



Forage Use and Grazing Herd Management During a Drought

Lisa Baxter, Associate Professor and State Forage Specialist

Pedro Carvalho, Assistant Professor

William Secor, Assistant Professor & MAB Program Coordinator

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A severe and sustained drought is stressful to the grazing herd, forage crops, and herd manager. A manager can use certain tactics within their management strategy to minimize the short-term effects of mild drought. However, these decisions often do not take into consideration the long-term consequences when the drought lasts for several weeks or months.

Making proactive management decisions to minimize damage from sustained drought stress is

crucial to economically maintaining a forage-based livestock operation. This resource provides producers with strategic management tactics that can minimize the potential for short- and long-term losses.

Early Stages or Mild Drought

This section can apply to abnormally dry (D0) or moderate drought conditions (D1) according to the U.S. Drought Monitor (<https://droughtmonitor.unl.edu/>). This section would precede more severe stages of drought.

In the initial stages of a drought, rainfall has failed to keep up with the evaporative demand. **Evapotranspiration** (ET) refers to the loss of water to the atmosphere from evaporation and transpiration. For example, it is common for atmospheric conditions to cause the ET loss of up to 0.30 in. per day on hot and dry days. If rainfall has not replenished what has evaporated after several days of such a high demand, the soil may not contain enough water to keep up with the demand, and plant growth will slow.

If forage growth slows, reduce the stocking rate of the pasture and begin to look at the price of alternative feedstuffs that could supplement existing forage reserves. For more information on understanding stocking rate, please review the UGA Extension resource B 1568, *Understanding Stocking Rate in Pasture Systems*.

Examine your herd records to determine which animals would be most likely to yield a long-term return on the money invested in supplemental hay and feed. Review or develop a prioritized list of animals to retain in the herd or flock and make a list of animals to cull. Animals that are open, older than 10 years, have poor reproductive efficiency, have poor disposition, or produce offspring with low weaning weights would be candidates for the cull list.

Characteristics of Early or Mild Drought

- Daily evapotranspiration has exceeded the precipitation for several days.
- Forage growth has begun to slow down from normal growth.
- Blades of grass curl during the midday heat and the swards begin to have more of a blue-gray tint rather than the bright green color of nonstressed stands.
- Tire tracks made by a tractor, off-road vehicle, or pickup remain apparent even a day or two after they were made.
- Rainfall is unlikely within the next 3–7 days.

Tactics

- Lower the stocking rate on each pasture (i.e., increase the area being grazed by the current number of animals).
- Investigate the prices of supplemental feedstuffs that could stretch the available forage in the pasture if the drought persists. These may include soybean hulls, corn gluten, cottonseed, whole cottonseed, peanut by-products, or other locally available feed resources.
- Maintain cows in a body condition score of at least 5, especially during calving and breeding seasons.
- Sample available hay lots, obtain a forage analysis, and work with your local county Extension agent to develop balanced rations.
- Review or develop a cull priority list.
- Continue to monitor weather conditions and the short- and long-term forecasts.
- Wean calves that are 7 months or older.
- Sell cows from your cull list.

Prolonged or Severe Drought

This section can apply to severe drought conditions (D2) according to the U.S. Drought Monitor. It may also apply to abnormally dry (D0) or moderate drought conditions (D1) that have persisted for multiple weeks. This section would precede more extreme or exceptional stages of drought.

As the drought becomes more advanced, forage species will begin to go dormant. Drought alone rarely kills forage species, but overgrazing forages during this stressful stage can cause persistence problems. Poor persistence leads to weed encroachment and soil erosion, which can be costly to the producer in the future.

Therefore, it is important to restrict access to the entire pasture or farm. Identify a “sacrifice area” to hold and feed the herd or flock. This will limit the damage from overgrazing. Renovate these sacrifice areas following the drought. Allow only limited access to the rest of your pasture for brief periods.

Carefully examine the costs associated with feeding hay and feed supplements. Develop a feed ration based on available feedstuff and forage supplies and provide just enough to maintain moderate body conditions of the herd or flock. This will be around a body condition score of 5 for most cattle.

Dry females have their lowest nutritional needs in early to mid-pregnancy. Early weaning is a strategy used to maintain brood animals on poor-quality forage with little or no supplemental feed, allowing the producer to stretch available feed. Early weaning and pasture supplementation strategies for beef cattle are presented in the UGA Extension resource [B 1323, *Drought Management Strategies for Beef Cattle*](#).

You should view forage and supplements as investments, especially during a drought. Producers must balance the benefits and costs of maintaining their forage and animals. Producers should invest only in animals that are likely to generate a return and should focus on those animals that will provide the highest returns. Carrying open, old, or unproductive animals through a drought is unlikely to be feasible.

As the drought worsens, prices for culled animals will drop quickly. Pay close attention to the long-range weather forecasts and the current market. Do not hesitate to lower the population or destock earlier rather than later. If no drought relief is in sight, sell low-priority animals before the market price declines sharply.

