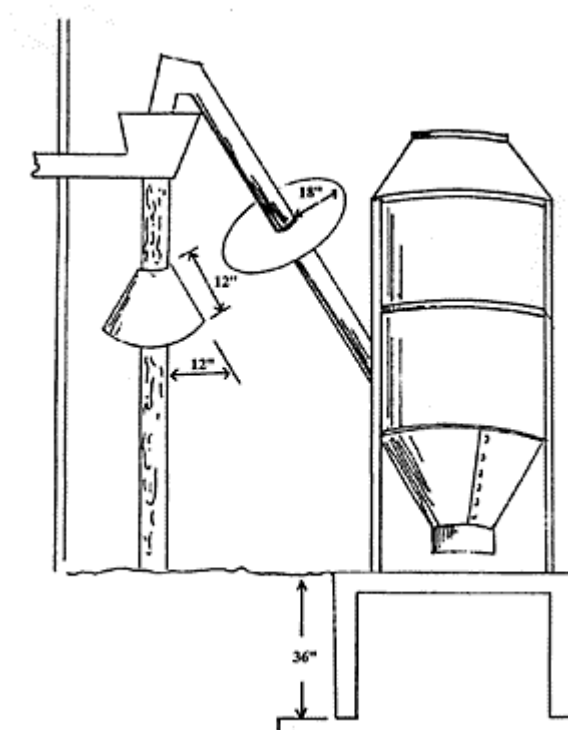
Rats often burrow and establish dens under feed bunks that are placed directly on the ground, on concrete blocks, or near ground level. Set concrete bunks solidly on concrete aprons to eliminate rodent habitat (*Figure 5*). Though traffic by cattle may discourage rats from burrowing under aprons, you may need to build a foundation to prevent burrowing around the sides of the aprons that do not receive use by cattle.

Concrete foundations for feed bins should extend 36 inches below grade at the outer edges to prevent rats from burrowing under the slabs (*Figure 5*). Install 3 inches of 1 1/2-inch crushed rock and maintain

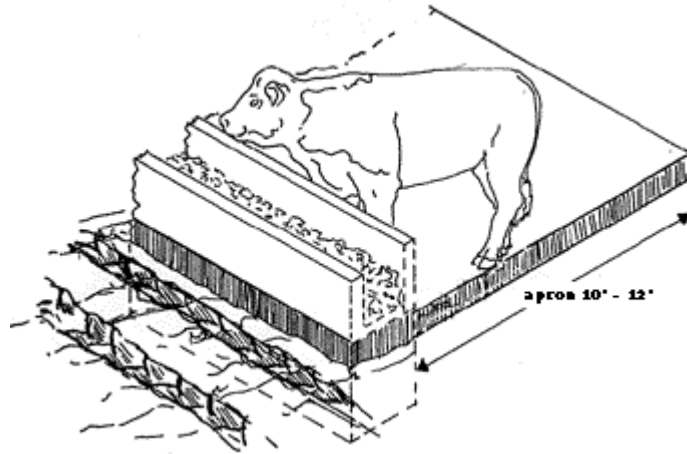
a clean, weed-free zone around the perimeters of slabs to discourage burrowing by rats and to permit easier detection of rodent activity.



**Figure 3. Guards of various designs can prevent rodents from climbing along wires or pipes.**



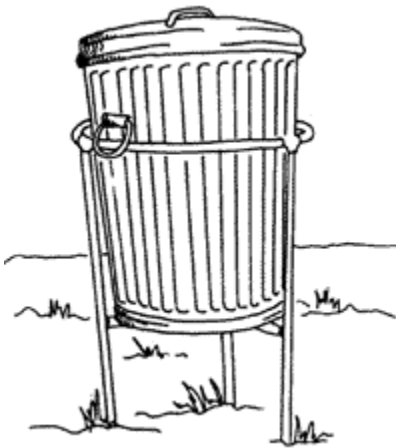
**Figure 4. Guards used to prevent rats from climbing augers, pipes or wires leading to buildings.**



**Figure 5. Rats cannot live under or around feed bunks that do not provide shelter.**

### **Feed and Refuse Storage**

Proper storage and disposal of waste and dead animals is a very important part of rodent control. Good sanitation limits rodents' sources of food, water, and shelter. Always store livestock or pet feed in metal cans with tight-fitting lids or similar rodent-proof containers (*Figure 6*). Racks prevent them from being tipped over by dogs or other animals..



**Figure 6. Use metal containers with tight-fitting lids to store waste.**

---

***File G1217 under: WILDLIFE MANAGEMENT***  
***A-23, Wildlife Damage Control***  
*Revised November 2003, 2,000*

*Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Elbert C. Dickey, Director of Cooperative Extension, University of Nebraska, Institute of Agriculture and Natural Resources.*

*University of Nebraska Cooperative Extension educational programs abide with the non-discrimination policies of the University of Nebraska-Lincoln and the United States Department of Agriculture.*