Pasture Management by the Seasons

Pasture management can be a lot of work—here’s how to break down your planning by the season.

Winter

Winter is a great time to think about your pasture management and come up with a plan for what to accomplish this year. Especially when renovating or reestablishing pastures, it is often a multi-year process. Pull up a map of your farm and consider your pasture layout.

- Can you change anything to make it more efficient?
- Do you need to add laneways or stress lots?
- If you are interested in rotational grazing, think about which pastures you will rotate between or split into smaller paddocks. Can all of your horses go out together in one group or will you need multiple grazing systems?

Price out any projects for the coming year (reseeding, building a stress lot, fencing, etc). Contact experts and agencies (county Conservation Districts, USDA-NRCS) for technical assistance with design and engineering.

If possible, keep horses off pastures during the winter. The grass is not growing, but they continue to nibble everything down to the ground. This damages perennial grass plants, which will take longer to recover in the spring. In addition, your horses’ hooves slice through the soil in wet conditions, damaging root systems and further slowing spring recovery.

A stress lot would be an ideal place to turn horses out during the winter, or designate one pasture as the “winter pasture,” knowing that it will need to be renovated and rested in the spring. If your stress lots get very muddy in the winter and spring, look into installing heavy-use pads, AKA stabilized stone pads or all-weather paddocks, which improve drainage dramatically.

Try to avoid spreading manure in the winter, especially if there is snow cover or the ground is frozen. When plants aren’t growing, they don’t take up the nutrients in manure. Winter is a good time to review your Manure Management Plan for changes, or write one if you don’t have one yet. Every farm with livestock needs a plan, including horses!
Spring

Keep horses off the pastures until they have recovered and grown back from winter. A good guideline is to wait until there is 5-6" of growth before grazing. Introduce horses to spring grass gradually. Large amounts of any new feed can upset your horse's gut, and these spring grasses have a lot of non-structural carbohydrates (NSC; sugars, starch, fructans) that can trigger laminitis and founder in susceptible horses. Start them off with 15 minutes of grazing per day, and gradually increase until they are grazing for your target turnout time. If you have laminitis-prone horses with metabolic issues such as insulin resistance and Equine Metabolic Syndrome, remember that early spring grasses are highest in NSC all year.

Soil Testing

If you have not tested your soils within the last 3 years, you can take soil samples any time the ground is not frozen. Testing kits are available from your county Penn State Extension office and contain instructions for taking the perfect representative sample from each of your pastures. You can also find directions for pulling samples and the submission form at the Agricultural Analytical Services Lab website. Make sure to use the Agronomic Crops submission form.

Nitrogen

Timing of nitrogen (N) fertilizer application is important because it does not stick around in the soil very long. Spring green-up is an important time to apply N, which causes a flush of green, leafy growth (that is, if you have grass). If your pastures are sparse or mostly weeds, then you should work on establishing more grass before applying N. Once pastures start turning green in April or so, the N will jump-start grass growth and you will have a lush, productive pasture. If you find you already have plenty of grass in the early spring, you can delay the N application until later in May or June when the first flush of growth slows. Either divide the recommended amount of N from your soil test result in half or thirds, or apply 40-50 pounds of N. Important note: pounds of N is not the same as pounds of fertilizer as different fertilizers contain different proportions of N. The product label will specify the percentage of N, so just take that percentage of the bag’s weight to calculate how many pounds of N are in the bag.

After applying fertilizer (especially N), you should keep horses off the pasture until about a half inch of rain has washed the fertilizer off the grass.

Phosphorus and Potassium

Your soil test results will also have recommendations for phosphorus (P) and potassium (K) fertilizers. These can be applied any time after the first grazing, so think May or June. The soil test recommendations for N, P, and K are meant to be applied annually for 3 years, then another test should be taken.

Lime

Lime can also be applied any time during the year. Your soil test report will tell you how much to apply. Note that this recommendation is intended to be applied once during the 3-year period between soil tests. Do not apply it yearly. Lime takes 6-12 months to react in the soil, so if you are reseeding, plan ahead and apply it 6-12 months before seeding. If the quantity of lime needed is a problem, you may split the total amount into multiple applications.
Weed Control and Forage Management

Keep an eye out for weeds and try to identify them. The first weeds you will see (in Pennsylvania) will be winter annuals like henbit and purple deadnettle, which germinate in the fall and flower in the early spring. Summer annuals germinate in the spring and die in the fall; therefore, the best time to spray them is in the spring when they are small and tender. Other types of weeds (perennials, biennials, winter annuals) should be sprayed at different times for maximum effectiveness. It is best to identify the weed and select an herbicide that has demonstrated effectiveness on that plant. You can look up herbicides in the Penn State Agronomy Guide, or contact your local Extension office for help identifying weeds and choosing a control method. If using herbicides, make sure to read labels carefully and follow all requirements including grazing restrictions and reseeding intervals.

