

# COMPOSTING LIVESTOCK MORTALITIES ON THE FARM

*Caitlin Price Youngquist*

Cold and windy weather can be hard on aging or sick animals. Thinking about losing an old friend is hard, but having a plan for carcass disposal can reduce the grief and hassle.

There are two options for on-farm disposal: burial and composting. You could also remove the carcass from the farm or ranch and deliver it to a licensed landfill, rendering plant, or crematorium, or abandon it so it is used by scavengers. The specific method of disposal when developing a livestock mortality disposal plan will depend on factors such as cause of death, proximity of neighbors, available resources, and winter weather conditions.

## **Wyoming Livestock Mortality Disposal Options**

Access to rendering and incineration services for large animals is very limited in Wyoming but may be available in neighboring states. The Humane Society of the United States provides a listing by state of cremation and rendering services (including Colorado, Montana, and Utah). Ask your veterinarian for local small animal cremation services.

The carcass of any animal that has been euthanized by sodium pentobarbital injection (a common and humane method recommended by



*Cover a carcass with 2 to 3 feet of high-carbon compost material.*

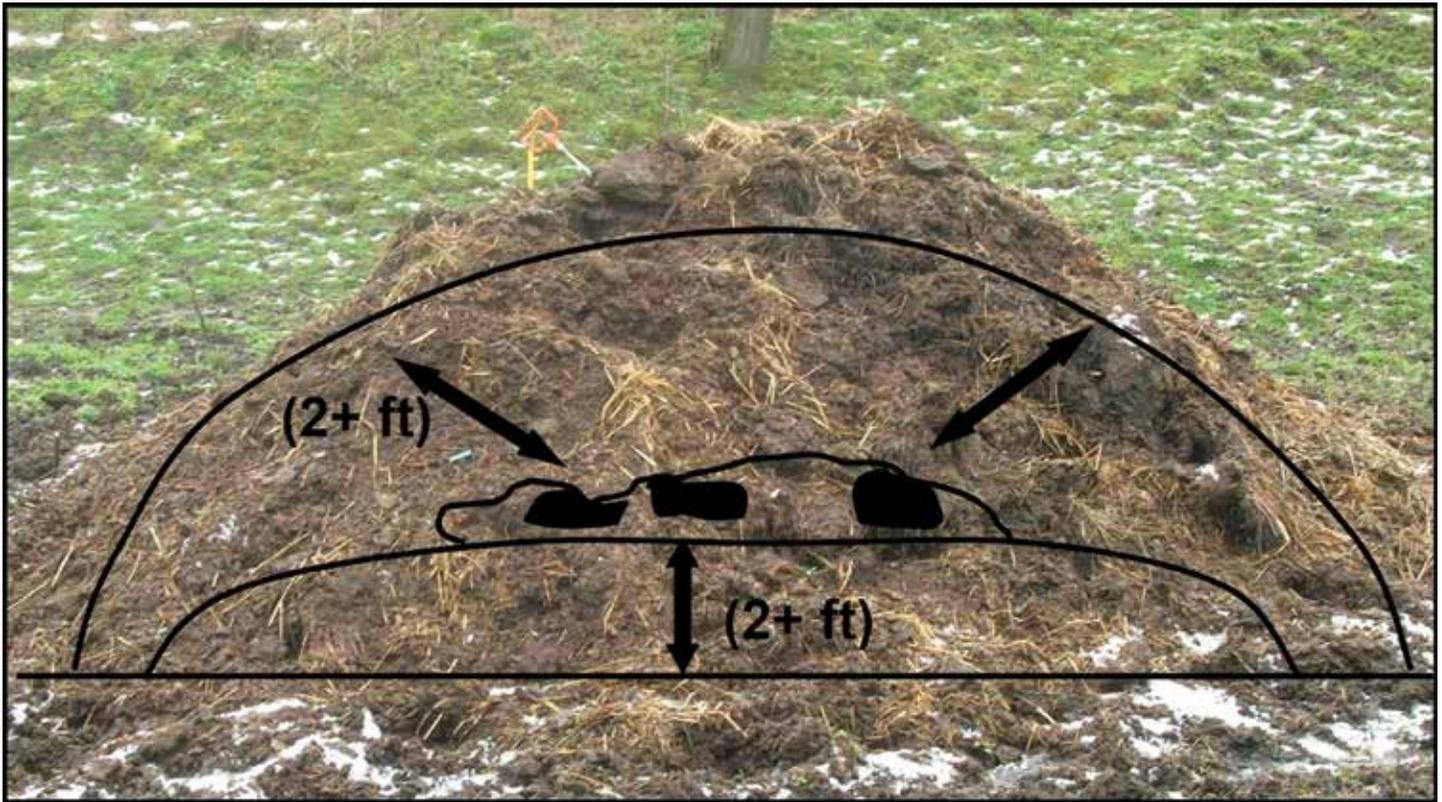
the American Veterinary Medicine Association) must be immediately buried (either on-farm or at a landfill), cremated, or properly composted to prevent secondary poisoning of wildlife or dogs that may scavenge the carcass. Rendering is not a safe method of disposal for euthanized carcasses. You may still be held liable [see sidebar page 16] even in the case of accidental wildlife poisoning.

## **Composting Livestock Mortalities**

With proper management and materials, on-farm composting is an economical and environmentally sound method of routine or catastrophic mortality management.

Composting allows for immediate, year-round carcass disposal with minimal costs and equipment. When compared to abandonment or burial, composting can protect surface and groundwater, reduce the spread of pathogens, and keep valuable nutrients on the farm.

