

Manure Management

Horses today live close to those who care for them but also close to others who may not even like horses. Estimates indicate more than 90,000 horses in South Carolina, many in suburban areas. Some of the large training establishments were outside of town when they were built, but urban sprawl has put them in the midst of large populations.

Manure is produced when horses are present, and how we handle it can influence our relationships with our neighbors. Seldom is there sufficient crop land for owners to use the manure their horses produce. Consequently, this valuable by-product presents a disposal problem.

Each year, a 1,000 pound horse will generate eight to ten tons of manure, accumulating at the rate of two cubic feet per day, including bedding. Composition will vary considerably, depending on the type of bedding, the kind of feed and how the manure is stored. Typically, with bedding, a ton of fresh manure will have a nutrient composition of 13 pounds of nitrogen [as N], 5 pounds of phosphorous [as P_2O_5], and 13 pounds of potassium [as K_2O]. About



A structure such as this concrete block bin can store manure accumulated over many months. Ideally the storage should be covered to prevent groundwater and surface water contaminations.

half of these nutrients would be available for the first year's crop. The remainder would be available in successive years. Manure also contains valuable trace elements. In addition, manure improves soil texture and soil moisture holding capacity with the organic matter.

Decomposition of manure starts as soon as it is voided but can be slowed with proper storage and composting.

Manure storage needs to be dry and preferably level so that surface water cannot run through it. Manure should ideally be removed from stalls and spread daily. That is seldom feasible so it is allowed to accumulate until it can be disposed of or composted. By keeping the manure dry and piled, fly breeding can be kept to a minimum. Cleanliness throughout the barn area will decrease the potential for fly breeding.

Make adequate storage for anticipated manure - 144 square feet of confined space will hold the manure from one horse for a year. It may accumulate to 3-5 feet in depth. Large storage areas should be accessible to heavy machinery so that loading and unloading is convenient. Create a positive image by handling and storing the manure as inoffensively as possible. **Covering the storage with either a roof or plastic tarp will help prevent the contamination of both groundwater and surface water.**

Small exercise areas or paddocks will also need the manure removed to prevent surface water contamination and to assist with fly breeding control. Many of these areas are void of vegetation because of the tremendous amount of traffic they bear and erosion may be a problem. Design those areas to eliminate as many water problems as possible.

There are a number of ways to dispose of manure. Spreading daily on cropland is one but is not an available alternative for most horse owners. Spreading the manure on pastures is questionable until the manure has gone through enough composting to kill the internal parasite eggs and the weed seeds. Many gardeners want manure as a source of nutrients and organic matter. Composted manure is more salable and can even be bagged.

Composting is controlling the natural decay of organic matter in a moist, aerobic (oxygen-demanding) environment. Microorganisms break down the manure to create a valuable product called compost - a dark, crumbly, earthy-smelling form of decomposing organic matter. The composting process takes 30-90 days. It must be piled, kept moist and turned periodically. The composting process can become more sophisticated depending on the quantities and the desired product. For a more detailed discussion of composting, please read Clemson University Extension Information Leaflet 48 entitled "Home Composting."

Horse manure is a valuable by-product and with proper handling can be of little concern to your non-horsey neighbors.

- Develop a plan for storing and disposing of the manure so that it is a positive environmental influence rather than a negative one.
- Cultivate relationships with gardeners, landscapers and organic farmers who need and want the manure to add fertility to their soil.

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