



Managing Pastures in Drought Conditions

UW-Madison Division of Extension

Is it Drought or a Summer Slump?

Cool season grasses are highly dependent on regular rainfall, with 1 to 1.5 inches a week needed for sustained optimal growth through the summer. While dry and hot conditions in July and August frequently result in a “summer slump”, longer periods of deficient rainfall can dramatically reduce pasture production. Poor management during drought can slow pasture recovery after the rain starts falling again. For that reason, farmers should develop their grazing plan to account for the summer slump and include a contingency plan for prolonged drought. This publication will focus on two aspects of managing pastures for drought:

1. Proactive pasture management to reduce the severity of drought stress should it occur.
2. Reactive management for when drought stress reaches a severity that requires a change in your usual management practices.

Managed Grazing Reduces Drought Stress

When drought begins to stress pastures, the first priority is to make sure livestock are kept healthy and well-fed. This includes making sure an adequate supply of stored feed is available to keep them on the farm but it may involve relocating or selling off animals. While these decisions are the highest immediate priority, farmers should also take this opportunity to identify management changes to avoid future problems. Farmers who implement managed grazing practices are better positioned to deal with drought conditions. Well-managed pastures are naturally more tolerant of drought conditions. Well-managed grazing includes:



Photo 1. As drought stress increases in severity, farmers must look ahead to anticipate pasture forage availability and implement a response plan (photo by Natasha Paris).

- Rotating livestock to a new pasture at least every 3 to 4 days.
- Leaving 4-6” of residual after grazing.
- Resting pastures until fully recovered (30+ days) between grazings.
- Appropriate stocking rate and density for the pasture acreage you have.

When these four principles are applied, the plants are never depleted of carbohydrate reserves and have a well-developed root system that can access water deep in the soil profile. The soil surface is adequately covered to preserve soil moisture, and the potential for regrowth is maximized. These benefits will only occur where proper management is applied. Observing how your pastures respond to drought conditions can help you be better prepared the next time it happens.

Dealing With Drought When it Happens

Drought stress can occur anytime during the grazing season. Monitoring weekly rainfall is a good strategy for being prepared for drought stress. If you go more than 3 weeks without 1 to 1.5 inches of rain per week, the paddocks that were grazed during the dry period will have slower regrowth and will not be ready to graze again as soon. The longer the dry conditions continue, the longer the rest period each subsequent paddock will need. Keeping track of how many days or weeks of

grazing you have ahead of you allows you to implement a timely drought response. While the strategy will look different for every farm, the best response plan will minimize both short and long-term costs and speed the recovery of the pasture when the rain begins again. For example, feeding hay on pasture for a few days can help recovering pastures bounce back faster. If done improperly, feeding hay on pasture can lead to damage that requires the pasture to be reseeded later.

What To Do First

- **Do not speed up the rotation.** Many farmers are tempted to do this, but it is very counterproductive. As regrowth slows, regrazing the regrowth before the plant has a chance to adequately recover further saps its energy reserves and uses up critical soil moisture, weakening the plant and pushing it toward dormancy.
- **Extend the rest period – slow the rotation.** Maximizing the regrowth period is critical for drought recovery and the long-term health of the stand. Plants use sunlight, water, and carbon dioxide to make carbohydrates. When water is limited, the photosynthesis process slows down and the plant shifts from growth to maintenance mode. More time is needed for the plant to recover from a grazing event.
- **Do not overgraze.** Maintaining proper residual heights – at least 4 to 6 inches following grazing is even more critical during drought conditions. Overgrazing during drought can do long-term damage, resulting in costly re-seeding.
- **Encourage good forage utilization.** Increasing stocking density with small paddocks and frequent rotation maximizes consumption of edible forage and minimizes the amount mature forage refused in the next rotation.
- **Know when to pull your animals off pasture.** Feeding stored feed off pasture or on a single sacrifice paddock may be the best option for minimizing damage to drought stressed pastures.
- **If feeding hay on pasture,** consider measures that minimize the impact of hoof traffic on pasture such as unrolling bales or feeding in a portable feed wagon that you move periodically.
- **Weigh the cost of clipping the pasture.** While clipping to remove seedheads is usually a good measure for maintaining forage quality, it may

stress the plants and limit regrowth due to lack of soil moisture.

