

# Healthy Pastures, Happy Horses

The secret to lush, nutrient-rich fields: preventing overgrazing

Use temporary fencing to subdivide your fields and rotate horses through those sections. Plants can then regrow between grazing periods.



AMY K. DRAGOO

**P**acefully grazing horses might look innocuous enough, but their mincing hooves and grasping teeth can trample and tear up pasture grasses, causing serious damage. Whether it be a single mellow horse or a rollicking herd, equids graze their favorite delectable plants down to the ground. Known as spot-grazing, this type of behavior can be so intense and extensive that large sections of pasture get completely destroyed by horses grazing it too short and too often over an extended period. This constant attack disrupts grasses' ability to photosynthesize (convert sunlight to energy for growth) and produce leaves, forcing plants to draw energy stores from their roots. Eventually, the plants become depleted to the point they cannot survive.

Overgrazing, one of the most common threats to pasture and plant health,

happens all too often on horse farms. Simply removing 60% or more of a single plant's leaf area will halt most root growth for several days and, over time, plants become stressed and lose vigor. Let's take a look at the signs of and solutions to overgrazed pastures.

## How do I know if my horses are overgrazing their pasture?

As selective grazers, horses gravitate toward the sweeter, tastier plants while leaving the less delectable ones alone, says Dee M. Vanderburg, state grazing lands specialist with the USDA Natural Resources Conservation Service, in Moberly, Missouri. If you look out over the pasture from afar, it might appear as though there's plenty of grass available for the grazing. Upon closer inspection, however, this might not be the case.

Jimmy Henning, PhD, extension professor in the University of Kentucky's (UK) Department of Plant and Soil Sciences, in Lexington, recommends walking your pasture and looking for these key signs of overgrazing:

- Large bare spots where only dirt can be seen;
- Slow regrowth after a period of grazing;
- Influx of weeds and nonnative invasive plants;
- Excessive or muddy runoff during rain, indicating soil erosion.

The horses themselves might tip you off. If you begin to notice weight loss or reduced body condition in the absence of any other physical changes or health concerns, it's a pretty good bet your pasture isn't providing your horses with enough nutrition.

**I keep five horses on just under 10 acres of pasture. What can I do to prevent overgrazing?**

The best management plan to prevent or slow overgrazing and help control spot-grazing is to implement a rotational grazing system. This involves moving horses through smaller sections of pasture, while leaving other sections to rest, giving plants the opportunity to regrow between grazing periods. It also encourages horses to graze in a more uniform pattern instead of selectively gobbling up their grasses of choice.

You can institute this system either as a preventive method to maintain the healthy plants or to “make your way back from a slightly overstocked situation, as compaction will ultimately result in a plugged pasture as the forage cover dwindles,” says Henning.

Authors of the Natural Resources Conservation Service’s *Pasture Management Guide for Horse Owners* write that a good rule of thumb is to “take half, leave half” of the plant’s leaf area during any grazing period. This allows the plant to continue making food for regrowth. Start by grazing horses in a paddock with grass at least 6 to 8 inches tall. Move the horses to the next paddock after they have grazed the grass down to an average height of 3 to 4 inches. Mow that just-grazed paddock to obtain a uniform 4-inch height.



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As a general rule of thumb, move horses to the next paddock once they’ve grazed the current one down to about 3 to 4 inches.

Otherwise, the ungrazed grasses will shade the rest of the forage and stunt its growth. Immediately following mowing, drag the paddock to scatter the manure. These steps will help discourage spot-grazing when the horses rotate back on that pasture.

The length of time horses graze each paddock depends on the amount of available forage and the time required for growth. Monitor plant growth carefully, and adjust grazing and recovery periods as needed. Recovery times vary based on season, rainfall, and plant species.

“It may be as short as 20 days before June 15 (spring/early summer) and 40 days thereafter (summer/early fall),” says Henning. Generally speaking, in the spring plants tend to grow at about twice the rate they do during the summer (see the chart on page 49).

