



MINNESOTA MORTALITY DISPOSAL BEST MANAGEMENT PRACTICES W

GENERAL OVERVIEW

Carcass: The body or a part of a domestic animal or fowl that has died or has been killed, other than by being slaughtered for human or animal consumption.

Discarded Animal Parts: All or a part of animals, fish, or poultry that have been killed for human or animal consumption and not used for that purpose.

There is always mortality in animal production. Proper disposal of carcasses is important both to prevent livestock disease transmission and to protect air and water quality. This document provides options for disposal and discusses advantages, disadvantages and rule requirements of each method.

Carcass Disposal is regulated by:

- Minnesota Statute 35.82
- Minnesota Board of Animal Health Rules - 1719.0100 - 1719.4600
- Minnesota Pollution Control Agency Rules
- Minnesota Department of Natural Resources Rules

Legal Methods of Carcass Disposal

SPECIES	DISPOSAL METHOD						
	Compost	Render	Incinerate	Bury	Exempt by Law	Fur Farm Consumption	Pet Food
Poultry	4	4	4	4		4	4
Swine	4	4	4	4		4	4
Cattle	4*	4	4	4		4	4
Horses	4*	4	4	4		4	4
Sheep/Goats	4	4	4	4			4
Household Pets					4		
Wild Animals					4		
Game Farm/ Exotic Animals	*	4	4	4			

*Call Minnesota Board of Animal Health 651/296-2942, Ext. 27 for additional information.

General Rules:

1. Carcass must be disposed of as soon as reasonably possible, i.e. within 48 to 72 hours.
2. Burying a carcass requires that the carcass be five feet above the seasonal high-water table and covered with dirt. Sandy or gravelly areas or areas within 10 feet of bedrock should be avoided.
3. Incineration must be in an incinerator that is approved by the Minnesota Pollution Control Agency.
4. Hauling over the road: Carcasses or discarded animal parts must be in vehicles or containers that are leak-proof and covered. The vehicles also need to be inspected and have a permit, unless the vehicle belongs to the owner of the animal before it died.
5. Composting must be done according to the protocol set forth in Board of Animal Health Rule 1719.4000. This is explained in the section on composting.
6. Fur farms need a permit and inspected vehicle to haul carcasses or discarded animal parts over the road.
7. Each carcass used as pet food must pass an inspection by a veterinarian and must be processed under clean and sanitary conditions.
8. Carcasses left at an off-site pickup point must be in an animal-proof enclosed area that is at least 200 yards from a neighbor's buildings. Carcasses must be picked up within 72 hours, except if the enclosed area is refrigerated to less than 45 degrees Fahrenheit, then the carcasses must be picked up within seven days

W This document is adapted from fact sheets prepared by the Minnesota Pollution Control Agency and Minnesota Board of Animal Health.

COMPOSTING

Composting is the process of placing carcasses in layers with a carbon source and manure to allow the natural heating process to break down the carcass. Composting is allowed for swine, sheep, goats and poultry. Composting is allowed by permit for cattle, horses and exotic animals.

Advantages

- Biosecurity
- Year-round use
- Inexpensive
- Environmentally sound
- Value-added product to sell or use
- Best and recommended method to handle catastrophic losses
- Heat of composting process kills pathogens and insect larvae
- Done on-site

Disadvantages

- May be more labor intensive
- Requires impervious pad, rot-resistant walls and cover to repel rain
- Takes some practice to develop the “art”
- Requires carbon source (straw, sawdust, cornstalks, etc.)

Recommendations

Composting is an "art" that must be practiced because of the variety in materials, weather conditions and number of carcasses. It is best to have the same person doing the composting to ensure compost performance.

Do:

- Follow protocol as specified in Board of Animal Health Rule 1719.4000
- Process mortality daily
- Keep carcasses covered and at least six inches from sides
- Take and record temperature daily (must reach 130 degrees Fahrenheit)
- Start with a base of carbon source material
- Put carcasses, litter and carbon source in layers
- Mix pile at least one time when the temperature starts to decline; this will generate a new heat cycle after each mixing

Don't:

- Use frozen carcasses for composting
- Store carcasses before processing

Public Relations

Build composter out of sight and away from neighbors. While a compost pile that is working right will have no smell and no insects, it may bother neighbors to see carcasses going into it on a daily basis. Convince your neighbors to use the finished compost for their gardens (before you tell them what is in it).

INCINERATION

Incineration is an effective but more costly method. It is a good cold weather alternative.

Advantages

- Can use year-round
- Biosecurity (no trucks coming from other farms to pick up carcasses)

Disadvantages

- Incinerator cost
- Fuel cost – expensive

- Odor
- Very expensive for larger carcasses

Recommendations

- Place your incinerator out of sight or enclosed with a decorative screen
- Consider the wind direction and time of the day, so as to least effect your neighbors

Do:

- Purchase MPCA-approved incinerator
- Purchase unit large enough to handle each day's mortality
- Properly maintain unit
- Incinerate mortality daily

Don't:

- Accumulate carcasses for days before incinerating
- Incinerate when neighbor down-wind is having a barbecue, etc.
- Forget to pay your gas bill

Public Relations

Most problems from incineration come from the odor of burning hair or feathers when it interferes with a neighbor's outdoor activities.

