

# How to Make Rotational Grazing Work on Your Horse Farm

**Rotational grazing can provide more feed for your horses than continuous grazing- but only if you know how to do it right.**

Most farm managers have heard the term ‘rotational grazing’ and have a vague idea of what it means. When used correctly, rotational grazing is a management practice that results in healthy, thick stands of forage to provide horses with a significant source of nutrition. High-quality pasture can meet or exceed the protein and energy requirements of horses with low calorie needs. Rotational grazing requires a bit more oversight than continuous grazing, but the payoff is increased feed value for horses and productive pastures that need less frequent renovation. It is also a good way to manage moderately stocked farms for maximum productivity.

In general, you need 2 to 4 acres per horse if you want them to be out all the time and not overgraze a pasture. Most farm owners don’t have this much space, but with more intensive grazing management, you can maintain horses on fewer acres and still have great pastures. Of course, there is a limit to the number of horses the land can sustain, even using rotational grazing.



Rotational Grazing, photo by Carey Williams

## Continuous Grazing and Its Drawbacks

Most horse farms practice continuous grazing, in which pastures are occupied by horses daily. It might be one group of horses outside all day, or it could be that multiple groups of horses go out in shifts. The important factor is that the pastures are not “rested,” or left empty, for more than a portion of the day or night. While this is usually the easiest way to manage turnout, it can be very hard on the forage plants and often results in overgrazed pastures on farms with less than 2 to 4 acres per horse.

Horses have a tendency to graze their favorite grass species close to the ground, then return to graze the regrowth as soon as it appears. This is called overgrazing, and it is very damaging to grass plants. First, it removes so much of the leaf area that the plant can’t capture sunlight to make energy for regrowth. The plant must then use stored energy to regrow, and with repeated close grazing, the energy stores run out and the plant dies.

This is how pastures lose desirable forage species like orchardgrass, smooth brome, and timothy. Horses overgraze these palatable forages until the plants die, leaving less preferred species. As they die, the bare ground left behind allows opportunistic weeds to germinate and take over. You can overseed again and again, but the grazing management won’t allow desired forages to survive except in ungrazed “roughs”.

## Rotational Grazing

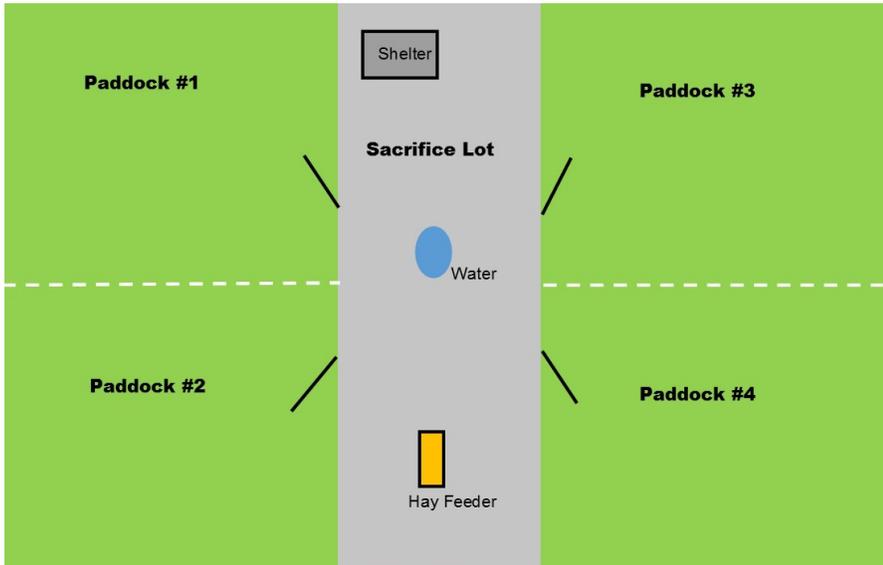
Farm managers can avoid overgrazing pastures by managing their horses’ grazing using a rotational system. In a nutshell, rotational grazing involves moving a group of horses between several paddocks on a regular basis. The forage is grazed once and then rested to regrow. The absolute most important part of this system is the grass’s recovery period while horses are on other paddocks. This means that paddocks must be left empty for a few weeks at a time.

