

What to do with all the Waste?

Suggestions for simple composting and responsible removal of manure from your property.

by Edgar A. Ott, PhD

Nutrient management usually means relocating manure to areas that can utilize the nutrients to grow crops. Facilities that do not have adequate land to utilize the nutrients on site need to transfer the nutrients to other sites that have adequate space or to businesses that can market to consumers who need the nutrients for home gardening. Other appropriate end users may be grain and vegetable crop producers, hay producers, pasture land, forest land (planted pines), composting facilities and plant nurseries.

Fergus

Breeding farms with adequate land to utilize their nutrient output on their pastures and hay fields should develop plans for monitoring forage land nutrient utilization. The nutrient application rates will vary with soil type, natural soil phosphorus concentrations and the utilization of the forage. Hay land will utilize more nutrients than pasture land.

Although raw manure can be applied directly to hay fields, it is better to compost manure intended for pasture land to reduce parasite and pathogen load on the pasture.

In short, composting is a term that refers to controlling the natural decay of organic matter in a moist environment. During the process of composting, microorganisms break down the manure to create a valuable product called compost – a dark, crumbly, earthy-smelling form of decomposing organic matter.

Composted manure has less viable weed seeds, parasite eggs and pathogens. Composted manure also has the advantage that the particle size is smaller, thus making it easier to incorporate into the pasture without a major mulching effect. There are two procedures for composting horse farm wastes: anaerobic composting and aerobic composting.

Anaerobic Composting

Anaerobic composting basically involves piling the manure until it composts on its own. It requires very little input but it is quite slow, requiring six to 12 months, and even then might not be complete. It has the disadvantage of being vulnerable to leaching of nutrients and could produce unwanted flies and odors. Anaerobic composting is probably only satisfactory if the operation has a composting area that is remote from the farm operation and neighbors and is not vulnerable to washing or leaching of nutrients into state waters. After the composting is complete, the

material should be spread on pasture or crop land.

Aerobic Composting

Aerobic composting requires more input by the manager. The composting is usually done in a restricted area where the material can be aerated, and the moisture and nitrogen adjusted to optimize the conditions for composting. Aerobic composting will require six to eight weeks, depending upon the bedding material and the proportion of fecal material to bedding. Feces without bedding will compost quite rapidly. The more bedding mixed with the feces, the slower the process.

Moisture levels should be maintained at 50 to 60 percent. The carbon-to-nitrogen ratios need to average 20 - 30:1. Bedding materials with large particle size, such as straw, hay and wood bark, will benefit from grinding to reduce particle size. Wood shavings and sawdust should compost without grinding. The volume of the final compost should be reduced by 40 to 60 percent and the particle size reduced to the consistency of potting soil. This material is now suitable for direct application to pastures and other crops as the composting procedure will destroy most parasites, pathogens and weed seeds.

Conclusions

Nutrient management in the stable or horse farm is becoming an important responsibility for owners and managers. It is essential that we understand and develop programs to control nutrients discharged by our animals. Large facilities will be required to do this under the eye of regulatory agencies. Smaller operations will not be monitored unless they are caught polluting the environment, at which time they will be put under the same regulation as the larger facilities. It is important for the smaller facilities to develop a plan to keep themselves out of the regulatory vice. Know what your animals are discharging, plan to control and utilize those nutrients for plant pasture or crop production, or find a suitable third party that will assume that responsibility. Avoid overfeeding so you don't have to manage more nutrients than necessary.