Here’s how this system might work: Harry Horseowner has two horses and a single 4-acre pasture. He sets up a rotational grazing system by dividing the large pasture into eight half-acre paddocks, using polytape and fiberglass posts. In the spring, when the grass is growing rapidly, Harry allows his horses to graze each paddock for three days, giving each sector 21 days to recover before being grazed again. In the dry summer Harry adjusts the grazing period to eight or nine days to extend the recovery period to 60 days.

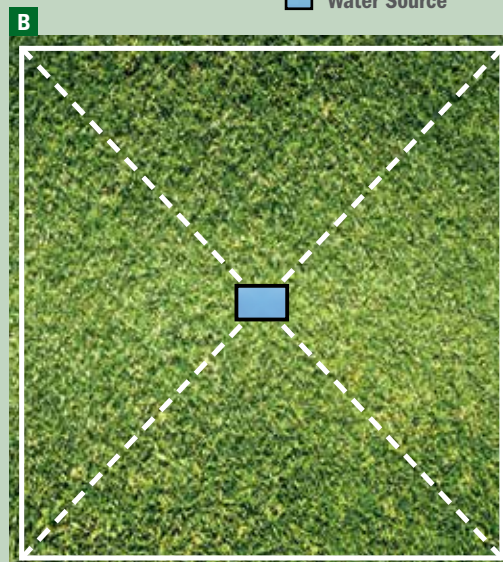
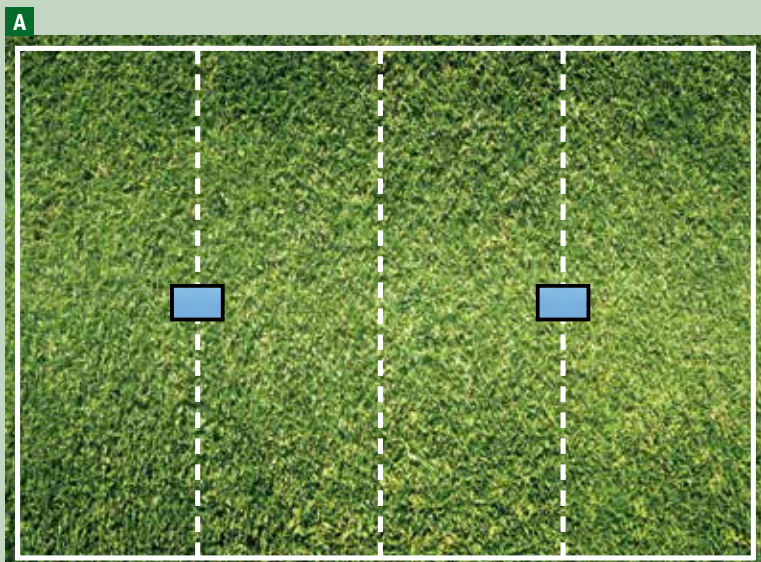
Henning recommends owners establish their own turn-on and pull-off grazing heights for their pastures. These heights vary by forage species because certain plants simply do not thrive well under horses’ grazing patterns. For example, “orchardgrass is more sensitive to overgrazing than Bermuda grass or Kentucky bluegrass, and white clover grows very close to the ground, making it tolerant of close grazing,” says Henning.

Authors of the UK Cooperative Extension Service’s resource “Rotational Grazing” list some ways to determine when to move horses to another pasture zone:

- **Look down.** Identify how much forage is left, and do not overgraze.
- **Look ahead to the next pasture in the rotation.** Is it ready to be grazed?
- **Look at the horses.** Body condition can indicate if the current pasture is meeting their energy requirements to maintain body weight.

**HOW TO SUBDIVIDE A PASTURE**

- Permanent Fencing
- - - Temporary Fencing
- Water Source



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- **Look behind at the previous pasture's regrowth.** The speed of regrowth will help determine how quickly horses can return to that pasture.
- **Look at the weather.** Remove horses from newly establishing pastures during periods of rain to prevent hooves from damaging plants.
- **Look at the calendar.** During times of fast plant growth, such as spring, horses can rotate to new pastures more frequently, with shorter rest periods

than in times of slow growth. Also, do not overstock your pastures. This is the most common reason horses overgraze. A single mature horse needs about 2 acres of pasture to support his grazing needs for an entire year. Therefore, if you have a 10-acre pasture, you should put no more than five horses on it.

