

Livestock Carcass Disposal Guide



Producers in Minnesota have a number of options for legal and effective carcass disposal. Each option has unique advantages and some have challenges to keep in mind before beginning the process. The Minnesota Board of Animal Health is especially concerned if there is an infectious animal disease involved. In these cases, disposal of the carcasses should be done on-site and quickly to minimize disease spread. No matter the method selected, you should use the appropriate best management practices found in this guide.

The following livestock carcass disposal options are approved in Minnesota.

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Burial

- Effective for fewer carcasses.
- Has been used for many years.
- Be aware of ground water levels.
- Not possible in all locations.

Burial is an option for some scenarios, and has been used for many years to dispose of dead animals. It is most effective when disposing of a small numbers of carcasses, because large numbers of carcasses can be more difficult to bury properly.

Best practices need to be followed to effectively dispose of the carcasses. For example, if a carcass is buried too deep, it will not decompose well and could remain intact for many years, which could threaten ground water quality and minimize the options for future use of the location. It is usually not recommended for animals that have died from a disease.

Sometimes burial is the only option during disaster events, and should be considered after consulting with an expert because issues such as environmental conditions need to be evaluated.

Steps to get started with burial:

1. When burial is used in a normal situation, you can check with the USDA Natural Resources Conservation Service to help with locations where the water table depths allow you to bury.
2. When you find the location to bury a carcass, you need to make the hole as deep as needed to completely cover the carcass to prevent scavenging by other animals.
3. Make sure that you stay away from both above ground and underground water sources.
4. The hole must be five (5) feet above the seasonal high-water table. Find Minnesota water table depths here: https://www.dnr.state.mn.us/waters/programs/gw_section/mapping/platesum/mha_wt.html
5. You can also check the water table depth when you bury by digging the hole and then digging an additional five feet down to verify that you are above the water table.

Incineration

- Effective when used properly.
- Best for smaller scale disposal.
- Not readily available everywhere.
- Need to work with approved facility.

Incineration is an effective method for routine mortalities of smaller carcasses, like poultry. However, it is not viable for large losses or large carcasses. This method also requires special equipment and permits from the Pollution Control Agency. Ash and gas emissions from the incinerator cannot exceed pollution standards set by the PCA.

Steps to get started with incineration:

Contact the Minnesota Board of Animal Health to see if this is the right fit for your operation.

Rendering

- The process creates a usable byproduct.
- Companies pick up directly from the farm in certain areas of Minnesota and haul to several plants.
- Vehicles need to safely transport carcasses and follow biosecurity practices.

Rendering is like a recycling process of the animal carcass. There are several companies providing this service to livestock producers in Minnesota. The companies primarily serve southern and central Minnesota; there are fewer options in the northern part of the state.

Rendering company trucks must be inspected and permitted by the Board of Animal Health, unless the vehicle belongs to the owner of the animal. Carcasses and animal parts must be transported in a leak-proof vehicle to prevent disease spread and keep roads clean.

Steps to get started with rendering:

1. Contact a Minnesota rendering company (see next page for list).
2. Make sure the rendering truck follows your farm biosecurity plan when it arrives.
3. Contact the Minnesota Board of Animal Health if you live in northern Minnesota.

Minnesota Rendering Companies

Central Bi-Products Plant A

Todd County
1-800-767-2569
www.centralbi.com

Central Bi-Products Plant B

Redwood County
1-800-767-2569
www.centralbi.com

Darling International Plant A

Faribault County
507-526-3296

Darling International Plant B

Fillmore County
507-526-3296

Leroy Job Trucking

Sherburne County
612-245-6085

Sanimax

Dakota County
651-451-6858
www.sanimax.com

T-N-T Rendering

Lyon County
712-348-2407

West Central Sanitation Inc.

Kandiyohi County
320-235-7630
www.wcsanitation.com

Worthington Rendering Company

Nobles County
507-376-4711



Composting

- Safe, clean and effective when done correctly.
- Easy to do on your own property.
- Must follow directions to be successful.
- Eliminates diseases when done correctly.

Composting is simple if you know what you're doing. Make sure to contact one of our field staff to learn how to compost carcasses successfully. You can do it yourself once you understand how the process works and what ingredients are needed to make good compost.

Composting relies on naturally occurring microbes like bacteria and fungi. These microbes need a well-rounded diet, air, water and shelter. The most efficient ones are the thermophilic microbes, or thermophiles, which grow the best and work hard when the temperature is higher than 130°F. When these thermophiles are thriving, they turn carcasses into a useful, humus-like material that doubles as a slow-release fertilizer, organic soil addition, or water-saving mulch.