You can plant cool-season grass seed like orchardgrass, Kentucky bluegrass, perennial ryegrass, etc. in the springtime, but it may be less successful than a fall seeding due to weed pressure and approaching hot summer temperatures. New seedings should not be grazed for one grazing season to ensure the plants become well-established with deep, healthy root systems. See the Pasture Seeding Timeline.

Regular mowing is great for pastures. Immature, leafy grass plants are high in nutritive value (energy, protein) while mature, stemmy grass plants with seed heads have lower nutrition but higher fiber. Regular mowing encourages the plant to replace leaves instead of going to seed. It also helps control some weeds! If using a rotational grazing system, a great time to mow is right after you switch horses to a new paddock. Never mow below 3-4 inches; this damages tall grasses and increases forage recovery time.

Grazing Management

Once horses are acclimated to spring grass, it's time to start your grazing rotation. Start grazing a pasture when grasses have reached 8-10 inches, and move horses when grasses are 4-5 inches tall. If this takes longer than a week, you could add horses to the group or use temporary fencing to make the paddock smaller. Grass regrowth will be rapid in the spring (2 to 3 weeks), so as long as you have enough paddocks in the rotation, you shouldn’t need to confine horses to stress lots unless it is raining and soggy.

Summer

Any time that grasses are green and growing is a good time to evaluate your pastures. Take a walk through each one and note the proportions of bare ground, weed cover, and desirable cover. A quick and easy method for this is the Equine Pasture Evaluation Disc. This can help you make decisions about renovation and reseeding.

Cool-season grass (orchardgrass, Kentucky bluegrass, timothy, tall fescue, brome, etc.) growth slows significantly when it gets hot and dry. If grazing rotationally, you may need to confine horses to a stress lot/dry lot while you wait for a paddock to recover to 8-10 inches of forage. Make sure to feed hay since they’re not consuming pasture forage.

If it's a mild summer and there's plenty of moisture, you can make another nitrogen application for increased summer growth. Around June, you can apply another 20-30 lbs. of N if there is adequate rainfall and forage. Lime, P, and K can also be applied in the summer if they were not applied in the spring.

Identify weeds of concern and make a pasture weed inventory. By the time weeds are large and mature in late summer, you can’t do much other than mow them and prevent them from spreading seeds. However, once you identify them and their life cycles, you can look up the most effective herbicide and the most effective time to control them next year. Remember that weed control is an ongoing process and often requires pasture improvement, so a single treatment is unlikely to solve all your problems.

If you plan on hiring someone to do pasture work in the fall, get in touch with them early. Fall is a very busy season for custom applicators. Find out if your laneways and pasture gates are wide enough for the equipment to get through and turn around.
Late summer/early fall is a great time to reseed pastures because there is less weed pressure and temperatures will be getting cooler, which benefits cool-season grasses. The optimum time to seed Pennsylvania pastures is before Labor Day (weather permitting, of course). Using a planter like a no-till drill is more effective than broadcasting into existing forage. Make sure to keep horses off a newly seeded pasture until it is well established - at least until early summer the following year. Refer to the Pasture Seeding Timeline.

If you are not sure what kind of grasses you have in your pastures, look at the color when temperatures start getting cold. Desirable cool-season grasses like orchardgrass, tall fescue, Kentucky bluegrass, and perennial ryegrass will be green and growing. Summer annual weed grasses like crabgrass, foxtail, barnyardgrass, and Japanese stiltgrass will be ending their life cycles and turning brown. If your pastures are mostly brown in late fall, you may want to consider reseeding with cool-season grasses.

If you do have a lot of summer annual grasses, mow when you see seed heads forming. The only way they regrow from year to year is through dropped seeds. Mowing before the seeds drop will reduce the number that grow back next year. Continue to catalog weeds. Some difficult perennial weeds like horse nettle and Canada thistle can’t always be controlled by mowing, and they will spread from year to year via the root system. Fall is the most effective time to spray many perennial weeds with herbicide because they are transferring energy reserves down into their roots, and plants will pull the herbicide into the roots with the energy reserves.

As temperatures cool off and grasses break summer dormancy, another application of nitrogen (N) will provide more forage growth during the fall green-up. Another 40-50 pounds of N around September is appropriate. Remember to let some rain wash the fertilizer off the grass before returning horses to pasture.

Conclusion

Maintaining your pastures in lush, green grass takes significant work and investment. However, you will find many rewards in the beauty of your fields, the reduced weeds, and the amount of extra feed it provides for your horses. Note that lush, high-quality pasture does provide a significant source of calories for horses; horses at maintenance can have their energy and protein needs met with pasture alone. Keep an eye on weight by body condition scoring or using a weight tape regularly. Obese horses or those with metabolic problems may need to wear grazing muzzles or even be kept on dry lots. Consult with your veterinarian!

Authors

Laura Kenny
Extension Educator, Equine
lbk8@psu.edu
484-971-6512

extension.psu.edu

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