

Forage Use and Grazing Herd Management During a Drought

Dennis W. Hancock, Extension Forage Agronomist, Crop and Soil Sciences Department

Johnny Rossi, Extension Animal Scientist, Animal and Dairy Sciences Department

Curt Lacy, Extension Livestock Economist, Agricultural and Applied Economics Department

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

Make proactive management decisions in order to minimize damage from sustained drought stress. This brief management guideline provides producers with specific management tactics that may minimize the potential for short and long-term problems. These tactics, categorized in order of early, advanced, and severe drought stages, are based on specific characteristics including water loss, forage growth, and rainfall.

Early Stages of Drought

Characteristics

- Daily evapotranspiration (loss of water to the atmosphere from evaporation and transpiration) has exceeded the precipitation for several days.
- Forage growth has begun to slow.
- Blades of grass curl during the mid-day heat and the swards begin to have more of a blue-gray tint rather than the bright green color of non-stressed stands.
- Tire tracks made by a tractor, ATV, 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 feedstocks (soybean hulls, corn gluten, cottonseed, etc.) that could stretch the available forage in the pasture if the drought persists.
- Maintain cows in a body condition score of at least five.
- Sample available hay lots, obtain a forage analysis, and 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 seven months or older.
- Pregnancy test cows and sell cows that are open, old (\$ 10 years old), did not wean a calf, or have a physical defect.

Explanation: In the initial stages of a drought, rainfall has failed to keep up with the “evaporative demand.” For example, it is common for atmospheric conditions to cause the loss of up to 0.30 inches¹ per day. 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. As a result, plant growth slows. If forage growth slows, reduce the stocking rate and begin to look at the price of alternative feedstuffs that could supplement existing forage reserves. Examine your herd records to determine which animals would be most likely to yield a long-term return on the money invested in hay and supplement. Review or develop a prioritized list of animals to retain in the herd and of animals to cull (ex: cows that are open or old, have poor reproductive efficiency, poor disposition, produce low weaning weights, etc.).

Advanced Stages of Drought

Characteristics

- Daily evapotranspiration (loss of water to the atmosphere from evaporation and transpiration) 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 (i.e., 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 stubble height of 2' of bermudagrass, 1½' of bahiagrass, and 2½-3' of tall fescue.
- Limit the grazing pressure on current pasture supplies by allowing animals to access hay or creep rations containing soybean hulls, corn gluten, cottonseed, or other such supplements.
- Maintain cows in a body condition score of at least five.
- Provide the supplementation based on a consideration of the available pasture and the quality of the supplement (i.e., maintain a balanced ration).
- Reduce the nutritional needs of brood females by weaning calves that are five 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.

Explanation: As the drought becomes more advanced, forage species 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. This will limit damage from overgrazing to specific areas instead of your entire pasture. 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 supplements. Develop a ration based on available feeds and forage supplies, and provide just enough to maintain moderate body conditions (ex: maintain body condition scores for cattle around five). 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 *Drought Management Strategies for Beef Cattle*, University of Georgia Extension Bulletin 1323.) You should view forage and supplements as investments, especially during a drought. 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 early rather than too late. If no drought relief is in sight, sell low priority animals before the market price declines sharply.

¹The use of the term “inch” in reference to water (precipitation or evapotranspiration) is 1 used to describe a volume of water (i.e., an acre-inch) in this publication.

Severe and Extreme Drought Conditions

Characteristics

- Daily evapotranspiration (loss of water to the atmosphere from evaporation and transpiration) 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 percent 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 sacrifice animals in paddocks and limit the access of grazing animals 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 five.
- 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 percent grain/by-product) to continue growing at acceptable rates.
- If the economics of feeding existing inventories of feedstuffs (pasture, hay, supplements, etc.) 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.

Explanation: Using an up-to-date forage and feedstock inventory, calculate exactly how many animals (if any) that the operation can feasibly carry through the drought. Even if a drought-ending rain is in the forecast, make sure that plans account for pasture recovery time. If grazing begins before a sufficient re-growth has occurred, this additional stress will prevent the plant 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 a drought.

Summary

Herd management during a drought may not prevent short-term losses, but can prevent long-term losses to the foragebased livestock operation. As drought sets in, the herdsman 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. Yet, such tactics may only be cost-effective for a short time. Keep in mind that culling of animals may be necessary as the drought worsens.

Related Publications

Drought Management Strategies for Beef Cattle, University of Georgia Extension Bulletin 1323

Nitrate Toxicity, University of Georgia Extension Circular 915



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