



# Livestock Carcass Disposal

Water Quality/Feedlots #6.07b • Revised July 2010

**T**he primary authority regulating carcass disposal in Minnesota lies with the Board of Animal Health (BAH). The 7020 feedlot rule addresses site selection for composting animal carcasses, and references BAH Rule 1719.4000. Large feedlots holding NPDES (National Pollutant Discharge Elimination System) permits are required to have an Animal Mortality Plan.

Animal carcasses should be disposed of as soon as possible, within 48-72 hours. Improper disposal increases the danger of disease to humans and livestock, and contamination of surface and ground water. Vehicles transporting carcasses must be: leak proof, covered, inspected, and permitted by the BAH (except if owner is transporting his own dead animals).

In the event of a catastrophic animal loss, immediately contact the Minnesota State Duty Officer, state wide 800-422-0798, local 651-649-5451. Also contact immediately the Board of Animal Health, 651-296-2942; the Department of Agriculture, 651-201-6000; and your county feedlot officer or MPCA regional feedlot staff.

The NPDES General Permit states the following regarding animal mortalities:

- Disposing in liquid manure storage areas is prohibited;
- Disposal must not cause a discharge to surface or ground water;
- Keep records of disposal management and practices.

## Carcass Disposal Practices

### Burial

Select burial sites with care to avoid ground-water contamination.

Buried carcasses must:

- Be five (5) feet above seasonal high water table;
- Stay away from lakes, rivers, streams, ditches, etc.;
- Be covered immediately with enough soil to keep scavengers out (BAH guidelines indicate three (3) feet is sufficient);
- Avoid sandy or gravelly soil types; and
- Maintain at least ten (10) feet vertical separation from bedrock.

### Composting

The composting process must, at a minimum, meet the following:

- The owner of the compost facility shall have a written protocol for the operation containing at least the minimum steps listed below and instruct all employees to follow the protocol;
- Mortalities must be processed daily;
- A base of litter is required. The carcasses or discarded animal parts and litter plus bulking agent are added in layers so that the carbon to nitrogen ratio is in the range of 15:1 to 35:1 (optimal 23:1);
- The carcasses or discarded animal parts must be kept six (6) inches from the edges and sealed with litter each day;
- The temperature must be taken and recorded on site daily. The compost temperature must reach a minimum of 130 degrees Fahrenheit. Approximately seven (7) to ten (10) days are needed in each heat cycle to process the carcasses and kill

#### MPCA Area Offices:

**Rochester area:**

507/285-7343

**Mankato area:**

507/389-5977

**Marshall area:**

507/537-7146

**Willmar area:**

320/214-3786

**Detroit Lakes area:**

218/847-1519

**Brainerd area:**

218/828-2492

**Duluth area:**

218/723-4660

**Metro area:**

651/296-6300

**Toll-Free Number:**

800/657-3864

the pathogens. The temperature drop indicates the time to mix and move the compost. A minimum of two (2) heat cycles is required; and

- The finished compost must not contain visible pieces of soft tissue and must be handled, stored, and used according to all other applicable rules.

In addition, composting facilities must be:

- Built on an impervious, weight-bearing pad large enough for equipment to maneuver;
- Covered with a roof to prevent excessive moisture on the composting material; if sawdust or other water-repelling material is used as the bulking agent, a roof may not be necessary;
- Built of rot-resistant material strong enough to withstand the force exerted by equipment; and
- Large enough to handle each day's normal mortality through the endpoint of the composting, which consists of a minimum of two (2) heat cycles.

### Incineration

Incinerators must be:

- Capable of producing emissions not to exceed 20 percent opacity;
- Fitted with an afterburner that maintains flue gases at 1,200 degrees Fahrenheit for at least 0.3 seconds; and
- Ash from the incinerator must be handled in such a manner as to prevent particulate matter from becoming airborne.

It is recommended that the incinerator be large enough to handle each day's mortalities.

### Rendering

Carcasses left at an off-site pickup point must be:

- Kept in an animal-proof, enclosed area;
- At least 200 yards from a neighbor's buildings;
- Picked up within 72 hours;
- If the enclosed area is refrigerated to less than 45 degrees Fahrenheit, the carcasses must be picked up within seven (7) days.

### Alternative Methods

Alternative methods of mortality disposal including, but not limited to, pet food processing, fur farm consumption, lactic fermentation, extrusion, and experimental composting, require a permit from the Minnesota Board of Animal Health. For more information on alternative methods of carcass disposal, contact the Board of Animal Health at (651) 296-2942.



**Turkey compost shed**

### For More Information

Contact your county feedlot officer or MPCA staff at regional offices listed on front, or access the following Web pages:

- Minnesota Pollution Control Agency: [www.pca.state.mn.us/hot/feedlots.html](http://www.pca.state.mn.us/hot/feedlots.html)
- Minnesota Board of Animal Health: <http://www.bah.state.mn.us/bah/carcass-disposal/>
- Minnesota Board of Animal Health Rules: [www.revisor.leg.state.mn.us/arule/1719/4000.html](http://www.revisor.leg.state.mn.us/arule/1719/4000.html)
- A link to a booklet titled [Composting Animal Mortalities](#) is on the Minnesota Department of Agriculture's Dead Animal Composting Web page at: [www.mda.state.mn.us/protecting/conservation/practices/compostanimal.aspx](http://www.mda.state.mn.us/protecting/conservation/practices/compostanimal.aspx).

Other U.S.:

- *On-Farm Composting Handbook*, Cornell University: [www.nraes.org/publications/nraes54.html](http://www.nraes.org/publications/nraes54.html)
- Swine Composting Facility Design, Ohio State University: <http://ohioline.osu.edu/aex-fact/0713.html>
- Iowa State University, *Composting dead livestock: A new solution to an old problem*: [www.extension.iastate.edu/Publications/SA8.pdf](http://www.extension.iastate.edu/Publications/SA8.pdf)