

Disposal of Dead Livestock & Equine

Introduction:

Methods and processes of dealing with dead animals have always been and continue to be a concern in all animal production operations both large and small, slaughter plants, and other facilities that have animals. Proper disposal methods/systems are especially important due to the potential for disease transfer to humans and other animals, and the pollution of soil, air and ground water. Properly composting animal carcasses may be less of a threat to groundwater than burial or unattended surface dumping. Composting has been shown has a viable means of disposing of dead livestock, horses and birds. (This method is not recommended for whole herd or flock disposal cases).

On-farm composting of dead animals generated on the same farm as the composting facility is exempt from having a permit if operated in compliance with the Massachusetts Department of Agriculture regulations. (Refer to MDAR 330 CMR 25:00).

Best Management Practices:

Burial

Burial must be no less than 6 feet deep with a minimum of 30 inches of soil cover. Burial must be in well drained soils and be at least 2 feet above the highest groundwater elevation. Burial must be at least 100 feet from a private well, 200 feet from a public well, 50 feet from an adjacent property line, 500 feet from a residence and more than 100 feet from a stream, lake or pond. Burial cannot be in a wetland, floodplain or shoreline area.

Composting

1. Check with your state's environmental agency or state veterinarian before you begin composting dead animals. The Massachusetts Department of Environmental Protection, for instance, does not require a permit.
2. As an underlying layer, or substrate, use a mixture of hay, manure and bedding with moisture content between 40 to 50 %. Odor can be kept to a minimum as long as the pile is turned to aerate it and the covering material has enough carbon sources, such as straw, sawdust or hay, to provide a 25:1 ratio of carbon to nitrogen.
3. Construct a windrow 10 feet wide by 4 feet deep of the dry manure and bedding mixture. Locate it on a solid spot where the ground slopes 1 to 2%. Site it lengthwise with the slope of the land so runoff and snow can't puddle against the windrow. If possible, orient the windrow north to south so that only one end faces a cold exposure. Choose an area where tractors can maneuver in all weather.
4. Once you've placed a carcass (might want to puncture the rumen on cattle to avoid a gas buildup and possible explosion), cover it with at least 2 feet of the same manure and bedding mixture that is underneath the carcass. Maintain a stockpile of the material for covering. Carcasses can be added anytime but should be spaced about 4 feet apart.
5. The pile must heat up for proper composting. Use a compost-style dial thermometer, ideally with a 30-inch long probe, to monitor the temperature. Temperatures around the carcass will rise to 150 to 160 degrees. Monitor temperatures every two to three weeks. When temperatures fall to 110 to 125 degrees, stir the material with a bucket loader, allowing oxygen to re-activate the composting.

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6. Left untouched, an adult carcass will compost in five to six months. Stirring the mix and covering the carcass again can accelerate the time. Colder temperatures slow the compost process. When the air temperature is above 50 degrees and the pile is turned when its temperature drops below 120 degrees, the soft tissue in a 1,500-pound cow will finish composting as quickly as two to three months.

There will be less bony residue with younger carcasses. Calves, for instance, may compost in three to four weeks under summer conditions. In areas with heavy rainfall, the process can be slowed if there's too much moisture, preventing aeration.. Anchor a tarp over the windrow or mix some very dry sawdust or shavings into the substrate.

7. When you see no more soft animal parts, you can spread the compost or leave it in place. Bones, which degrade very little, can be pulverized to spread on fields, creating good fertilizer. Or they can be left in the pile.

Resources:

Glanville, Thomas. Dr. 1999. Iowa State University – Iowa Extension. Composting Dead Livestock – A new solution to an old problem. Department of Agricultural & Biosystems Engineering, ISU. Ames. IA. 50011.

Livestock and Poultry Environment Stewardship (LPES) Curriculum. Mortality Management.

www.lpes.org/Lessons/Lesson51/51_Mortality_Management.html

Massachusetts Department of Agriculture Resources. 251 Causeway Street. Suite 500. Boston. MA 02114. Phone (617) 626-1700. Website: www.mass.gov/agr

Rynk, Robert, et.al 1992. On-Farm Composting Handbook. Northeast Regional Agricultural Engineering Service. 152 Riley-Robb Hall. Cooperative Extension. Ithaca, N.Y. 14853-5701.

For more information visit www.umass.edu/cdl

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