- **High temperatures** often accompany drought conditions. Keeping your livestock cool with plenty of water is a priority and that sometimes necessitates modifying your grazing rotation. Prolonged periods of extreme temperatures may require a source of shade, and farmers should consider this as well.

Considerations For Prolonged Drought

If dry conditions extend beyond the length of a typical grazing rotation (typically 30 days; often 40+ days for coarser soil types), you will be returning to paddocks that have not had time to recover and even if rainfall returns to normal, all paddocks you've grazed since the drought began will have slowed growth. You've lost that production. You will not have enough pasture to feed your animals for the rest of the season.

- If persistent drought seems likely, hay for sale is likely to become expensive and scarce for the current season. Consider securing hay for feeding now and for winter from off-farm sources soon before prices increase. Many farmers do this by trying to keep a constant surplus of stored feed on their farm. For graziers, it is not a bad idea to have several months-worth of hay in reserve.
- Consider alternative forage options to replace lost pasture production. Warm season annuals such as oats or sorghum-sudangrass can be planted or interseeded into thinned pastures.
- Seek out additional forage acres to rent. Sometimes CRP acres or other idle grasslands are made available during drought conditions.
- Consider non-farmland acres such as woodlots. Shrubs and young trees can provide forage. Species such as maple, box elder, aspen, poplar, cottonwood, basswood, ash and mulberry can all be used as forage. Be aware of any toxic species that exist, even though livestock often avoid them. Be mindful of avoiding overgrazing or trampling in wooded areas.
- If de-stocking is an option, consider selling before the market is flooded and prices drop. Consider culling underperforming cows or selling weaned calves or feeders early.
- Once rainfall occurs and soil moisture is replenished, keep an eye on rapidly growing legumes for the potential of bloat.

Resources for Managing Through Drought

Drought Monitor – the national drought monitor website can be used to track drought progress and severity. It can help to determine when to implement response measures, allowing the farmer to enact a plan before drought symptoms become severe:

<https://www.drought.gov/states/wisconsin>

Hay Market Report – the UW-Madison Division of Extension gathers hay market prices from across the state and reports them bi-monthly. This information can help to facilitate hay purchasing decisions:

<https://cropsandsoils.extension.wisc.edu/hay-market-report/>

Livestock Market Reports – the WI State Farmer publishes weekly livestock market reports from across WI. This information can help with decisions regarding removing or selling livestock, giving the farmer the potential to sell animals before potential price drops. The reports are available in the “business” section at:

<https://www.wisfarmer.com/business/>

Managing Bloat – bloat is one potential issue that must be monitored once pastures receive rain and legumes begin growing rapidly. A short publication for managing bloat can be found at:

<https://fyi.extension.wisc.edu/forage/bloat/>

Toxic Plants in Midwest Pastures & Forages – when considering alternative forage sources from woodlots, idle grasslands, or CRP acres, being aware of toxic plants is important for the safety of livestock. This publication can help with identifying and managing plants that are toxic to livestock:

<https://learningstore.extension.wisc.edu/products/toxic-plants-in-midwest-pastures-and-forages-p1838>

Summary

Just like every growing season, every drought unfolds differently. Always focusing on grazing management best practices will keep your pastures in prime condition to maintain health and productivity during drought conditions. Having a drought contingency plan you can implement will help you get through a drought with healthy livestock, healthy pastures and a healthy checkbook.



Photo 2. Rotation of pastures, proper residual after grazing, and sufficient rest periods are all practices that can help to minimize the symptoms of drought stress in pastures.

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