



Managing Horse Stables and Barns for Environmental Efficiency

Equine Water Quality Education Series

Horse property barns and stables may contain large quantities of mud because of excessive traffic. Mud is more than a mess or nuisance. Winter and spring rains can cause mud and manure to runoff into nearby waterways. Nutrients and sediment in runoff are a source of nonpoint source pollution, which can degrade water quality. A small amount of nonpoint source pollution from a single property may not seriously impair water quality. However, small amounts of nutrients and pollutants multiplied by many properties can result in significant water quality problems. Nitrogen, phosphorus, organic matter and bacteria in runoff can pollute surface waters and decrease oxygen availability. Phosphorus and nitrogen reaching waterways can promote excessive algae growth. When the algae decays, oxygen is depleted that can kill fish and other aquatic life. Aquatic bacteria remove oxygen from the water when decomposing the organic matter in manure. Louisiana horse owners can reduce the impact of their facilities on local waterways and groundwater by adopting management practices that minimize the potential for nonpoint source water pollution.

Building Locations

Before building equine facilities, survey the drainage pattern and soil types on your land. The time initially spent on locating your facilities can go a long way in reducing potential problems with mud and runoff. Information about the soil types present on your property can be found at your local LSU AgCenter extension office.

Avoid placing buildings in drainage swales and areas with poor soil drainage. Locate buildings and shelters on higher ground with well-drained soils. Before siting your structures locate all areas containing streams, ponds and wetlands. Use care to avoid placing structures close to these areas. Make sure to check with your local construction officials, if applicable, to de-

termine setback requirements for livestock and equine structures. If possible the area around the structure should be graded to divert runoff away from the facility.

Stormwater Management

Rainfall can generate significant runoff around your facility that can produce mud. By implementing some simple stormwater management practices you can reduce the potential for nonpoint source pollution and negative water quality impacts from your facility.

Install gutters, down spouts and splash blocks on all barns and shelters. A significant amount of roof runoff can be diverted away from paddocks, exercise lots and stall areas through the use of a properly designed and maintained drainage system. This greatly reduces the amount of mud and water around barns and buildings and will prolong the life of foundations and wood posts. Also, the potential for manure to be washed away will be reduced and clean rainwater will be prevented from becoming contaminated. Contact your local Conservation District or Natural Resources Conservation Service (NRCS) office (<http://www.la.nrcs.usda.gov/>) for assistance regarding the design of stormwater drainage systems.

Sacrifice Areas

Consider creating a sacrifice area. A sacrifice area is a small enclosure or paddock area that serves as your horse's outdoor living space. It is called a sacrifice area because you are giving up that parcel of land as a pasture area for the benefit of the remaining pasture area. The sacrifice area should be used in case of saturated soil conditions or if pastures become overgrazed. When land area is limited, a sacrifice area can be of value during the winter months. Pastures cannot survive continuous grazing and trampling during non-growing seasons. The use of a sacrifice area can result in increased pasture productivity that may result in reduced feed costs.

Sacrifice areas also can be used as part of your overall pasture management plan to control grazing or to allow for maintenance. Mowing, clipping, dragging and fertilizing can be easier when horses can be removed from pasture and placed in the sacrifice area. It is particularly important to locate sacrifice areas on better-drained soils away from waterways and wetlands.

Sacrifice areas will be subjected to significant wear and tear. As a result, vegetation will likely be sparse to nonexistent. Consider locating your sacrifice area so that vegetated areas surround it. Vegetated areas serve as a filtration system to reduce sediment and nutrients washed from the sacrifice area. The sacrifice area should also be located in a place that is convenient to your barn and manure storage area.

A sacrifice area also will allow for better control of manure. Because manure is located within a confined area it can be collected and composted. This will help prevent runoff from being polluted from manure. An added benefit is that it will help to reduce flies and parasites. Composted manure can be applied to pastures as a source of nutrients for crop growth.

Footing can be an important issue in sacrifice areas. Because of their high use, sacrifice areas can be prone to being unvegetated, muddy areas. Wood chips, gravel and sand may be some options for use as footing materials. Remember that use of these materials may not be effective or desired in all situations. In some cases, consultation with your Veterinarian or LSU AgCenter extension agent may be warranted. Make sure the footing materials you choose will not cause any harm to your animals' health.

The size of a sacrifice area can vary greatly. The amount of land available and your horse's needs are important in determining the area needed. Some horse owners prefer to have one sacrifice area per horse. Although others prefer to have an area large enough to accommodate several horses, horses in sacrifice areas will still need exercise. An important factor therefore is to have an area sufficiently large enough so that exercise can be accommodated. A sturdy fence should be used to enclose the area.

Pasture Management

A properly maintained and managed pasture is essential to reducing mud and soil erosion to maintain water quality. When first establishing a pasture, the se-

lection of pasture species should require some thought. Remember to choose species that will meet your needs and the field conditions where planted.

A healthy and vigorous pasture ensures good soil cover and can reduce runoff. Overgrazing is the most common problem for many horse owners. Closely grazed areas promote runoff and soil erosion. If possible, consider dividing larger pastures into several smaller units for rotational grazing. Horses should be removed from a pasture area when the forage is consumed to 1 to 2 inches. When the horses are removed, clip, fertilize and spread manure this allows the section of pasture to recover.

Reference

Equine Barnyard Management, Rutgers University, 2001. Fact Sheet 616 by W. Banka and J. Singer.

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