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Fact sheet

Equine Barnyard Management

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Introduction

Horse property barnyards 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 non-point source pollution, which can degrade water quality. A small amount of non-point 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 which can kill fish and other aquatic life. Aquatic bacteria remove oxygen from the water when decomposing the organic matter in manure. Property owners can reduce the impact of horse facilities on local waterways and groundwater by adopting management practices that minimize the potential for non-point 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 in your County Soil Survey Report. Avoid placing buildings in drainage swales and areas with poor soil drainage. Locate buildings and shelters on higher topographic areas 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 official to determine 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 non-point 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 animal waste to be washed away will be reduced and clean rainwater will be prevented from becoming contaminated with animal waste. Contact your local Conservation District or NRCS office (*http://www.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 can also be used as part of your overall pasture management plan to control grazing or to allow for maintenance. Maintenance activities such as mowing, clipping, dragging, and fertilizing can be more easily conducted 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 non-existent. 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 will also 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 can be used as footing materials. Remember that use of these materials may not be effective in all situations.

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. While 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 selection of pasture species should require some thought. Remember to choose species that will meet your needs and the field conditions where planted. For assistance in species selection refer to FS103 "Horse Pasture Management - Species Selection." A healthy and vigorous pasture ensures good soil cover and 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 2 to 3 inches. When the horses are removed, clip, fertilize, spread manure and allows the section of pasture to recover.

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