BURIAL

Burial requires great care in site selection because as carcasses decompose, they release materials that can pollute ground water, particularly if large volumes are buried. This practice is most suitable for small amounts of material (e.g. less than 2000-lb./burial pit/acre).

Advantages

- Inexpensive (if own equipment)
- Biosecurity (No trucks coming from other farms to pick up carcasses)

Disadvantages

- Difficult in winter
- Can cause ground-water pollution
- Cannot bury within five feet above seasonal high-water table

Recommendations

- Should not be used by large facilities or with catastrophic losses because the volume of carcasses may lead to ground-water pollution.
- Examine other alternatives for dead livestock disposal.

Do:

- Cover with soil and stay five feet above the seasonable water table
- Cover each day's deposits with a layer of soil
- Identify sites for worker safety
- Bury immediately

Don't:

- Place in or near lakes, ponds, rivers, streams, wetlands, ditches or wells
- Use as a dump for other farm garbage
- Bury in areas with a high seasonal water table
- Bury in "karst" or sandy areas
- Bury in areas subject to surface water flooding

Public Relations

Problems arise when using burial pits and when burying a carcass too near a neighbor's well. The neighbors complain about burial pits when any smell comes from the farm – they assume it is from the pit. Problems also arise when carcasses are not properly covered each day and dogs or wild animals drag off parts of the carcasses.

RENDERING

Rendering offers the grower the chance to create a recyclable feed product if it is submitted to the renderer with proper handling.

Advantages

- Recyclable resource
- Can use year-round

Disadvantages

- Lack of biosecurity when carcasses are picked up
- Cost
- Not available in all areas
- Not available for all species

Recommendations

- Get on an annual contract with the renderer rather than a "per call" charge
- If large enough farm, get on a scheduled weekly or twice weekly pick-up route
- Use off-site pick up points for biosecurity purposes
- Consider refrigerated off-site pick up points

Do:

- Know what substances the animals were exposed to in order to avoid residue problems in the rendered product
- Follow Board of Animal Health Rules for off-site pick up point
 - ✓ Must be animal-proof enclosure at least 200 yards from neighbor's buildings.
 - ✓ Carcasses may not be left for more than 72 hours unless refrigerated -- then seven days.
- Be aware of potential disease spread from a rendering truck.
- Vehicles or containers must be leak-proof and covered to haul carcasses over the road. (Contracted vehicles also need a permit from the Board of Animal Health.)

Don't:

- Delay calling for carcass pickup
- Leave carcasses where other animals can drag them off
- Leave carcasses in public view

Public Relations

Neighbors are most upset when carcasses are left where other animals can drag them into their yards or when carcasses can be seen from the road. Off-site pick-up points are required to be animal-proof enclosures.

ALTERNATIVE METHODS

The Board of Animal Health may permit alternative methods of carcass disposal that are effective for the protection of public health and the control of livestock diseases. **All alternative methods require a permit from the Board of Animal Health (651) 296-2942**

1. Pet Food Processing

- Requires permit, veterinary inspection of each carcass, facilities and equipment that meet Board of Animal Health specifications

2. Fur Farm Consumption

- Fur farm is required to have a permit and to keep the farm in a sanitary condition
 - Permits allow only the feeding to fur-bearing animals that do not re-enter the food chain
 - Owner assumes the risk of a disease or condition in the carcass that could be detrimental to the fur animals
3. Grinding and Injecting into the Manure Pit
 - A permit was granted to the University of Minnesota for an experimental project
 - Field trials were conducted in 1996
 - A disadvantage may be neighbors' perception that the smell from the manure pit is worse because of the carcasses in it
 4. Lactic Fermentation
 - Lactic fermentation utilizes a mixture of ground carcasses and a carbohydrate source to produce a "silage" type product for refeeding
 5. Extrusion
 - Extrusion is a method whereby ground carcasses and a carrier such as soybean meal are cooked under pressure and moisture, generating steam and a product with 12 percent moisture for refeeding.
 6. Emergency, Commercial or Experimental Composting
 - In emergency or catastrophic loss - call the Board of Animal Health for a permit and advice on composting the losses
 - Experimental composting must be in conjunction with a University and requires a permit
 - Cattle and other species may be experimentally composted if the protocol is approved

REFERENCES FOR MORE INFORMATION

University of MN Extension Service
(612) 624-4928

MN Board of Animal Health
(651) 296-2942

MN Pollution Control Agency
Toll Free (877) 333-3508 (651) 296-4800

MN Dept. of Natural Resources (Wetlands)