### What if I only have one large pasture? How can I implement rotational grazing?

Rotational grazing systems can be flexible to accommodate different pasture sizes and shapes. One option is to divide

this larger pasture into several small paddocks, rotating horses among them. You can accomplish this using temporary electric fencing, which is easy to install and move and is fairly inexpensive to maintain after the initial investment. You can install lightweight plastic or fiberglass posts simply by inserting the ends into the soil. Secure several strands of polyethylene wire or tape to each post.

When laying out your plans to divide a pasture, make sure you consider gate and water locations. It's easiest to use a rectangle or square pattern if you have multiple or movable water sources. With one nonmovable water source, consider using a wagon wheel pattern (such as the one illustrated on page 47) or creating a lane to allow access to water instead.

"The key is having enough pastures in the system to prevent returning too soon before the plants have properly recovered," says Vanderburg.

### I don't have enough land for rotational grazing. How can I keep my pastures in good condition?

"To sustain the pasture resources, its use will always need to be controlled, as is the goal of a rotational grazing system," says Vanderburg.

Pasture quality will dictate the acreage needed per horse. You might be able to get by with as few as 2 acres per horse if the pasture forage is high-quality. If that's not an option, try implementing these techniques:

- If you determine there's not enough acreage to allow pastures to recover before being grazed again, you'll need to confine the horses to a drylot or stalls and feed them hay until the pastures have recovered, says Vanderburg. Establish a temporary sacrifice area. Once the horses have grazed the pasture down to about 3 or 4 inches, move them to that sacrifice area, mow to 4 inches, and allow the pasture to rest until it has regrown to at least 6 inches. When weighing whether to stall or sacrifice a paddock, she says, remember that horses should have as much pasture or outdoor time as possible; these animals are usually happier and healthier than those that are stalled.
- Avoid grazing too early in the season. "Grazing newly seeded pastures too soon increases potential damage, as the new seedlings have not developed a stable root system and may be easily

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Average pasture resting guidelines for cool- and warm-season grasses

Growth rate	Cool-Season Grasses	Warm-Season Grasses
Fast Growth	14-16 days	14-21 days
Normal Growth	20-30 days	21-28 days
Slow Growth	30-40 days	35-45 days

COURTESY: USDA/NRCS

pulled up,” says Vanderburg. Hooves can damage young plants. Move horses to the sacrifice area when necessary, especially in wet and muddy conditions. “A caution for horses out on spring pastures is that the lush new plant growth has a very high water content and low fiber content, resulting in poor or low-quality nutrition,” Vanderburg adds.

“Horses can be susceptible to colic or foundering (basically, the chronic form of laminitis, or painful inflammation of the laminae, which support the coffin bone within the hoof capsule) if turned out on lush, spring forage, especially if they have not been out on pasture all winter.”

- Test the soil and fertilize accordingly every spring before grazing begins. Remove horses before applying fertilizer, and keep them off the treated grass for two to three weeks or until ½ an inch of rain falls. You might also apply lime once or twice a year to help stimulate plant growth.
- Mow the pasture after grazing periods

to control weeds and allow for more uniform plant growth.

- Eliminate or reduce weeds. Weeds compete with more desirable plants for nutrients. Identify the weeds in the pasture, and use the appropriate herbicide when necessary (talk with your local extension agent if you need guidance on selection).
- If you have the option of reseeding your pastures, consider establishing more resilient grass species. Researchers at the University of Minnesota determined that orchardgrass, meadow fescue, tall fescue, and Kentucky bluegrass maximized rotational grazing pasture persistence and yield (Allen et al., 2012). In a four-year continuous grazing tolerance study from April to

October at UK, commercial varieties of tall fescue and orchardgrass tolerated overgrazing much better than timothy varieties. In areas where warm-season grasses thrive, Bermuda grass appears to tolerate heavy hooves best.

Wrapping It Up

If you want healthy pastures, you’re going to have to manage them rigorously throughout the year. Establish a grazing system that will not allow horses to graze grasses below 3 inches, and rest grasses until they grow to 6 inches. Use rotational grazing to move horses through smaller pasture areas that are ready to be grazed down. Most importantly, do not graze more horses than your acreage can handle. 🐾

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