Basics of on-farm animal mortality composting

Source: Steve Higgins, director of environmental compliance for the Kentucky Agricultural Experiment Station

Despite adequate care and management, animal mortalities occasionally occur on farms. When they do, Kentucky livestock producers have few options to safely dispose of the carcass. On-farm composting is a low-cost, effective way to dispose of dead animals without contaminating waterways or causing a smelly nuisance.

Two materials are needed for composting: the carcass and a bulking agent. Bulking agents are things like sawdust, wood shavings, and wood mulch. These materials provide a source of carbon to offset the nitrogen from the carcass. They soak up liquid produced during decomposition, regulate airflow through the pile and keep scavengers away. Usually, producers will layer 2 feet of bulking agent on the bottom, the carcass and at least another 2 feet of the bulking material on top of and on the sides of the carcass. A front-end loader is helpful to transport the carcass and bulking agent and create the pile.

Ideally, you will have an enclosed composting facility. A roof keeps the pile from getting too wet and prevents runoff. Sidewalls or fences can protect the decomposing carcass from scavengers and pests. Concrete floors keep compost from entering ground water. The size of the pile will depend on the type of facility size and the type of bulking agent and equipment you use. A typical pile for a large animal (more than 1,000 pounds) should have a height of approximately 6 feet.

Moisture and temperature control is critical to proper composting. If the material is too wet, it could pollute surface or ground water. You can check the moisture by squeezing material in your hand. If it drips, it is too wet. If your palm does not get wet when squeezed, the material is too dry. Temperatures inside the compost pile need to be between 140-160 degrees F. You can purchase a long-stemmed compost thermometer to make sure the pile is reaching the right temperature.

The compost should not emit foul odors at any point in the process. If it starts to smell bad, then something is wrong. You will need to check the pile’s moisture content, temperature, airflow, carbon-to-nitrogen ratio and the amount of material covering the carcass to determine the problem and resolve the issue.

If done correctly, the carcass should decompose within three to six months. You can apply the compost to cropland as fertilizer or reuse it to compost other livestock mortalities.

More information on on-farm dead animal composting is available in the University of Kentucky Cooperative Extension Service publication ID 166: On-farm composting of Animal Mortalities. It is available online at <https://afs.ca.uky.edu/files/on-farm_composting_of_animal_mortalities.pdf> or by contacting the (COUNTY NAME) Extension office.

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