

Horses for Clean Water

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How to Compost and Use Horse Manure

If you care for horses on your own place then you have, no doubt, wondered about what to do with that huge mound of manure and stall waste generated by your horse. In fact, one horse can create a serious pile in no time -- one horse produces about 50 lbs. of manure per day, over eight tons per year. Add to that the wheelbarrow or more of bedding you use each day and in no time at all you have a virtual manure mountain!

There are other concerns for the mismanaged manure pile as well -- horses allowed to graze near their own manure are quickly reinfested by larva which hatch from the worm eggs. Runoff from soggy manure piles can cause serious surface water contamination problems, and in some areas these issues are controlled by laws. Then there are the associated odor and fly problems, and if you live close to others this may concern your neighbors as well.

Composting horse manure is an excellent manure management technique, especially useful for backyard or small farm owners. Larger horse facilities or those using equipment (tractors) to manage their composting process can also develop a composting system. Additional design help for these places is available from local Conservation Districts, USDA Natural Resources Conservation Service, or Cooperative Extension office (see "For More Information" at the end).

Picking up manure from stalls, paddocks and confinement areas on a daily or regular basis and composting it has several benefits:

- it reduces the possibility of parasite reinfestation in your horse -- the heat generated in the composting process kills worm eggs as well as pathogens and weed seeds
- it reduces flies by eliminating their breeding ground
- it reduces odors
- it reduces the volume of material you have piled up -- the composting process will reduce the size of the pile by about 50%
- it provides you with a free, easy source of compost -- a valuable addition to your pastures, garden, yard or horseless neighbors
- it reduces the chance of manure contaminated runoff from your property reaching surface or ground waters in your area
- it makes your property more pleasing for you and your neighbors to look at and enjoy

This article will give you information on how to build and use a horse manure composting system. This system is designed for a backyard or small farm with 1 to 5 horses. You can tailor your composting system to meet your needs depending on how many horses you have, the amount and type of bedding material you use, and how you plan to use the finished compost.

First, select a site for your composter. Look for a high, level area on your property -- don't put your composter in a low lying area or it will turn into a soggy mess. Choose an area away from property lines to avoid zoning issues and problems with neighbors. A location that's convenient to your stall and paddock areas will make the chore of cleaning up easier and less time consuming.

Next, decide on the number of bins you'll need -- at least two bins, maybe a third for convenience. A two-bin system works by piling manure and stall wastes in one bin. When that bin is full allow it to compost and start filling the second bin. Once the first bin is done composting you can start using the composted material.

For convenience or if you have 3 or more horses you may want to consider going to three-bins. This allows for one bin for daily wastes, another bin which is full and in the composting stage and the third for the finished compost to be removed and used at your leisure.

After you have decided where to put your composter, and how many bins you want, it's time to purchase materials. The compost bin system can be built by one person easily in one weekend. It costs about \$ 90 to \$125./bin for materials, depending on the type of wood you use and the cost in your area. A list of materials and tools needed is included at the end of this article. Feel free to improvise by choosing materials that will work for you and your situation.

Compost management includes 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 pile from becoming a soggy mess in the winter and too dried out in the summer. A tarp also prevents the nutrients you're saving for the garden from being washed out into the surface water and causing other problems.

Turning the compost-to-be allows oxygen to get to the bacteria and organisms which break down the material into dirt-like structures. How often you turn it determines how quickly your compost will be ready. However, unless you have access to a small tractor or enjoy a good work-out, turning the pile can be difficult. Air will permeate through the pile to a depth of about 2 ft. An easy way to get air to the center and avoid turning the pile as frequently is to insert a couple of 5ft PVC pipes into the center of the pile. Use a drill to put holes along pipes. 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 weeds.

Your compost material should be about as damp as a rung out sponge. In the summer water your compost with a garden hose when you turn it. An easy way to add water is just to hose down the manure in your wheelbarrow before you dump it in the pile.

If you follow the guidelines above, your compost could be ready in as short as one month! Depending how often you turn it and whether it stays damp, it should take between one to three months. You will know when your compost is ready when the material looks evenly textured and crumbly like dirt.

