

Composting Swine Mortality

Alabama Guide Sheet No. AL 317A



Definition

The composting of swine mortality has proven to be an acceptable process, especially for smaller swine. The composting facility is a roofed structure with primary and secondary composting bins. The composting process uses a simple mixture of dry poultry manure (litter), swine carcasses or parts, and water. After a complete composting process, the material can be land-applied according to the nutrient analysis.

Operation and Maintenance

Recipe

Follow the recipe carefully until it has been determined that the process is working well. Ingredients may be substituted on a trial basis to improve the composting process.

Hints

1. For all recipes, allow about 1 gallon of water per 25 to 60 pounds of litter. Moist litter may need no water; very dry litter will need the full gallon. The water should be sprinkled or sprayed uniformly over the carcasses.
2. A 5-gallon bucket of dry litter will weigh about 16 to 18 pounds.
3. Sawdust has been used successfully for composting hogs in Missouri. The bins were uncovered, loaded at relatively low rates (less than 20 pounds per cubic foot annually), and used a longer compost cycle (more than 120 days).

Recipe

Swine Or Swine Parts Weighing Up To 50 Pounds

1.0 Pound Carcass
 1.5 Pounds Poultry Litter*
 .25 To .50 Pounds Water**

Swine Or Swine Parts Weighing Up To 100 Pounds

1.0 Pound Carcass
 2.0 Pounds Poultry Litter*
 .35 To .65 Pounds Water**

Swine Weighing Over 100 Pounds

1.0 Pound Carcass
 2.5 Pounds Poultry Litter*
 .40 to .65 Pounds Water**

*Based on dry litter

**One gallon of water weighs 8.34 pounds

Basic Operating Procedures

1. Prepare a mat of litter in the bottom of the bin about two days before adding carcasses. Wet the mat of litter as needed. The mat should be about 12 inches deep. This should begin to preheat before adding animal carcasses.
2. Place carcasses in a single layer on the preheated litter, completely cover the carcasses with the correct amount of litter, wetting the litter as needed. Do not leave any part of a carcass exposed, even

if extra litter must be added. Do not place any carcass parts within 12 inches of the bin sidewalls. Do not overload a composter. Extra mortality should be buried, incinerated, or hauled to a rendering plant. If burial is used, see Alabama Guide Sheet No. AL 317B - Emergency Disposal of Dead Animals.

3. Continue this procedure until a bin is full. Monitor the temperature in the bin as it is filling. Temperatures should continually exceed 125 to 130°F. They may be as high as 160°F. Do not stack the mixture over 5 feet high, or a fire is possible (see Guide Sheet No. AL 313 - Preventing Fires in Litter Storage Structures).
NOTE: If a bin does not properly heat, it is too wet or too dry, or was filled improperly. Usually, the cause is dry litter. Correct this by turning the mixture into an adjacent bin and adding water as it is turned. Mixtures that are too wet will attract excessive numbers of flies, have a strong odor, leak large amounts of liquid from the bottom of the bin, and will appear rotten. This can be corrected by turning into an adjacent bin and combining with dry litter.
4. It is suggested that swine up to about 100 pounds stay in the primary bin about 60 days after it is filled. Heavier feeders, sows, gilts, and boars may have to stay in the primary bin at least 90 days after the last carcass is placed.
5. After the prescribed time, the primary bin should be turned into the secondary bin. Special attention may be required to cover partially composted animal parts which become exposed after turning. Water will usually need to be added in the turning

process to moisten the litter and cause the compost to go through a second heat.

6. After 90 to 120 days in the secondary bin, the material should be ready for land application. Even after the secondary stage of composting, some of the larger bones such as the skull and leg bones will not be completely decomposed. They may or may not be friable enough to be spread by manure spreading equipment. The producer may want to remove the bones by hand and place them into the composter to undergo another heat or dispose of them by another method.

Cautions

Swine composting is still an experimental process and careful monitoring is needed to ensure success. All composting operations should be prepared to occasionally bury some swine in a legally prescribed manner or render the dead animals.

References

University of Arkansas Cooperative Extension System:

Timely Information Sheet by John Langston, CES Extension Agricultural Engineer; and Dennis Carmen, NRCS State Conservation Engineer, Little Rock, Arkansas.

NRCS AL Conservation Practice Standard:
Code 317 - Composting Facility

NRCS AL Guide Sheets:

AL 317B - Emergency Disposal of Dead Animals
AL 313 - Preventing Fires in Litter Storage Structures

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