

Grazing Strategies for Horse Owners

Bob Coleman Ph.D. PAS
Department of Animal Sciences
University of Kentucky
Lexington, Kentucky

What should your pasture area provide for the horses in your care? Is it an area that provides for a portion of their nutritional need? Is it an exercise area? Or does it provide both nutrients and exercise? For most horse owners, the ideal situation would be that the areas of pasture do in fact provide exercise and a significant portion of nutrient needs of the horse. However, this does not just happen, it takes time and effort to manage the pasture and the horses on it.

As a horse owner, you need to decide on what the pasture will truly provide. The exercise needs of your horses can be met by an area that is well drained and may be 400-1000 sq feet in size for a mature horse. Keeping it from being nothing but mud may be a challenge, but remember, it is only for exercise.

If the pasture will serve as a major feed source, other factors need to be considered and how you manage the area becomes important. Many classes of horses can receive a significant portion of their nutritional needs from well managed pastures. Productive pastures during the growing season can easily replace the hay fed and decrease the amount concentrate fed to mature horses. Table 1 shows how pasture can replace supplemental feed for a mature horse at maintenance. It is important to note that high quality pasture as found in the spring will provide excess nutrients, particularly energy. If the intake of this pasture is not controlled, horse owners may have problems with overweight horses, and there is the potential for a horse to founder on the lush pasture. In general, only hard working, young growing horses or lactating mares may require additional sources of nutrients the pasture cannot provide.

Table 1. The Effect of Pasture Quality on the Supplement Feed Requirements for a Mature Horse (500 kg) at Maintenance.

Pasture Quality	Percentage Nutrient Supplied	Supplemental Feed Required
Excellent	over 150%	Salt & Minerals
Very Good	over 100%	Salt & Minerals
Good	70 - 100%	7 - 10 lbs Hay plus Salt & Minerals
Fair	50% - less	10 - 14 lbs Hay plus Salt & Minerals
Poor (dry lot)	0	20 - 25 lbs Hay plus Salt & Minerals

As a horse owner, you need to consider the grazing behaviour of the horse. The horse evolved as a grazing animal or, in other words, horses were born to eat grass. As part of this evolution, horses are selective in the plant material they graze. This selection has led to the term

“spot grazers” which can indicate selecting spots within the pasture to graze or selecting certain parts of the plant when grazing. Horses will select the young immature material and continually graze it creating a lawn-like area in the pasture while the more mature, less preferred plant material grows into the rough area of the pasture. The continued grazing in the lawn area will result in reduced plant vigor and the loss of the desired plant material. What you will see are areas of bare ground or weeds in those over grazed areas.

Areas where manure is left is also avoided by the horse despite what appears to be actively growing plant material.

Grazing can take up a large portion of a horse’s day, but may be modified by the availability of forage. Researchers in North Carolina reported that horses maintained on pasture spent up to 70% of the day grazing. Although grazing occurred around the clock, time of day had an effect on the horse’s grazing patterns. Horses that are only out at night spend about the same percentage of their time on pasture grazing, when compared to being on pasture for 24 hrs. While the horses on pasture for 12 hours during the day spent a greater percentage of the time on pasture grazing (see Table 2). This means that if you need to limit intake of pasture, you may be better off putting the horses out at night, not during the day.

Table 2. Grazing Behavior of Mature Horses on Pasture

Time on Pasture	Hours Spent Grazing	% of Available Time
All day (24 hr)	17.0	72
Day time only (12 hr)	10.8	90
Night time only (12 hr)	9.2	76

Pond et al 1995

Depending on where you live and what the environmental conditions are like, pasture may be available for 5-6 months of the year. Making the most of the available pasture requires management. It is not the scope of this paper to cover all the agronomic practices that need to be employed to ensure you have a good stand of forage in your pasture. Horse owners need to consult with knowledgeable people to select the most appropriate mix of grasses and legumes for their farm, plus get advise on fertilization and weed control to ensure a healthy vigorous stand of forage in their pastures. It is important to use agronomic practices that are developed for the local conditions.

What strategies can horse owners use to maximize the use of their available pastures? Many of the strategies to follow will be affected by the number of horses on your farm and the available pasture. Some of them will not work in all situations or may require additional expenditures in equipment or fencing that may not be practical for your situation.

How Much Pasture do you Need?

This is a difficult question to provide an exact answer for. The soil quality, forage type, and environmental conditions will affect the amount forage produced on your pastures. That being said, it is generally suggested the 2-4 acres are required for a mature adult horse. Less can be used, but great levels of management will be required. If not implemented, the result will be

horse owners using dry lots for exercise and feeding more hay because they have overworked the pasture.

Continuous vs. Rotational Grazing

Continuous grazing is simply horses kept on one pasture and allowed to graze across the entire area. It is a system that has reduced costs associated with fencing, watering systems and does not require as much management. However, the effective use of the forage is greatly reduced. Horses will selectively graze the areas of regrowth because that is preferred plant material. This grazing pattern will gradually weaken the plants until they no longer survive, leaving areas of mature plant material that won't be grazed. This mature plant material may eventually be grazed when there is nothing else in the pasture.

