

Natural Rendering: Composting Horse Mortality

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Composting a horse on-site, when done properly, is cost effective, environmentally sound, biosecure and easy to accomplish. Enveloping your animal right away in a properly built compost pile will deter domestic animals and wildlife from scavenging. It will also provide you with a soil-like material you can use. In many states, on-site composting is not only legal it is the preferred disposal method, providing certain guidelines are followed. It requires the use of carbon sources such as woodchips, which can be purchased or acquired from municipalities, road crews and utility companies, etc

Static Pile Composting is pretty magical. The animal is enveloped in carbon-based material and left for months or years with no turning or work required. In this passively aerated system micro- and macro- organisms digest the animal and give off heat, which kills pathogens. The result is a coarse soil-like medium. Make it easier on yourself and plan ahead. Secure coarse woodchips, shavings or other coarse carbon materials and stockpile them in a place you have determined is suitable for the procedure (away from wells, streams and other water sources) that can be used for 6 to 12 months.

Why Compost Mortality -- Pathogen kill occurs in thermophilic composts, Can be done any time of the year, even when the ground is frozen, Can be done with equipment available on most farms, Relatively odor free, All sizes of animals can be composted, Placental membranes and other tissue can be composted, Paunch manure and other parts not accepted in rendering will compost, Relatively low labor and management needed and Low cost.

Key Points of Static Pile Carcass Composting

- ◆ Select a site that is well drained, at least 200 feet from water courses, sinkholes, seasonal seeps or other landscape features that indicate the area is hydrologically sensitive.
- ◆ Lay 24-inch bed of bulky, absorbent carbonaceous material containing sizeable pieces 4-6 inches long. Utility and municipal wood chips work well. Ensure the base is large enough to allow for 2-foot clearance around the carcass.
- ◆ Lay animal in the center of the bed. If a horse needs to be euthanized and is able to walk, you may want to walk the animal onto the bed before the veterinarian administers the drugs. Lance the stomach to avoid bloating. If skin is totally intact the animal will bloat and carbon may come off the pile and expose parts of the animal.
- ◆ Cover the animal with 24" of carbon material, making sure the whole animal is well covered to keep odors under control, insulate pile heat generated by organisms and keep vermin or other unwanted animals out of the windrow.
- ◆ Leave the pile static for 6 months to 1 year; after that, the pile can be turned or combined with another pile. The full process will not be complete for about 1 year.

- ◆ The resulting soil-like material can be used on non-food crops, distributed in forested areas, to plant trees, etc. Reuse the composted material for another carcass compost pile, or remove large bones and land apply
- ◆ Site cleanliness is the most important aspect of composting; it deters scavengers, helps control odors, and keeps good neighbor relations.

For large livestock farms with the potential for multiple deaths annually, place animals in windrows, which are long, narrow piles 8-12' wide x 5-7' high x as long as you need or there is space.

A note about veterinary pharmaceuticals: If your horse has been put down with a euthanasia agent such as sodium pentobarbital, care should be taken to dispose of the remains as quickly as possible as they will contain potentially harmful residues. Wildlife and domestic animals may be attracted by the carcass and become intoxicated if allowed to feed on it. Deep burial and properly built compost piles will deter pets and wildlife from feeding on carcasses. Sodium pentobarbital will degrade during the composting process so that by the time composting is finished either no or very low levels of the drug remain.

Monitoring

A log of temperature, odor, vectors (any unwanted animals), leachate (liquid that comes out of the pile), spills and other unexpected events should be kept as a record of the process. This will allow the composter to see if sufficiently high temperatures were reached and adjust the process if there is any problem. The most efficient temperature range for composting is between 104 F and 140 F (40 C and 60 C). Compost pile temperatures depend on how much of the heat produced by the microorganisms is lost through aeration or surface cooling. During periods of extremely cold weather, piles may need to be larger than usual to minimize surface cooling. As decomposition slows, temperatures will gradually drop and remain within a few degrees of ambient air temperature. Temperature monitoring is crucial for managing the compost process. Thermometers with a 3-4 foot probe are available.

Pathogen Control-Pathogens are organisms that have the potential to cause disease. There is a wide array of pathogens found in our environment and pathogens may be elevated in compost operations. While there are currently no temperature regulations for mortality composting, following NYS DEC regulations currently applicable for biosolids is highly recommended to ensure adequate pathogen control and minimization in this type of composting.

If using an aerated static pile, the pile must be insulated (covered with a layer of bulking material or finished compost) and a temperature of not less than 131 F (55 C) must be maintained throughout the pile for at least 3 consecutive days, monitored 6-8 inches from the top of the pile.

For more information on composting horse and other livestock, see

<http://cwmi.css.cornell.edu/mortality.htm>.