Composting is a biological process in which aerobic microorganisms (bacteria and fungi) convert raw organic waste into stable, nutrient-rich organic matter. As a byproduct of metabolism, these microorganisms produce enough heat to raise temperatures inside the compost pile to well over 130°F and kill pathogenic bacteria and viruses. The compost



*Place the carcass on a base at least 2 feet deep of high-carbon material and at least 2 feet from any edge of the pile. Cover with 2 to 3 feet more of high-carbon material.*

microorganisms working hard to decompose the carcass require food (raw organic wastes), oxygen, and water to thrive. Too much of one thing or not enough of another can slow the compost process, or worse can lead to messy piles that attract pests, spread disease, or contaminate water sources.

The basic requirements of a successful mortality compost system are raw organic materials (carcass, manure, straw, sawdust, etc.), a dedicated area, and careful management. The same principles apply for smaller animals, but the process will require less time and materials. Before getting started, be sure to read some of the additional resources provided in the sidebar (see page 17) before getting started. Mortality composting is a relatively simple process that can be very easy to manage – but when things go wrong, it gets ugly!

When managed well, composting is a great way to turn a waste product

into a valuable soil amendment. Use compost to improve soil and plant health and increase the productivity of your garden or pasture.

### **Key Steps for a Successful Mortality Compost Pile**

1. Choose a well-drained site at least 300 feet from any stream, lake, pond, or well. Also consider the location of neighbors, other animals, and access roads. Be prepared to leave this compost pile alone for a full year if necessary, and make sure it is accessible in case covering with more compost material is necessary.
2. Start with a base of absorbent high-carbon material at least 2 feet deep and place the carcass on this base at least 2 feet away from any edge. Sawdust, straw, or hay works well for the base. If high moisture or poor drainage are concerns, a base of large wood chips under the primary

Wyoming law states, “It shall be the duty of the owner, or person having charge of an animal which may die in this state, to remove the carcass to a distance of not less than half a mile from the nearest human habitation, or to bury it with not less than two (2) feet of soil over it; and every person failing to so remove or bury such carcass, for more than forty-eight (48) hours, shall upon conviction, be fined in a sum not exceeding one hundred dollars (\$100.00)” (WY Stat 35-10-104).

composting materials will increase air flow and drainage.

3. Cover the carcass completely with another 2 to 3 feet of high-carbon compost material. Manure, bedding, old hay, silage, straw, and sawdust all work well. Again, make sure all edges of the pile extend at least 2 feet beyond any part of the carcass. This is critical as an exposed carcass will be smelly and attract pests!
4. Watch carefully for signs of disturbance and settling; add more compost materials if needed. This is especially important during the first few weeks. It is normal for the pile to settle a little, but if any part of the carcass becomes exposed, immediately add more compost material.
5. The compost will be ready to use in about four months to a year, depending on the size of carcass and compost materials used. After about six to 10 weeks of composting, the pile can be turned and mixed using a bucket loader to speed up the composting process, and multiple compost piles can be combined.

### Scavengers and Pests

A decomposing carcass that is not adequately covered will attract scavengers and pests. Using plenty of compost material, ensuring that the pile reaches temperatures above 130°F, and fencing the compost area will greatly reduce the risk of scavengers. A properly managed mortality

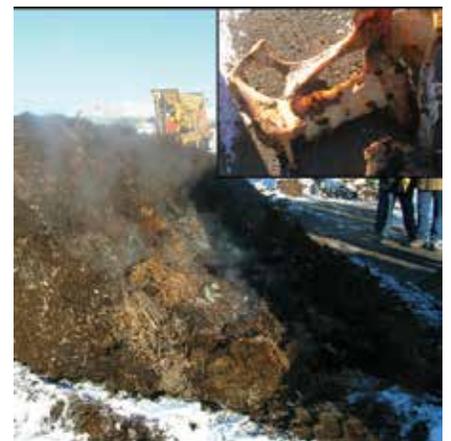
## SEE THESE RESOURCES

- Livestock Mortality Composting for Large and Small Operations in the Semi-Arid West.  
**<http://bit.ly/livestockcomposting>**  
Website includes link to instructional video in Spanish and English and 24-page booklet with color illustrations. To receive hard copy of this booklet in the mail, contact Caitlin Youngquist at (307) 347-3431 or [cyoungqu@uwyo.edu](mailto:cyoungqu@uwyo.edu).
- Guidelines for Mortality Composting from the Wyoming Department of Environmental Quality and the Wyoming Department of Agriculture  
**<http://bit.ly/wyolivestock>**
- On-Farm Composting of Large Animal Mortalities. Ten-page Washington State University Extension bulletin with color photos  
**<http://bit.ly/washingtonlivestock>**
- U.S. Fish and Wildlife Service Fact Sheet: Secondary Pentobarbital Poisoning of Wildlife.  
**<http://bit.ly/secondarypoisoning>**
- Resources for Making a Humane End of Life Decision for Your Horse. Humane Society of the United States.  
**<http://bit.ly/humanedecisions>**

compost pile does not typically attract scavengers and pests because there are no odors. However, once a pile has been “discovered” by scavengers, it is very hard to dissuade them!

### Final Product

The finished compost is a source of plant nutrients like nitrogen, phosphorus, and calcium. Use as a mulch around trees and shrubs, or spread on pastures and hay fields. The finished compost can also be mixed with other raw materials and used in future mortality compost piles.



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**Caitlin Price Youngquist's specialty, in addition to soil quality and manure management, is livestock mortality composting. She can be reached at (307) 347-3431 or at [cyoungqu@uwyo.edu](mailto:cyoungqu@uwyo.edu).**