Characteristics of a Prolonged or Severe Drought

- Daily evapotranspiration has exceeded precipitation for several days.
- Blades of grass remain curled throughout the day, and the blue-gray tint of the sward is peppered with tan-colored leaf tips and new growth that has withered at the soil surface.
- Forage growth has slowed dramatically and has completely stopped in areas where soil water-holding capacity is low.
- Animals are grazing the forage noticeably faster than the rate at which the forage is growing. Average pasture height is decreasing.
- Receipts at the livestock markets increase relative to previous weeks and years, and the market price for cull animals has decreased slightly but not sharply.
- Rainfall is unlikely within the next few weeks.

Tactics

- Maintain a minimum stubble height of 3 in. of bermudagrass, 3 in. of bahiagrass, and 4 in. of tall fescue.
- Limit the grazing pressure on current pasture supplies by supplementing animals with hay or feeds.
- Maintain cows in a body condition score of at least 5.
- Provide supplementation considering pasture availability and the quality of the supplement (i.e., maintain a balanced ration).
- Reduce the nutritional needs of brood females by weaning calves that are 5 months or older and allowing weaned animals to access pasture supplements and creep feeds.
- Identify and use only a specific set of paddocks. Choose future planned renovation areas to sacrifice.
- Maintain records on the availability of forage and other feeds.
- Start culling cows that had calves with below-average weaning weights and have bad dispositions.
- Continue to monitor weather forecasts and the market price for indications to cull further.

Severe and Extreme Drought Conditions

This section can apply to extreme (D3) or exceptional (D4) drought conditions according to the U.S. Drought Monitor. It may also apply to more moderate or severe drought conditions that have persisted for multiple weeks. This is the time for taking more intentional actions to protect the farm.

Using an up-to-date forage and feedstock inventory, calculate exactly how many animals (if any) that the operation can feasibly carry through the anticipated duration of the drought. Even if a drought-ending rain is in the forecast, make sure that your plans account for pasture recovery time. If grazing begins before a sufficient regrowth has occurred, this additional stress will prevent plants from accumulating reserves for future regrowth and will cause further thinning of stands.

Furthermore, toxic compounds like nitrates or prussic acid may be present in high concentrations following drought-ending rains. For more information on forage nitrates, please

review the UGA Extension resource [C 915, *Frequently Asked Questions About Nitrates in Grazed and Harvested Forages*](#).

Characteristics of Severe and Extreme Drought

- Daily evapotranspiration has exceeded precipitation for several weeks.
- Forage growth has stopped and most, if not all, grazed pastures are down to the minimal stubble height.
- Remaining blades of grass stay tightly curled throughout the day and are almost completely tan-colored and withered.
- Receipts at the livestock markets have increased sharply each week and are up dramatically (200% or more) from previous years.
- The market price for cull animals either has begun to decrease or has decreased sharply.
- Rainfall is unlikely within the next few weeks or prior to the exhaustion of available feed supplies.

Tactics

- Continue to confine animals in sacrifice paddocks and limit the access to current pasture supplies (if any) by allowing them to graze for brief periods during the morning or evening.
- If the leaves and/or stems of warm-season grasses in the sorghum family (sorghum, sudangrass, sorghum x sudan hybrids, and johnsongrass) are wilted and tan-colored, avoid feeding this forage as it may contain toxic levels of prussic acid.
- Continue supplementing this limited grazing with a balanced ration of hay, soybean hulls, corn gluten, cottonseed, or other such supplements to stretch the available forage.
- Maintain cows in a body condition score of at least 5.
- Focus on investing resources only in animals that are likely to generate a return by continuing to cull according to your cull priority list. Begin culling more deeply based on calf weaning weights, cow age, and calving date. Try to maintain a herd of cows that will calve within a 90-day period.
- Wean all calves that are 60 days of age or older. If calves are retained, feed them a grain/by-product-based diet (80% grain/by-products) to continue growing at acceptable rates.

- If the economics of feeding existing inventories of pasture, hay, and feedstuffs to remaining animals appears to be unprofitable, and weather forecasts do not indicate immediate relief, calculate how many animals are feasible to carry and sell the remaining livestock.

Financial Assistance Following Drought

You may wish to investigate potential government support to offset financial difficulties. Eligibility and enrollment vary by program. Some government support is available after a severe drought has occurred (e.g., the Livestock Forage Disaster Program available from USDA Farm Service Agency).

In contrast, other opportunities are only available if a producer is enrolled prior to the harmful event occurring (e.g., pasture, rangeland, and forage insurance available through approved insurance providers). This reinforces the importance of planning for drought and other risks proactively.

Summary

Herd management during a drought may not prevent short-term losses, but can prevent long-term losses to the forage-based livestock operation. As drought sets in, you can temporarily lower stocking densities (fewer grazing animals per acre), stretch available forage with hay or supplemental feedstuffs, or even lower the nutritional needs of animals. However, such tactics may only be cost-effective for a short time. Keep in mind that culling of animals may be necessary as the drought persists or intensifies.

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