

Composting Livestock Manure

Adapted From: Pierce County Conservation District - In writing this article, excerpts were taken from "How to Compost and Use Horse Manure" by Alayne Blickle, Education Coordinator for the King Conservation District.

Manure bin example: King County Fair, King County Solid Waste Division and King Conservation District

Benefits

Composting livestock manure is an excellent manure management technique for small farm owners. Collecting manure on a daily or weekly basis from paddocks, stalls, and confinement areas for composting has several benefits:

it provides the owner with a free source of compost for the yard, garden, pasture, or gardening neighbors that slowly releases [nutrients](#) and won't burn plants

- it reduces flies by eliminating their breeding ground
- it reduces the possibility of parasite re-infestation of your animals- the heat generated in the composting process kills parasite eggs
- it reduces the chance of manure contaminated runoff from your property contaminating surface and ground water
- it reduces the amount of mud in your confinement area, and increases the life of organic footing material

it prevents the introduction of foreign weeds by sterilizing weed seeds found in the manure

Site selection

First, select a site for your compost bins. You want to put them in a high and dry area of your property, not in a low lying area or in an area that receives surface flows. Otherwise, the compost will become a soggy mess and the nutrients you are trying to retain will be lost. A location that is also close to your stall and paddock areas will make the chore of cleaning up easier and less time consuming.

How many bins?

Next, decide on the number of bins needed. You will need at least two bins for 1 to 3 large animals. Pile manure and stall wastes in one bin. When that bin is full, allow it to compost and start filling the second bin. Once the material in the first bin is done composting, you can start using it.



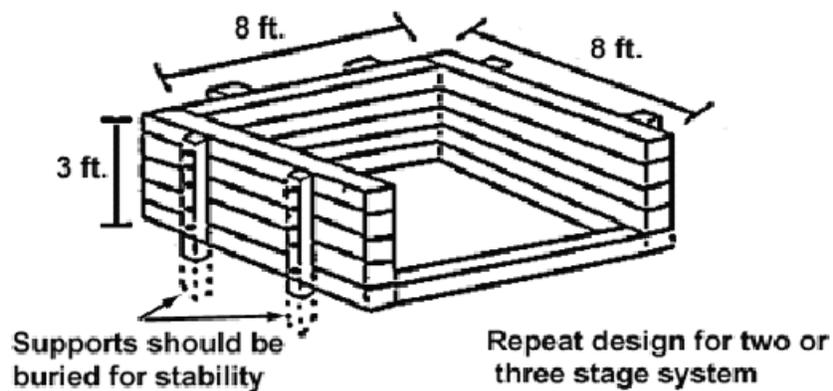
Building your bins

After you have decided where to put your compost bins, and how many bins you need, it is time to gather or purchase materials. Compost bins can be made of something as simple as wood pallets placed on end and nailed together, or of more durable and aesthetically pleasing landscape timbers. A two bin landscape timber system can be built by one person in about 8 hours, for approximately \$150.00 in materials using this typical [list of materials and tools](#).

For two 3' x 3' x 8' bins, the following equipment and supplies are needed:

- 50 - 8' landscape timbers (or similar wood)
- 100 - 5/16" x 5" lag screws
- ratchet & socket set
- plastic sheet/tarp to cover top
- post hole digger or shovel
- drill & bit
- carpenter's level
- power or hand saw

The following sketch can be used as a construction plan for one section of the bin.



Special Considerations:

- place structure on high ground
- turn pile frequently to speed composting
- cover with a tarp
- do not allow contents to get too wet or dry

Compost management

Compost management activities include tarping, turning, and watering. Like all living things, the micro-organisms which break down the manure and bedding require air and water. Too much or too little of each can cause problems.

Cover each of your bins with a [tarp](#) to prevent your manure piles from becoming soggy in the winter and too dried out in the summer. A tarp also prevents the nutrients you are trying to save from being washed out and contributing to surface and ground water contamination.

Turning the piles allows oxygen to get to the bacteria and organisms which break down the manure into a soil-like substance. How often the pile is turned, determines how quickly the compost will be ready. However, you have access to a small tractor, or have a strong back, turning the pile can be difficult. Air will permeate through the pile to a depth of about 3 feet. An easy way to get air to the center and avoid turning the pile frequently is to build a couple of 4 inch pre-drilled [PVC pipes](#) into the center of the pile. The pile will still need to be turned occasionally to get the manure on the outside into the center so the heat from the composting process can kill parasites and weed seeds, and to achieve a more completely composted product.



On farm manure composting, showing aeration tubes

Keep the manure pile as damp as a wrung out sponge. Water the pile with a garden hose every time you add a wheelbarrow of new material and when you turn it. You can also use the PVC pipes mentioned above to get water into the center of the pile. A soaker hose can also be used while the pile is building. Watering the pile in the winter is usually not necessary if you are adding rain soaked material collected from outside paddocks.

If you follow the above guidelines, your compost can be ready in as soon as 21 days. Depending on how often you turn it and whether it stays damp, the composting process should take between 1 and 3 months. You will know when your compost is ready when the material looks evenly textured and crumbly like soil. **Marion SWCD suggests to get your compost tested to ensure safety.**

Applying the compost in the garden

Compost is a rich soil amendment which improves the health of both plants and the soil. Compost improves the physical structure by making it more porous, adds fertility and increases the ability of the soil to hold moisture and plant nutrients. It can be added to house plant potting soil, gardens, flower beds, lawns, or pastures. Sprinkle a thin layer (no more than 1 inch per application) on your lawn or use it as a mulch to control weeds and retain moisture in the garden or flower beds.



*The goal of the Marion SWCD **Manure Exchange Service** is to help farmers and ranchers that need to dispose of manure because they do not have the land available to utilize the nutrients on their farm. The program works in conjunction with the local Agricultural Water Quality Plan by removing a potential source of water pollution from farms/ranches. It will also benefit others in the community seeking a nearby source of fresh organic fertilizer. It is a great way to recycle our natural resources! Livestock owners wishing to “share” their manure are encouraged to contact Marion SWCD to be added to the Manure Exchange Provider List which is continually updated. The Marion SWCD recommends that the end user treat the material as raw organic matter and that it be composted further before use. The Manure Exchange Service is a goodwill community exchange program. The manure/compost is “not certified to be weed free” - no guarantees or warranties apply. Wishing everyone continued success!*