

Strategies for Poor-Quality Forage Management IN GEORGIA COW HERDS

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EXTENSION

How is the recent weather affecting the Georgia hay crop?

Similar to weather conditions in 2013, excess rain from May to July of 2018, followed by an August drought, have led to tremendous variation in the 2018 hay crop. Beef cattle producers in the Southeastern U.S. need to be on the lookout for cows experiencing diarrhea, fatigue, calving difficulties, weight loss, or even dying. In past years with similar weather, producers have also reported an increase in the number of cows aborting or giving birth to weak or stillborn calves.

What is causing forage quality issues?

Although the exact causes may vary, the most likely culprit may be poor nutrition, primarily resulting from feeding low-quality hay, generally overmature hay caused by the unusually wet summer. Forage samples taken from the first and fourth hay cuttings in 2018 at the University of Georgia Tifton campus black shank grazing unit have resulted in relative forage qualities (RFQ) ranging from 114.3 to 88.8 in Tifton 85 Bermudagrass and 94.9 to 78.3 in Russell Bermudagrass. This is extremely troubling. In this case, the low-quality Russell variety averaged 8.9% crude protein and 49.5% total digestible nutrients (TDN). While this forage may be adequate to meet the basic needs of a dry cow in mid-gestation, it isn't sufficient to meet the nutritional requirements of cows in late gestation or during lactation. Nor is this forage adequate to meet needs of growing calves or breeding heifers.

Forage quality analyses for Bermudagrass samples sent to the UGA Feed and Environmental Water (FEW) Lab since April 1, 2018, are mimicking what has been recorded in Tifton, Georgia, indicating that **2018 hay quality is highly variable**. At first glance, mean crude protein (CP) values are seemingly acceptable (~12%), however, there is up to a 30% coefficient of variation, with some reported CP values as low as 3%. While TDN has less variation (9%), the minimum reported TDN value is 34.1%, and we determine a product to be straw, with no substantial feed value, at 45%. Also, as seen with the samples in Tifton, RFQ values have a coefficient of variation of 20%. While the forage quality reports to date aren't as detrimental across the board as those seen in 2013, the variation we are seeing is a major cause for concern.



Figure 1. Omasal impaction from poor-quality forage in 2013.
Photo credit: UGA-Tifton Veterinary Diagnostic Laboratories

Forage quality issues have been exacerbated in the past by feeding supplements that do not provide adequate energy, protein, or other nutrients. Also, supplements that are formulated to stimulate forage intake can become hazardous when forage quality is exceptionally low due to the risk of impactions (Figure 1). The UGA Beef Team has documented such cases in past years. Lack of supplemental feed or incorrectly formulated supplements will result in cases of malnutrition and/or impacted gastrointestinal tracts. This situation resulted in numerous reported cattle deaths in Georgia in the winter of 2013-2014.

What should cattlemen do to address the problem?

Understand your resources.

Sample and test your hay. This is the most important point presented here. It is impossible to formulate an economical supplement with any certainty if the nutrient profile of the base diet (hay) is not understood. Be sure to follow proper sampling procedures as each lot of hay can have wide variations in quality as illustrated with the most recent data collected in Tifton. Guessing could be damaging to your operation, so remember the phrase, “Unless you test, it’s just a guess!” It is also important to know the ingredient inventory and pricing schedule of your local feed provider. These are the key factors for formulating the most economical supplement after the nutrient requirement for the supplemental diet has been established.

Understand the body condition score (BCS) of your cow herd.

Cows should be maintained at a BCS of 5 or greater. If the BCS drops below this level, it will drastically reduce conception/calving rates (BCS 5 = conception rates of >85%) and stretch the calving interval (BCS 5 = calving interval every 360 to 370 days, whereas BCS 4 or lower = calving intervals > 380 days). Given the potential for a difficult winter season combined with poor-quality forage serving as the basis of the diet, producers who have consistently maintained their brood cows at a BCS of 5 or greater will be better able to withstand extreme weather shifts or short-term nutritional deficits. Keep in mind that to recover a cow’s BCS from a 4 to a 5 requires a ration with a 9% higher TDN above the maintenance requirement for about 70 days.

Avoid additives that are applied to poor-quality hay designed to increase intake.