Compost is a rich soil enhancement which improves the health of both plants and soil and helps to retain moisture. Spread compost in pastures during the growing season at no more than a 1/2" layer at a time. It can be also added to the soil of house plants, gardens or flower beds -- or shared with horseless neighbors.

For two 4'x8'x8' bins, the following list of equipment and supplies are needed:

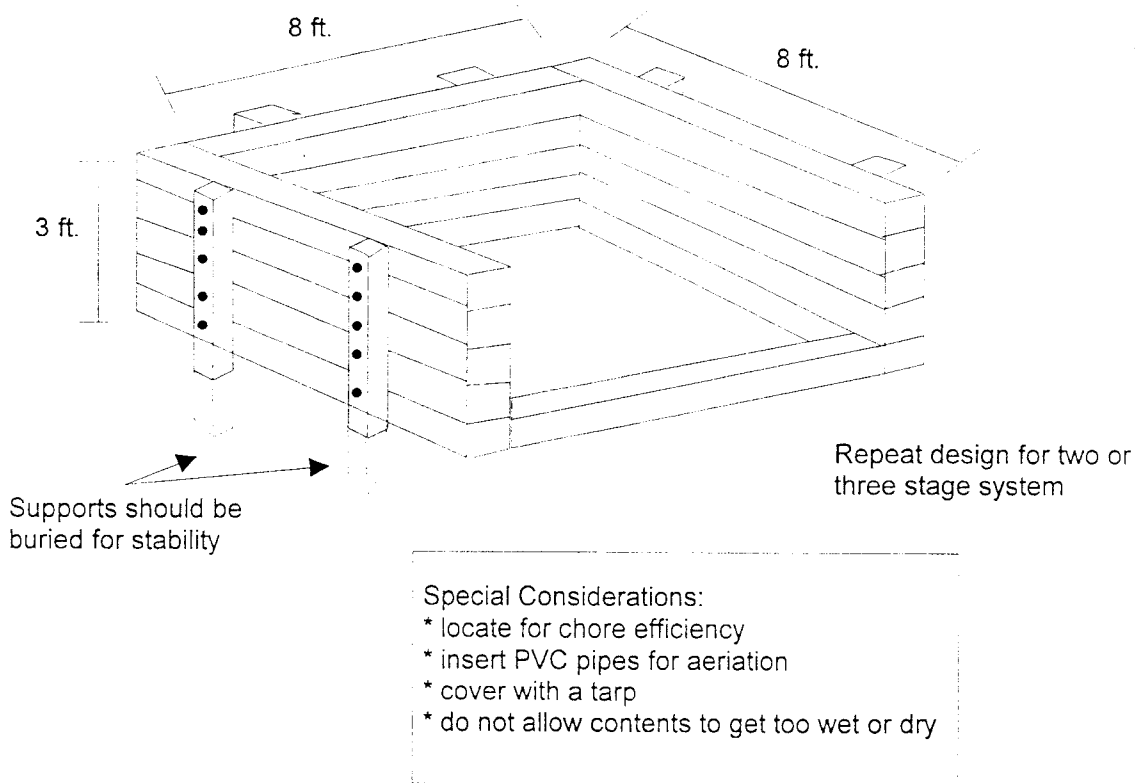
SUPPLIES

70 - 8' landscape timbers (or similar wood)
140 - 5/16" x 5 1/2" lag screws
plastic sheet or tarp to cover top

EQUIPMENT

drill & bit (1/4" - 5" long)
ratchet & socket set
power or hand saw
carpenter's level
post hole digger
tamping rod or similar tool

NOTE: number of timbers and lag screws will depend on the width of the timbers you purchase and how tall you wish to make your bins.



Compost bin design by Lyle Stolman, farm planner, King Conservation District, Renton , WA.
For technical assistance and farm plans contact the King Conservation District at 425-226-4867.

Alayne Blicke teaches environmentally sensitive horsekeeping practices through the King County Model Horse Farm Project and Horses for Clean Water. Each of these programs offer classes, workshops and farm tours. She also writes for regional as well as national horse publications. To receive an education schedule or for questions contact Alayne at 426-432-6116 or email her at ARBlicke@aol.com