Composting Animal Mortalities

By Dr. Steve Higgins

Composting can provide livestock producers with a convenient method for animal mortality disposal, as it only takes a few weeks to decompose an adult sheep or goat without any foul smells and relatively little effort. Mortality compost can then be used as a valuable soil amendment or can be stockpiled and reused to compost other mortalities.

Composting is a natural decomposition process conducted by microorganisms that reduce the size of the material by transforming organic products, water, and energy into carbon dioxide, vapor, and heat. If composting is done correctly, the pathogens that cause animal mortalities will be destroyed by the high temperatures reached during the composting process. However, if the dead animal exhibits signs of scrapie, then it should be incinerated by a permitted individual such as a veterinarian.

To compost an animal mortality, all the producer needs is a proper site or structure and a bulking agent such as saw dust, wood shavings, or wood-based bedding and manure. A front-end loader makes the composting process easier, but is not necessary. A composting site (bare soil) should be located away from floodplains, roads, and other sensitive areas. Composting structures, which consist of an impermeable floor (concrete, soil cement, etc.), are preferred to composting on bare soil because of the potential leachate that can occur.

To begin composting, place at least two feet of bulking material below, above, and around the carcass. Completely covering the carcass will help control odors and deter scavengers and flies. If signs of vermin are present, add more bulking material. Other mortalities can be added on top of the pile, extending the pile vertically, or placed beside the previous mortality, extending it horizontally. This is a management decision that depends on the space and equipment available.

Although composting is relatively easy in comparison to other methods of mortality disposal, there is some maintenance involved. Effective composting requires specific temperature and moisture conditions. To destroy pathogens, the internal pile temperature must reach 140° to 160°F and be maintained for five days. Temperatures can be determined using a long-stemmed compost thermometer or by visually observing for signs of heat (Figure 1). To estimate moisture level, collect a handful of compost and squeeze it. If moisture drips from your hand, the pile is too wet. If your palm does not get wet, the pile is too dry. When your hand is wet but not dripping, the moisture level is optimum. The compost pile should be periodically checked for temperature, moisture conditions and signs of vermin.

Figure 1. Proper composting will result in an internal pile temperature of 140° to 160°F, causing the pile to steam.

For more detailed information on how to compost animal mortalities, see the University of Kentucky Cooperative Extension Service publication *On-Farm Composting of Animal Mortalities* (ID-166). For information on other dead animal disposal methods, see the University of Kentucky Cooperative Extension Service publication *On-Farm Disposal of Animal Mortalities* (ID-167).

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