



FACT SHEET

Department of Animal Science, University of Connecticut

Effective Horse Management - Second in the Best Practices Series

Pasture: Planning, Seeding and Sacrifice Areas

By Dr. Jenifer Nadeau, Equine Extension Specialist
University of Connecticut

Have you ever heard the expression “Failing to prepare, we prepare to fail?” No where is this more true than when it comes to pasture. It is important to prepare prior to designing a pasture by considering the use of the pasture, land resources available, seeding including what to seed, and design and location of sacrifice areas. A sacrifice lot will help prevent overconditioned horses by reducing pasture intake as well as protecting land resources.

Planning

In New England there is often restricted land space. At high stocking density (high number of horses kept on land), pasture supply will not meet the horse’s needs. The guidelines that follow are to provide horses with enough pasture to provide 100% of their nutrition. Horses that weigh 1,000-2,000 lbs need a minimum of 1.75-2 acres for a mare and foal, 1.5 –2 acres for yearlings and mature horses, and 0.5-1 acre for weanlings. With less acreage, pasture will be used mainly for exercise since only a minimal amount of feed will be supplied.

In planning your pasture consider animal needs and restrictions:

- 1) the total number of horses that will utilize the pasture
- 2) proper grass height at which to begin grazing (this is usually about 6-8 inches)
- 3) the necessity of grouping horses for turnout periods and size of each group
- 4) the desired length of turnout periods

Next consider land resources available. Are you lacking sufficient acreage, or are there too many acres of pasture for the animals to keep it adequately grazed? Think about the grass needs:

- 1) is there enough leaf area to intercept sunlight for photosynthesis?
- 2) are rest periods long enough following grazing to allow regrowth of leaves and to maintain a healthy root system?
- 3) is proper soil pH and fertility available to increase grass vigor and reduce weed competition?
- 4) is grass protected from hooves when soil is wet to prevent the development of holes and erosion?

When designing your pasture, consider putting lanes on high, dry ground. You will probably need to do maintenance and improvement on muddy, wet areas. Remove any organic matter (i.e. old hay or manure) which helps to form mud. Put south facing slopes in one paddock and north facing slopes in another paddock. South facing pasture often will grow first in the spring providing early spring grazing. Put slow growing areas in one paddock, fast growing areas in another to help provide continuous grazing.

Seeding

Seed in early April or mid August, September 15 at the latest. August seedings are usually ideal because the soil is dry enough to prepare a firm, well-graded seedbed and seeds germinate quickly in warm temperatures. Root development is favored due to slower top growth due to cool weather. Weed competition is at a minimum and moisture is ample as fall rains become more prevalent. Additionally you receive early use of pasture or a full hay production season next year.

One of the better pasture mixtures recommended for Connecticut is 10lb Kentucky bluegrass, 6 lb orchardgrass and 1 lb ladino clover per acre. Test the soil prior to planting and fertilize according to seeding recommendations. Fertilize before rain. Do not graze the new seeding until grass is 6 to 8 inches high. It is best to wait 8 months to a year to let pastures full establish. Do not graze below 4 inches during the first year of establishment.

Kentucky bluegrass has high animal acceptance, grows well in spring and fall, is cold tolerant and is a low growing sod forming grass that withstands overgrazing. However, it is a low yielding grass species. Orchardgrass is a desirable bunch grass. It is the highest yielding species of grass in this area, establishes quickly in the spring, and recovers quickly after grazing or harvest. It produces early spring growth, and is more drought and heat tolerant in summer than timothy. Ladino clover is a pasture legume. Legumes enrich the diet, improve summer pasture production during periods of midsummer heat and drought, and provide fixed nitrogen to fertilize pasture grasses. Clover may cause horses to slobber in drought periods, but this is not a serious problem and removing horses from the pasture will stop the slobbers. Ladino clover requires a soil pH of 6.0-7.0 for best production/persistence. Some people prefer to leave clover out of the mixture since it may cause slobbering and may take over the pasture when grass is growing poorly due to drought.

