Drought Management Strategies for Beef Cattle

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Drought conditions are a yearly occurrence in Georgia and have been prolonged in several areas over the past several years. These conditions can have severe impacts on cattle, and every cattleman should have a plan in place to minimize the effects of drought on the farm's finances. The ultimate effect of drought is decreased forage production, resulting in diminished feed available for cattle. This can lead to problems such as reduced pregnancy rates, loss of body condition of the cow, and lower milk production, which lowers weaning weights. With the decreased availability of nutrients coming from forages, producers need to either supplement to meet nutritional requirements, and/or decrease the nutritional requirements of the cattle. Supplemental feeding will add to the cost of production; therefore, supplemental feed costs need to be kept as low as possible and purchased feed should be kept to a minimum. This publication describes several management strategies for producers to consider during drought conditions.

Culling

The most common method for reducing feed needs during a drought is to sell a portion of the herd. Consider pregnancy testing and culling open cows, old and low producers, and cows that calve late in the calving period. This will provide more feed for younger, more productive cows.

Early Weaning Calves

Most cattle producers in Georgia market calves at weaning time. Weaning weights are almost always negatively affected during a drought situation. Producers can choose to sell calves at younger ages, wean and feed calves separately from cows or supplement the cow herd with stored or purchased feeds. Dry cows in early to mid-pregnancy are at their lowest in terms of nutritional requirements. These cows can be maintained on poor-quality forages with little or no supplemental feed.

Considerations for Early Weaning

1. A dry cow will require about 30 to 40 percent less energy protein feed than a lactating cow.
2. Cows that you plan to cull after calves are weaned can be culled now. This will reduce the amount of feed needed. The normal culling rate is approximately 15 to 20 percent each year. Culling combined with early weaning will cut the feed needed for cows by at least half.
3. Low-producing dry pastures may be enough to maintain cows that have had their calves weaned. Maintaining cow and calf pairs on dry pasture will result in very low calf growth rates as well as lowered body condition scores and conception rates in cows.
4. Early weaning the calf at 120 days of age or less has been shown to greatly improve conception rates when grazing the same forage as cows that continue to nurse their calves. In addition, cow body condition is improved when calves are early weaned, and cows will require less supplemental feed in the fall and winter to regain body condition.
5. Calves can be fed higher quality supplemental feeds without decreasing their weight at seven months of age, which is the time calves would normally be weaned. Early-weaned calves are extremely efficient, often requiring 4 to 5 pounds of feed per pound of gain when fed a high-quality diet.

Rations for Early-Weaned Calves

Pasture or hay without any supplemental feed will not work for early-weaned calves. Calves will not gain enough weight to justify early weaning. Calves that are early weaned can be fed a typical high grain feedlot ration; however, with current feed prices, this is likely not an option. Rations for calves that are early weaned should contain 70 percent or greater TDN and 16 to 18 percent protein. The protein level can be lowered to 13 to 14 percent when calves weigh 450 pounds. Also include minerals, a vitamin pack and possibly an ionophore (Rumensin® or Bovatec®) to reduce digestive disorders and improve feed efficiency.

Creep Feeding

If early weaning is not an option, then creep feeding is an excellent alternative. The most profitable time to creep feed is during a drought. A mixture of 75 percent grain and 25 percent cottonseed meal can improve gains by 0.5 to 1.0 pound per day. Another widely used creep feeding option is 100 percent soybean hulls or a mixture of 50 percent soybean hulls and 50 percent corn gluten feed.

Supplements for Cows

If pasture is depleted after the cow herd is culled, then supplemental feeding will be necessary. The two options for supplementation are purchased hay or a hay replacement ration. Hay is the most often used option, but may not be the most economical. Grains and by-product feeds are often cheaper per unit of energy than hay. This is especially true during a drought situation when there is a lot of competition for any available hay. Several research studies have shown that limit feeding high-grain rations based on grains or by-products will successfully maintain a dry cow. The grain mix (14 percent protein) is usually fed at 1.0 to 1.5 percent body weight. At least 4 pounds of hay or a roughage such as cottonseed hulls should be fed to maintain normal rumen function. A lactating cow will require about 30 percent more feed than a dry cow. Limit feeding grain supplements requires a high level of management, and producers can seek help from their local Extension agent for implementing this management practice.