Every farm manager will figure out the right schedule for their rotation, but in general, horses should be in a paddock for no longer than 7 days, because that is how long it takes for forage regrowth to begin after grazing.



## The Ideal Rotational Grazing System

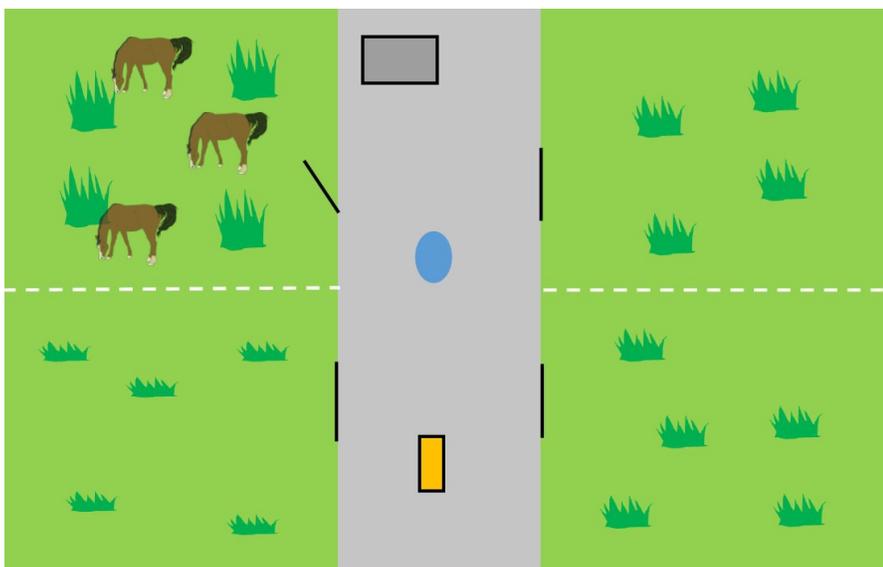
The ideal system has a minimum of four paddocks connected by gates to one sacrifice lot (AKA dry lot, stress lot, animal concentration area, etc). The sacrifice lot contains a shelter and feeder/water source so that each paddock doesn't need to have its own; horses have access to the sacrifice lot at all times no matter which paddock they are grazing. The size of each paddock depends on how many horses are in the group and how frequently the manager wants to rotate.



An ideal rotational grazing system has several grazing paddocks attached to a sacrifice lot. Illustration by Laura Kenny.

To use this system, the manager starts by walking each paddock and identifying one that is ready to be grazed. It should have at least 6-8" of forage before grazing. The manager opens the gate to Paddock #1 and closes the gates to all others. The horses graze until they have removed about 50% of the forage, so 3-4" of forage should remain. This is called the "Take Half, Leave Half" rule. The grazing period should take no longer than 7 days, and forage should not be grazed any lower than 3". The manager then opens the gate to Paddock #2 (or whichever one is ready to be grazed) and closes the gate to Paddock #1. This continues until horses have grazed all the paddocks.

If the horses grazed each paddock for 7 days, then paddocks will get 3 weeks of rest, which should be enough time for forage to regrow to 6-8" in the springtime. However, in hot Pennsylvania summers, cool-season grass growth slows and recovery might take as long as 6-8 weeks. It is important to decide when to graze and move horses based on forage height, not by sticking to a strict schedule.



In this rotational grazing system, the horses have access to the paddock with the tallest forage. They just finished grazing the bottom left paddock, and will graze the top right paddock next. Illustration by Laura Kenny.

If no paddocks have recovered by the time they have all been grazed, then the horses should be confined to the sacrifice lot and fed hay and/or grain as needed until a paddock is ready to be grazed. Remember to gradually reacclimatize your horses to pasture when the paddock is ready to avoid colic or laminitis.

Having empty fields for a few weeks makes it easier to take care of some other routine pasture maintenance. For instance, if you need to apply fertilizer or herbicide, you can apply them right after you move horses and rest easy knowing the paddock will be empty for several weeks. It also works well with a regular mowing schedule: mow the pasture to a uniform height right after you move horses so that all forage begins its recovery at the same height.