Cattle can starve to death with a full belly. As the digestibility of a forage decreases, cows are forced to consume more to sustain sufficient energy intake. When forage quality is exceptionally low, increased intake of hay that is largely indigestible will increase the risk of impaction within the digestive tract (Figure 1).

Consider a grain or byproduct-based feed to supplement low-quality forage.

Although more labor intensive, supplemental feeds instead of liquid feeds or protein blocks may help alleviate some of the performance and health issues associated with feeding low-quality forages. From the standpoint of trying to maintain a healthy rumen environment, fiber-based energy supplements such as soybean hulls, corn gluten feed, distillers grains, citrus pulp, and whole cottonseed are recommended over those that contain high levels of starch (e.g., corn or oats) and simple sugars (e.g., molasses). In most cases, fiber-based energy sources may be the most economical way of meeting nutrient requirements. Table 1 illustrates some example rations that can be used for cows at different stages of production using different commodity feeds or blends. Please note that a custom ration can be easily formulated based on available feedstuffs.

Table 1. Supplemental rations for 1200-lb brood cows consuming Bermudagrass hay during various stages of production.

Cow Stage of Production: Nutrient Requirement	Forage Quality of Free Choice Hay		
	Poor Forage, 7% CP, 48% TDN	Average Forage, 10% CP, 50% TDN	Good Forage, 13% CP, 56% TDN
-----lb / head / day-----			
50:50 CGF and SH¹			
Dry Pregnant: 7% CP, 48% TDN	0	0	0
Peak Lactation: 12% CP, 60% TDN	17	12	6
Late Lactation: 9% CP, 55% TDN	10	6	0
50:50 DDGS² and SH			
Dry Pregnant: 7% CP, 48% TDN	0	0	0
Peak Lactation: 12% CP, 60% TDN	16	11	5
Late Lactation: 9% CP, 55% TDN	10	5	0
60:20:20 SH: CGF: Corn			
Dry Pregnant: 7% CP, 48% TDN	0	0	0
Peak Lactation: 12% CP, 60% TDN	N/A ³	11	5
Late Lactation: 9% CP, 55% TDN	11	5	0
Whole Cottonseed			
Dry Pregnant: 7% CP, 48% TDN	0	0	0
Peak Lactation: 12% CP, 60% TDN	N/A ⁴	N/A ⁴	4
Late Lactation: 9% CP, 55% TDN	6	4	0

¹CGF = corn gluten feed; SH = soybean hulls

²DDGS = distillers dried grains plus solubles

³Deficient in CP

⁴Above the recommended feeding rate of 0.5% of body weight (6 lb for a 1200-lb brood cow)

Use winter annuals judiciously. If winter grazing is available, use it, but use it carefully. When hay quality is low, the temptation to overgraze winter annuals is high. So if you have winter grazing available but not enough to sustain the herd, consider limiting grazing the winter annuals for only a few hours per day. While you may not be able to completely meet nutrient requirements, the addition of winter grazing to the diet should help to prevent impaction issues and will improve ruminal fermentation of both annuals and hay.

Do NOT attempt to background calves on low quality hay. Although backgrounding offers the opportunity for added value to weaned calves, this should not be at the expense of the future productivity of the herd. Similar to the brood cows, knowledge of forage quality is imperative. If the cost of additional supplementation is greater than the potential added value of gain, marketing shortly after weaning is advisable.

Take-home message

It is important to realize that forage quality is extremely variable this year, and traditional supplementation methods may not be adequate to support the maintenance of body condition, fertility, health, and production and could contribute to life threatening health problems in cows and calves. Hay testing and using the UGA Basic Balancer for ration development is strongly encouraged. These technologies will provide producers with the tools necessary to make informed feeding decisions throughout the winter months. Supplements should contain quality protein and metabolizable energy that will work together to maintain a healthy and productive rumen environment. It is essential to know where you stand in terms of BCS and forage quality on your farm, and it is important to market calves as soon as possible if hay resources have tested below average. Infectious diseases or parasites can cause similar problems in cow herds, so it is important to determine if the reason is inadequate nutrition or another cause.

For more information or assistance developing a nutritional strategy for your herd, contact your local Extension office (1-800-ASK-UGA-1), and visit beef.caes.uga.edu, www.georgiaforages.com, or www.secattleadvisor.com

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