

Carcass Composting Operations

Windrow Composting

In the event of a large-scale animal emergency, animal health and carcass disposal professionals will determine the most effective, cost-efficient and environmentally sound method of carcass disposal. In some cases that would be a coordinated system of centralized windrow composting sites.

The goal of outside windrow composting is the natural decomposition of dead animals. Carcasses are buried above ground inside a mound of organic material. The static pile is trapezoidal shaped with no walls or roof, which allows oxygen to help with the decomposition process. Mortality composting is an increasingly popular, safe and viable alternative compared to other disposal practices because of cost savings, reduced environmental risks, and the generation of a useful end-product.

Composting Process

After animals are euthanized, they are simultaneously combined with a carbon source (e.g., wood chips, ground corn stalks) in a commercial grinder (similar to the one shown to the right) at an approximate 1:1 ratio by volume. There is no need for storing of carcasses on site—all animals euthanized during daily operations can be ground and placed into piles prior to the end of daily operations.



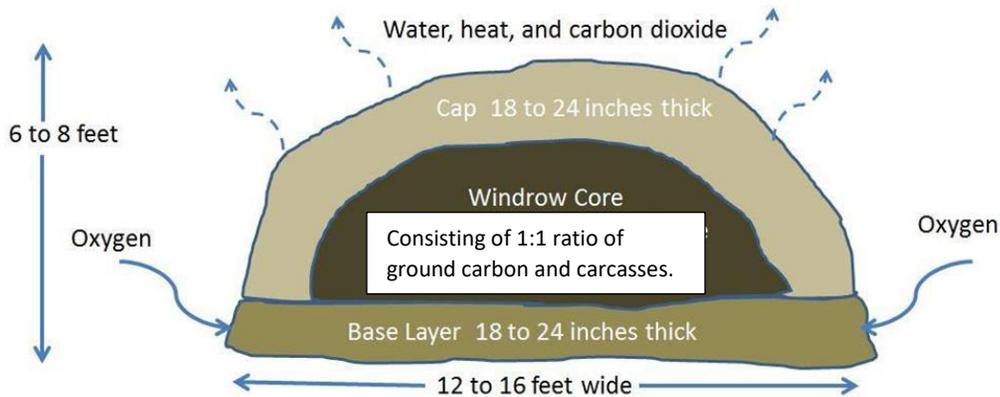
After grinding, the product will be placed on an 18 to 24-inch-thick bed of carbon material. This product forms the core of the windrow. A cap (again made of the carbon material) will be placed on top of the core at a thickness of 18 to 24 inches. The typical finished windrow height is six to eight feet tall and 12 to 16 feet in width.

An advantage of outdoor windrow composting is that it can be adapted for a large number of carcasses after a catastrophic event. This method is feasible for any size of carcass, and the length of a windrow can easily be increased to accommodate

additional carcasses, if needed. This method also enables the workers to load, unload, and turn the pile from all sides, ensuring worker safety.

Windrow Construction

Three critical elements of windrow construction (shown below) are: 1) a base layer that provides absorbency, structure and airflow (made of the carbon material), 2) a windrow core containing a mixture of carcasses and carbon source, and 3) an adequate cap made of the carbon material to control odors and pests. These windrow construction steps may be done concurrently or as separate steps.



Shown to the right is a completed windrow after the initial turning with a commercial compost turner. Windrows will initially be turned at 3 to 4 weeks and then every two to four weeks or until the curing process is complete. Windrow temperature and decomposition will be monitored to assure the composting process is working correctly. After completion of the curing process, which is typically 18-24 weeks, the compost is ready for application to your field or garden just as with any compost you can buy at your local garden store.



End Product: Compost

The end product of carcass composting is a homogenous, dark brown, soil-like material called “humus.” This material contains mostly mesophilic bacteria and is suitable for use as a soil amendment. Some carcass parts, such as pieces of skull, hooves, teeth, and large bones, may remain intact in windrows (outside and inhouse) and in carcass bin compost piles, but are not identifiable in ground carcass composting. However, these materials are relatively small and brittle or rubbery and degrade when exposed to nature.

Composting Expertise

Disposal via composting requires an on-site subject matter expert (SME) to ensure adherence to established protocols and environmental guidance, oversight of windrow construction and maintenance, and success of the biological treatment process for reducing pathogens and stabilizing the organic material. There is an extensive network of compost SMEs throughout the United States that are trained and designated as specialists by the U.S. Department of Agriculture Animal and Plant Health Inspection Service for compost disposal of animal mortality, including one here in Kansas, who serves in an advisory capacity in any Kansas composting discussion.

Questions about composting? Contact Ken Powell, KDHE Bureau of Waste Management, Ken.Powell@ks.gov or 785-296-1121.