

## Livestock mortality composting

There are a number of good reasons to consider composting mortalities. Composting can prevent flies, scavengers, rodents, and odors associated with burial or the drag-and-drop method. There is reduced risk to ground and surface water quality as well as increased on-farm biosecurity. It is advantageous to recycle the nutrients from mortalities; composting can lower operational costs. Composting is a more manageable approach to process large volumes of mortality material, such as in the event of a winter storm/ice event or toxicity problem during which multiple animals die.

### Regulations

Cattle and horse owners are exempt from solid waste permitting requirements when distributing mortality compost off-site provided the total of pre-compost material, partially composted material, and unused finished compost onsite is not more than 1000 cubic yards. These guidelines then apply:

- Carcasses must not have a prion-related disease, spore-forming disease, or other disease of concern identified by the state veterinarian.
- The owner/operator must use his own animals and may not accept animals from other sources.
- The end user must be notified that the compost includes animal mortalities.
- The compost cannot be applied to ag lands that will have a root crop in the next three years.
- Compost application must prevent direct contact with any crop part used for direct human consumption.

Additional requirements vary depending on local regulations, the volume of compost produced, the type of livestock operation, and use of the final product. Visit [www.mortcompost.info](http://www.mortcompost.info) or contact your local Health Department for more information.

### How-to

Location is important. Avoid sites with poor drainage, as well as any location within 300 feet of surface water and drinking water wells. A site with 2-6% slope and no rocks is optimal.

### Ingredients

- Dead animal(s)
- Bulking material such as chopped straw, sawdust, chopped hay, etc.
- Skid-steer for building and turning piles or rows
- Probe thermometer with 36" stem
- Logbook for recording start dates, temperatures, types of material, turning dates, etc.

Composting occurs most rapidly and effectively at a moisture level of 50-60%. This is moist, but not so wet that water is easily squeezed from a handful of material. The carbon to nitrogen (C:N) ratio should be 25:1 to 40:1. Too much nitrogen will result in release of ammonia or water-soluble nitrates that smell and can leach to groundwater or runoff with precipitation to surface water. Too much carbon results in inadequate microbial growth and slow composting.

A pile will typically be 6-8 feet tall with a base of 1.5-2x the height. Begin with bulking material at 2-3 feet deep. Place carcass so that all parts are at least 24 inches from any edge. Lance the rumen to speed up decomposition. Bury the carcass completely with bulking material, again so that all carcass parts are >24 inches from the edge. Record temperatures and any observations weekly. To kill bacteria and other pathogens, the internal temperature of the pile must reach 131°F for 3 consecutive days. After several months, turn and mix the pile – only large bones and some hair should be identifiable by now. After turning, the internal temperature should rise again to at least 131°F for 3 days. Finished compost should not smell or have any visible trace of animal tissues. Large bones will be brittle and can be put into the next pile.

For more detail, visit the WSU BioAg website [www.mortcompost.info](http://www.mortcompost.info) or read the Department of Ecology online publication “On-Farm Composting of Livestock Mortalities” at <http://www.ecy.wa.gov/biblio/0507034.html>.

--Adapted from [www.mortcompost.info](http://www.mortcompost.info) by Tip Hudson, WSU Extension.

*--Tip Hudson, WSU Extension – Kittitas County*