## Common Issues and Solutions

---

### **Fencing is really expensive, I can't afford rotational grazing.**

As long as you have sturdy perimeter fencing around your system, you can subdivide the paddocks using temporary electric fencing. They can be powered by solar chargers. This cuts down on cost and also allows you to move the fence lines if needed.



This farm used electric rope to divide a larger pasture into strips. You can see that the paddock to the left has had more time to rest than the paddock in the middle. Photo by Danielle Smarsh.

### **It has been 7 days and my horses haven't grazed the forage halfway yet.**

Your paddocks are probably too large. If you divided them with temporary fencing, you can move the fence lines to make them smaller. You could also try adding a horse to the group to increase the grazing pressure.

### **My horses aren't grazing uniformly, some areas are tall and others are low. How do I know when to rotate?**

This is normal grazing behavior for horses, but rotational grazing aims to reduce this pattern and get horses to graze more uniformly. Walk your pasture with a yardstick to get an idea of the average height of the forage. Mow after moving horses. Make sure low areas have grown to the minimum grazing height before grazing again. Your pastures may be too large.

### **I don't want to change my horses' diet suddenly if I confine them to the sacrifice lot.**

Some people keep "summer paddocks" available for this purpose: extra paddocks to be grazed when other paddocks are recovering. The extra paddocks will grow very tall if left unmanaged, so they might need to be mowed a few times before they are needed to keep the weeds down and the grass at a reasonable height. If you have the equipment, you could even make hay off this paddock in the spring to take advantage of the rapid forage growth.

### **I only have 1 acre of pasture and don't have room for all these paddocks.**

If you have room to split your 1 acre in half and rotate between the 2 halves, that is better than nothing!



This small farm owner split a small acreage into 3 sections and a sacrifice lot for 3 horses and manages to keep nice vegetation in each paddock. There is a large sacrifice lot in the foreground because the owner realizes that the paddocks won't always have enough forage to graze and wants the horses to have turnout. Photo by Sarah Ralston.

**I have several horses that don't get along, I could never put them all in the same group for turnout!**

You can create more than one rotational system on the same farm. You might divide half the pastureland into a system for the geldings, and the other half into a system for the mares. You can put in as many different rotational systems as you need!



Image via Google Maps and modified by Laura Kenny.

As an example, the farm in the map above has two totally separate rotational systems. One is in green and one is in yellow.

## My sheds aren't in a good location to put a central sacrifice lot.

There are endless possibilities for how to design a rotational grazing system. You can keep the sacrifice lot close to the barn and use laneways to access farther paddocks. Some people don't set up a fully connected system, and instead graze individual pastures one at a time.

The map above shows two examples of rotational grazing setups. The yellow system on the top has a sacrifice lot in the middle of the pasture area and adjacent to the driveway, and gates allow access to each paddock. The green one underneath the driveway has a sacrifice lot located fairly far from the paddocks (on the right), so a laneway was installed which allows access to one paddock at a time.

## Conclusion

---

Rotational grazing is a grazing management system used by many other livestock managers, and it can meet the needs of horse farm managers as well. No matter how you lay out your fields, the key is finding a way to give paddocks enough recovery time for forage to regrow.

If your pastures are in poor shape, it will be helpful to renovate by soil testing, liming, fertilizing, reseeding, etc. However, the most important question to ask is, "How did they get in poor shape to begin with?" If the pastures are overgrazed, and you renovate them but don't stop overgrazing, they will inevitably look the same in a short amount of time. Grazing management is crucial to maintaining lush, productive pastures that provide nutrition for your horses and benefit the environment by reducing erosion and filtering water. Rotational grazing is an effective way to take better care of pastures.

## Authors

---

### Laura Kenny

Extension Educator, Equine

[lbk8@psu.edu](mailto:lbk8@psu.edu)

610-489-4315

---

## extension.psu.edu

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

Where trade names appear, no discrimination is intended, and no endorsement by Penn State Extension is implied.

**This publication is available in alternative media on request.**

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability or protected veteran status.

© The Pennsylvania State University 2019

Code: ART-5454