A Guide to Composting Horse Manure

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Composting Methods

Passive Composting

Passive composting works well for small horse farms (from one to five horses) that do not have a tractor to turn the piles or are not able to turn them on a regular basis. This method involves forming small piles of manure approximately five to seven feet at the base and three to four feet high and leaving them mostly undisturbed until it has decomposed into a stabilized product. To build a pile to the minimum three-foot height without a tractor, it’s easiest if the pile is contained in a bin or enclosure. The sides of the bin should have some space between each board to increase the amount of air that can reach the pile.

Small piles are designed to take advantage of natural air movement. As an actively composting pile heats from the inside, the warm air rises, pulling cooler, fresher air inward from the sides and bottom. Using PVC pipes with holes drilled in them (as described in the section on managing airflow) can also help aerate the pile. With this method it is especially important to cover the piles to keep them from getting too wet. With low amounts of bedding and the right amount of moisture, these piles can get quite hot and produce good compost.

If possible, you’ll still want to turn the pile occasionally to get the manure on the outside into the center where the heat from the composting process can kill parasites and weeds.

The composting designs on pages 10 and 11 are designed for a small horse farm with one to five horses. You can tailor this system to meet your needs depending on how many horses you have, the amount and type of bedding you use, and how you plan to use the finished compost. If you plan to use a tractor you will need a much sturdier design.

Two bins will probably be adequate for one to five horses but you can add a third for convenience. Pile manure and stall wastes into the first bin until it is full, then leave it alone to compost and start filling the second bin. In two to four months, the first bin should be done composting and ready to use. Adding a third bin allows one bin for the daily stall wastes, another bin that is full and in the composting stage, and a third bin for the finished compost to be removed and used at your leisure.

Turned Piles

If you have a tractor available to form and turn your piles, you’ll improve the amount of air reaching all areas of the pile and speed up the rate of decomposition considerably. Turning also takes the material from the exterior of the pile and puts it into the interior of the pile so that all materials are composted evenly and weed seeds, parasites, pathogens, and fly larvae can be destroyed by the high interior temperatures.

Piles are most easily turned if placed on a concrete pad. This makes it easier for the bucket to scrape the surface and keeps the tractor tires from tearing up the ground. It also keeps nitrates from the pile from soaking down through the soil and into groundwater. As with the passive method, it is optimal to have three compost piles: one to which the fresh manure is added daily, one in the process of decomposing, and one composted and ready to use. A 30' x 30' pad will house three piles with some room to move.

Aerated Static Piles

This method uses an aeration system-usually a system of perforated pipes connected to a blower-placed under the compost pile to periodically blow or draw air into the pile. A simple on/off timer is used to control the aeration rate. A typical setting might be 3 minutes on and 12 minutes off, running 24 hours a day, 7 days a week for 30 days or more. Adjusting the frequency and duration of airflow into the pile controls the temperature. This process provides more direct control of composting and permits larger piles. This method requires a considerable initial investment but if you have more than five horses on your property it may be worth it, especially if you are able to sell your compost.

Compost Troubleshooting Guide