

# Horse Environmental Awareness Program

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## Horses -- A Common Sense Approach

### The Horse Manager's Benefit

By managing horse pastures more effectively and incorporating the benefits of a sound waste management system, horse managers can increase forage production, lower production costs, improve aesthetics, and promote a healthier environment.

### Health and Safety

A well-managed grass pasture should meet the nutritional requirements of most horses. Mature horses will eat around 2% of their body weight in forage feed (dry matter basis) every day. Based on a Kentucky Blue grass/white clover pasture (medium production), this demand could be satisfied with 0.5 to 3 acres of pasture per animal (according to season, soil, and management). If supplementing with grain, horses should consume at least 1% of their body weight in hay or pasture. Horses benefit from grazing high quality pastures. Grazing the plants at their vegetative stage (before going to seed) will provide higher nutritional value forage; see table below. For cool season grasses, this stage could be maintained by grazing when the plants reach between 8-10 inches of height. Resting the pastures during the grazing season will allow the re-growth needed to graze them again. Moving the horses out of the field when the grass is 3-4 inches high will allow faster re-growth and will also help increase the life span of the stand and reduce overgrazing.

Average Composition of Pastures					
Green Pasture	Spring	Summer	Fall	Early Head	Full Head
Dry Matter, %	20.0	20.0	20.0	20.0	20.0
Crude Protein, %	19.0	19.0	20.0	14.9	11.0
Digestible Energy, Meal/lb.	1.19	1.16	1.27	1.06	.90
Calcium, %	.70	.70	.80	.66	.50
Phosphorus, %	.31	.31	.33	.27	.20

Source: Equine Feeding Management, Dept. Dairy and Animal Science, Penn State University

Grazing plants too short will interfere with the dry matter intake of the horse. It may also cause horses to ingest soil and become sickly. Having shorter plants will allow more weeds to invade the pastures, increasing the chance for consumption of toxic plants and may be engaging in a more costly, less environment-friendly weed control program.

### Consider Water Quality

Poorly managed, overgrazed pastures or exercise areas can also affect the horse's drinking water quality. Soil sediments, manure, fertilizers, and pesticides can all be moved during a heavy rainfall into surface and groundwater sources. Not only can these pollutants poison the horses, they also may affect the people who live downstream from the horse pasture.

Well managed pastures can provide a healthy diet and safe exercise areas for your horses. These benefits can be even greater by using a rotational grazing system. This system will consider the land capabilities, animal requirements, suitable grasses, and owner availability -- among other factors -- to accomplish your goals. This type of pasture management system will greatly increase forage quality and quantity, while improving the pasture's appearance and producing a healthier environment for horses and people.

### CTD Your Horse Manure

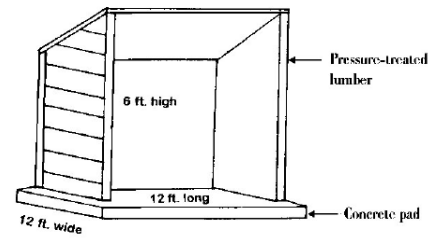
What does CTD mean? Contain, Treat, Dispose your horse manure with a common sense and responsible approach. What's in it for you? Healthier horses, cleaner stables, productive pastures, and cooperative neighbors.

Other benefits include protection of surface and ground water, including drinking water sources, avoiding lawsuits, and possibly earning some income.

## Contain

Two cubic feet per day, or 8-10 tons of manure and bedding annually; that's an estimate of what a 1,000 lb. horse can generate. Manure harbors more than 297 million fecal coliforms per day. A storage facility is the most efficient way to contain this large amount of manure and bedding.

A facility 12 ft. wide by 12 ft. long by 6 ft. high can treat a year's worth of manure. Place your facility at least 100 feet away from all water sources. Constructing a concrete floor will keep nutrients from leaking underneath and out the sides. A cover over the facility will allow you to control the moisture content and will aid in reducing runoff. Ideally, a sediment basin or grass filter strip will clean runoff so nutrients and sediments do not pollute surface and ground water sources.



Example: Manure Composting Facility

## Treat

Composted manure is clean, odorless, and has the consistence of potting soil. To get to this desirable state, the manure must be piled properly, kept moist (**not** wet), and aerated regularly. Stacking manure 3 ft. to 5 ft. high provides enough bulk to generate the heat necessary to compost the material. An internal temperature maintained between 135o and 160o will kill most pathogens, parasites, and weed seeds. High temperatures also eliminate insect and rodent infestations. Moisture should be maintained between 50% and 70%.

Thoroughly mix the manure three times per month to prevent mold, mildew, and odor.

## Dispose

Disposing in *the back forty* is convenient, but it may be illegal. Unmanaged manure can cause water quality degradation by spreading bacteria and leaching nutrients into nearby water sources.

Look for customers such as neighbors, lawn care companies, landscapers, farmers, gardeners, nurseries, and greenhouses. Find out if there are any restrictions -- for instance, mushroom growers will accept manure with straw bedding, but not with wood bedding (chips, sawdust). Compost can be used on your own pastures only if you practice good management techniques. Poor management may result in spreading infection and diseases.

If you plan to apply compost to cropland, pastures, gardens, nurseries, lawns, or greenhouses, test if for nutrient content before spreading. The nutrient content of manure is roughly equal to a 50 lb. bag of 12-4-8 commercial fertilizer, but actual content varies widely. Compost is very clean to handle, provides an excellent source of organic matter and supplemental nutrients, and significantly increases moisture holding capacity of soils. The productivity of sandy soils improves dramatically with composted manure applications.

## CTD Benefits Everyone

Responsibly managing your manure with the CTD approach promotes horse and human health, and improves your stable's image with customers and neighbors. But don't overlook the benefits of protecting drinking water sources, maintaining good neighbor relations, and securing a source of income.

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## References

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