Other grass species can be used. The grass species of choice is dependent on soil type, slope, pH, soil texture, and moisture levels. Consult your agronomy guide for different seeding mixtures. Timothy lacks drought resistance and on very wet soil has a shorter life and does not tolerate heavy grazing. It tolerates shade poorly, yields less than bromegrass or orchardgrass in summer heat and can easily be overgrazed. Rhode Island bent grass is a "native" grass to this area (it is not actually native, it came originally from Europe, Newfoundland and the Gaspe Peninsula). It is of low quality, and has few leaves. It is adapted to acid soils and tolerates wet

soil conditions and is also drought resistant. Reed canarygrass is a coarse, tall growing species. It doesn't mix well with legumes because it grows too tall and shades them. It tolerates overgrazing and drought conditions. Meadow and tall fescue are more tolerant than orchardgrass or timothy. They are also traffic tolerant due to low palatability. Fescue is best in high traffic areas because it can tolerate heavy use. If you do decide to get tall fescue and meadow fescue, make sure you get the endophyte free variety of the grass if you are a breeding facility. The endophyte fungus causes a thickened amniotic membrane around the foal, poor milk production and other problems in foaling mares. It can also reinfect grasses. Ryegrass is a grass that may cause ryegrass staggers which leads to incoordination, tremors and a sawhorse stance. Sorghum, sudangrass, sorghum sudan hybrids and Johnsongrass should not be used for horse pasture. They can cause cystitis characterized by paralysis and urinary disorders.

Sacrifice Area

The cutting and compacting action of hooves can easily damage wet pastures. During a hot, dry summer, grass growth may come to a complete halt, and horses may chew plants right down to the soil surface. Having a sacrifice area at your facility will allow horses to be turned out during these sensitive times without wreaking havoc on pasture. A selected area is sacrificed from the grazing system and is used to confine animals in order to protect pastures from over-use at critical times like during winter months, mud season, and times of slow pasture plant regrowth. A sacrifice area is also a good tool for managers who must limit the amount of grass their animals get, and for those who don't have enough acreage to support long hours of grazing.

The benefits of a well-planned sacrifice area include: hoof friendly surface for better horse health, reduction of mud and ice, ease of manure removal/management, improved aesthetics, reduction of manure- or soil-laden runoff to water bodies and reduction of fly-breeding habitat.

- **Minimal size** is one feature of a well-planned sacrifice area. Reducing the amount of bare soil on your equine facility will help you protect the environment and decrease distance for manure removal. Create an area that is no bigger than that you require after considering the space needs for your particular herd, groups, or individual, and the amount of pasture and riding exercise that supplements their turnout time. Keep in mind that there are limits to a particular property's ability to support animals. In some cases this challenge may be answered by drastically reducing turnout time and space, combined with meticulous manure management and disposal.
- **A good surface** is another feature of a well-planned sacrifice area. You may need to remove as much of the fine-textured "topsoil" as is practical, and replace with 8-12 inches of well-draining gravel. Compacting the gravel well with machinery will help to lock the stones in place. Gravel should have an assortment of particle sizes from sands and fines up to stones of one inch in diameter. Larger stone size may be detrimental to hooves, and even a base containing 1" stone may need to be covered to prevent bruising. You may wish to top with stone dust or sand for a hoof-friendly footing. A good surface is a key part of any mud-reduction plan. Some areas may require subsurface drainage where seasonal high water tables exist. Spots that are particularly troublesome due to heavy traffic or wetness may benefit from the use of geotextile covered with 8+ inches of gravel base and your choice of surface material.

- **Location** is another important feature of a well-planned sacrifice area. The most convenient areas are generally near the barn. However, it is most important that the sacrifice area be located away from wells, wetlands and water bodies. Strive for a minimum of 200 feet separating distance between a sacrifice area and a water body. Slopes of 2-4% will reduce ponding of water, and will have less erosion than steeper slopes. A slope of 2% means that over a distance of 100 feet, the elevation will change by 2 feet. Grade the area to drain away from barns.
- **Daily manure removal** is the final important feature of a well-planned sacrifice area. Regular removal of manure from the lot surface will result in less polluted runoff leaving the site, and will help to prevent the incidence of mud. Left in place, organic matter in the form of manure or wasted feed and forage will get churned into the surface, increasing the water holding capacity of your lot, which means more mud!

Careful consideration and design of your pasture will enable you to more effectively utilize the land resources you have available. Seeding grass species most suited to your area and having a well-planned sacrifice area will maximize your pasture production. By following these guidelines, you should be able to maintain healthy horses on healthy pastures.

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