Rotational grazing is an easy and effective strategy to maximize the available pasture. As the name implies, horses are rotated through pasture areas. This management practice provides pastures a period of rest and allows for regrowth to occur and plant resources to be replenished. Most rotation systems will generally allow for 21-28 days of rest between grazing periods. The length of time on each pasture will be determined by the number of horses and the forage available. In general, horses can be put on the pasture when there is 6-8" of available forage and removed when the forage has been grazed down to 3". Some grass species such as blue grass can tolerate grazing to 2" in height. Removing the horses when there is still a reasonable amount of forage left (3") will allow for faster regrowth. It is important to remember that horses should be removed and the pasture rested when it has been grazed down to the 3" in height. Overgrazing will reduce the rate of regrowth and require more time for the pasture to recover. It is the height of the grass, not the calendar, that ultimately dictates when horses need to be moved.

The use of rotational grazing has been noted to extend the available grazing 12 to 21 days. If you need to replace the feed supplied by 21 days of pasture with purchased hay, your feed costs will be increased significantly. Therefore, a bit of work on your part can reduce feed costs.

A simple rotational system could be dividing your available pasture in half so that there is some opportunity to rest the pasture. If your available pasture will allow more small pastures, grazing an area for 10-14 days followed by 21-28 days of rest can work well. Using electric fence to divide pastures is effective. Consider how you will provide water to the horses on pastures when dividing up the available area.

Mowing

Despite your best efforts, not all plant material will be consumed equally. In order to keep pastures uniform, consider mowing the pasture to a height of 4" after the horses have been removed. This strategy is more effective when combined with rotational grazing, but could be implemented as well if your horses are continuously grazing a larger pasture. Keeping the pastures at a similar stage of maturity and not allowing the plants to mature should help reduce some of the spot grazing. Horses will have parts of the pasture they prefer to graze and possibly some areas that will go untouched.

Manure Removal

It was mentioned previously that horses do not graze close to manure piles. In order to reduce this effect, pastures should be harrowed to scatter the manure piles. A concern with this is the potential to spread parasites across the pasture. The ideal time to spread manure is when it is hot and dry as these conditions have a negative impact on the parasites. Scattering the manure helps to break down the material and provide some recycling of nutrients across the pasture. Used with a good deworming program, harrowing during the rest period for the pasture should reduce your parasite concerns.

Sacrifice Areas

Horses trampling on a pasture can remove a significant amount of plant material. When conditions are wet or extremely dry, it may be necessary to remove horses from the pasture as a means of protecting the pasture. If this is not feasible, then you may need to sacrifice a part of the pasture knowing that it is going to be turned into a dry lot. If you can fence off this area and then reseed once conditions improve, it may save a significant portion of the good pasture you have available.

Depending on your facilities, moving horses to an exercise area separate from the pasture is worth considering. By using the exercise area, the pasture is protected. This area could also be used when you are applying fertilizer or spraying for weeds. It is best to remove the horses from the pasture for 7-10 days especially when applying most herbicides.

High Traffic Areas

There will be areas in the pasture that receive a great deal of traffic. The resulting hoof action generally removes most desirable plant material. Areas around water, gates, and loafing areas under shade generally have little, if any, grass there. Horse owners would be better off to use geotextile fabric and rock or other porous material on these areas than worrying about the grass. The use of the rock will reduce mud in this area and may help with the control of weeds. There does not appear to be a grass (at this time) that can withstand heavy horse traffic.

Extending the Grazing Season

Horse owners with available land can consider stock piling pasture forage for use in late fall and early winter. To do this, a pasture needs to be rested in late summer and possibly fertilized to stimulate plant growth. Care needs to be exercised with late applications of fertilizers as a sudden frost on actively growing grass could cause elevated nutrient levels in the forage. Consult the extension service in your area for advice on fertilizer applications.

The pasture that has rested in early fall then can be used until the snow cover makes it difficult for the horses to obtain enough feed.

Another alternative is to use a grain crop, such as fall rye or winter wheat to graze your mature horses on. For this to be a viable option, horse owners would require additional acres, plus the needed machinery to seed the cereals.

For most horse owners on small acreage, these two options are not practical, but for those with larger acreage or the availability of crop land in close proximity of their farm, it may be an

option. Of major concern with these alternatives is a suitable water source with the cold fall temperatures.

Supplemental Feed

When available pasture forage cannot provide the needed nutrients for your horses, you will need to provide supplemental feed. For those feeding hay to horses on pasture, you need to use a suitable hay feeder. Research done by the Horse Industry Branch in the late 80's reported feed waste values of at least 20% when hay was fed on the ground. In addition to this loss of feed, feeding on the ground can create an area of mud. The mat of hay and mud will remove grass underneath, allowing weeds an opportunity to take over that part of the pasture.

Managing pastures effectively can provide nutrients to your horses, give them free exercise and be environmentally friendly. For most horse owners, the land base is fixed and horse numbers may be fairly stable so the option to maximize pasture use is by managing what is available. It is work and will require regular inputs of time and other resources, but these inputs will pay off.