Another option is to feed a grain/roughage mix free-choice. The rations generally contain 50 percent roughage such as peanut hulls, cottonseed hulls or hay. The grain portion (50 percent of diet) should contain at least 15 percent protein for lactating cows and 12 percent for dry cows. A few examples for the grain mix are 85 percent corn and 15 percent soybean meal, 50 percent corn gluten feed and 50 percent soyhulls, and 60 percent corn and 40 percent whole cottonseed. Many by-product feeds and grains can yield acceptable performance. Your local county Extension agent can help formulate a free-choice ration.

Grouping Cows

It is important to group cows by nutrient needs, such as production status (dry vs. lactating), age and body condition. Grouping cows can avoid over- or under-feeding a particular group, which will reduce supplemental feed costs. Pregnant cows may lose body condition when grazing drought-stressed pasture. Therefore, body condition score cows at least 60 days prior to calving and adjust the ration to ensure cows are at least a condition score of 5 at calving time.

Supplements for Forage

Many producers may be feeding hay or have limited grazing available. Adequate nutrition can be achieved by supplementing energy, protein, minerals and Vitamin A. The following supplements can be considered.

1. **Range Cubes** – Range cubes require no feed troughs and are convenient, but they are also expensive. Feeding 3 to 5 pounds per day is generally recommended; however, more can be fed if needed.
2. **Liquid Supplements, Molasses Blocks, Protein Blocks** - These supplements are convenient but expensive. Daily consumption will generally be less than 2 pounds. Liquid supplements provide supplemental protein but will not provide enough supplemental energy. Cows should be fed 3 to 5 pounds a day of supplemental energy.

3. **Grain, By-Products** - A mix of 75 percent corn and 25 percent soybean meal can be fed at 3 to 5 pounds per day to maintain animal performance. By-product feeds such as soyhulls, citrus pulp, corn gluten feed, wheat middlings, cottonseed and distillers' grains can provide economical sources of protein and energy. These feeds are equal in energy to corn when fed as a supplement to a forage-based diet. A disadvantage to using by-products is that some operations may not have storage facilities and most by-products must be purchased in truckload lots to be economical. However, several producers can purchase a portion of a truckload to ease this problem. For smaller quantities, producers may want to store feed in a gravity flow wagon or store feed in large bags that can hold up to a ton of feed. It will have to be handled by hand to feed but may be the only economical feeding method available. These by-products vary widely in protein and feeding recommendations, so you may want to ask your local county Extension agent for help when balancing rations using by-products.
4. **Self-Fed Supplements** - Rations containing a protein supplement with salt can provide 2.5 to 3.5 pounds of supplement per cow per day when cows are fed fair quality hay free-choice or have limited grazing. The supplement should consist of one-third each of corn, cottonseed or soybean meal, and salt. Reduce salt to 20 percent for an intake of 4.5 to 5.5 pounds per day. Approximately 10 to 15 percent of the salt should be in the form of trace mineral salt and the remainder can be plain white salt. Do not use trace mineral salt as the only salt source, as a trace mineral toxicity could occur. Be sure plenty of fresh water is available when feeding salt-limited diets. Use limited supplement intake with salt-only for mature cows. Cows will vary in their consumption of salt and the salt level may need to be continually adjusted during the feeding period. Provide Vitamin A at the rate of 7,000 International Units per pound of feed (14 million units per ton). Cattle should be hand-fed for one week prior to self-feeding in order to adjust to these rations.

Summary

Culling priorities should start with open cows first, old cows second, and low producers third. Early weaning can greatly reduce feed costs and allow cows to maintain a body condition score of 5, which should lead to optimal (> 90 percent) pregnancy rates. Calves weaned earlier than normal require a nutrient-dense diet that must be either a grain-based diet or a high-quality forage such as ryegrass plus a grain supplement at approximately 1 percent of body weight. A variety of supplements can be used to replace a portion of the forage needs during a drought. When the forage supply is exhausted, limit-fed grain-based diets are an economical, effective solution to feeding cows.

Table 1. Hay replacement ration guidelines for brood cows.

Ingredient	Dry Cow	Early Lactation	Late Lactation
	----------% of ration----------		
Roughage[1]	60	30	45
Energy and/or by-product feed[2]	40	45	45
Protein Source[3]	--	25	10

[1]Possible roughage sources include hay, straw, peanut hulls, cottonseed hulls, cotton residue, corn residue or gin trash.
[2]Possible energy sources include soybean hulls, citrus pulp, wheat middings, hominy or any grain.
[3]Possible protein sources include distillers' grains, corn gluten feed, whole cottonseed, cottonseed meal, soybean meal, canola meal and sunflower meal.

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