Every living being does best when it eats a properly balanced diet, and compost microbes are no exception. They need both carbon (C) and nitrogen (N) in the right ratio. Optimally, the nutrients in a compost pile should be about 30 parts C and one part N (30:1).

A compost pile should have three to five feet of porous compost materials surrounding its core to serve as an insulator. This will keep the core at the necessary 130°F or higher if all other conditions are right—even through a snowy winter.



Steps to get started composting:

Carbon-rich material such as sawdust, small wood shavings, ground-up woody plants from a community brush-chipping site, rotten hay bales, shredded sugar beets, peanut hulls, or other brown-colored crop residues. Mixing two or three types of carbon-rich material together works best. The wider the variety of particle sizes in your pile, the better the balance will be among air movement, insulation, pile strength and surface area for the microbes to feed on. You will need about three to five cubic yards of the material for every 1,000 pounds of carcass—less if the material yields its carbon easily, more if it does not. “Seed” the pile of material with some manure, broiler litter or unfinished compost ahead of time to kick-start the composting process.

How much material is needed for composting?

For every 1,000 pounds, you need 3 to 5 cubic yards of material.



A front-end loader or other machine that can move the carcass, assemble and turn the pile and load the finished compost into a spreader truck is useful to have for composting. You won't need the loader every day, but you will need access to it to build the pile, to turn it when the temperature begins to fall and also to turn it in emergencies, such as if rainfall drenches the pile or the pile gets too hot for safety. The larger the loader, the faster you'll be able to get the job done.

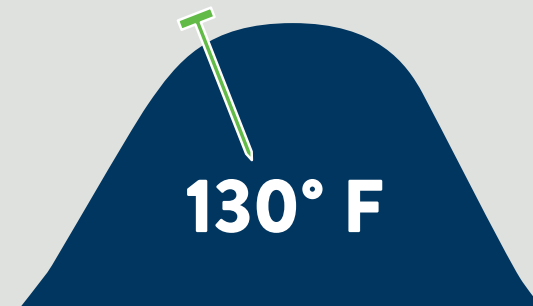
Water. You will need to mix water into the pile occasionally as the high interior temperatures dry it out. Effluent from a holding pond or lagoon is perfect for keeping compost piles moist because it usually has an extra shot of nitrogen that will feed the compost microbes.



Compost Ingredients:

Brown, organic material can be:

- Leaves
- Waste Straw
- Waste Hay
- Corn Stalks
- Saw Dust
- Dead, dry plants
- Wood Chips
- Shredded Paper



A long-stemmed thermometer for measuring the temperature at the core of the pile.

A tool for opening the carcass.

The larger the carcass, the longer the composting process will take. It is often helpful to open up or quarter a larger carcass to give the microbes more surface area to work on. You can perforate the carcass with large shears, a hunting knife or a necropsy knife.

If you want to go a step further, or if you need to limb the carcass to make the pile more compact, then a big hacksaw or bolt-cutter will also help. Opening the carcass speeds decomposition, but it is optional. The compost microbes can perforate the carcass themselves. If you open the carcass, you will notice that the pile will seem to have collapsed not long after you assemble it. This is called “yielding.” When that happens, examine the pile closely to see that the carcass remains well covered on all sides, or it could attract predators.

CAUTION: If you suspect the animal died from a zoonotic disease (one that can be transmitted to humans), do not open the carcass. Instead, notify your veterinarian and the Minnesota Board of Animal Health immediately.



Composting Tips:

Composting mortalities of dairy and beef cattle is a viable disposal option for many farms. The composting process works best when managed attentively from start to finish. Effective composting requires meeting desirable ranges for five conditions:

- C:N ratio.
- Moisture content.
- Temperature.
- Oxygen level.
- pH level.

Farmers need to start with a good bulking agent(s) recipe, aerate the pile multiple times and add water as needed. Under optimum conditions, rapid and complete decomposition of soft tissue will occur. Further management of bone decomposition is essential. Knowing how to compost bovine carcasses will ensure proper consideration of the environment, neighbors and state regulations.

Contact Information:

Phone: 651-296-2942

Web: <http://www.mn.gov/bah/carcass-disposal>

E-mail: animalhealth@state.mn.us

MINNESOTA BOARD OF ANIMAL HEALTH

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