

# What is the *Perfect* Pasture?

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Every few weeks, it will happen. When everyone else has asked their questions or left after one of my presentations at a Cattlemen's meeting, someone will sidle up to me and quietly ask "that one question" they've always wanted to ask me: "What do you think is the perfect pasture?"

It's an earnest question. So, in this month's article, I list aspects of what would ideally be in a perfect pasture. These ideals assume a typical cow-calf pasture in Georgia, with some specifics when differences exist between North and South Georgia. Cattlemen running stockers, replacement heifers or even purebred stock are likely to have ideals that differ somewhat from those listed here. Though the applications may be different, the principles are essentially the same.

## **Fertile Ground**

It starts with the soil. Ideally, the soil would have a pH of  $6.5 \pm 0.3$  and at least medium-high to high levels of soil-test P, K, Ca and Mg. Additionally, the soil would ideally have 3.5 percent-plus organic matter. Since the average pasture has a pH of 5.8, medium levels of each nutrient, and less than 1.5 percent soil OM, these ideals are high standards. But, if the goal is the ideal, let's shoot for what our soil can achieve and not settle for what is average.

## **Solid Foundation**

Ideally, a perennial grass would be the foundation upon which a forage system is built. In the Limestone Valley and Mountain regions of Georgia, it should be the cool-season perennial grass: tall fescue. Ideally, it would be a novel endophyte tall fescue, which does not have any of the toxic alkaloids that can be in the typical varieties (Figure 1).

Below the Fall Line, the foundation should be a warm-season perennial grass. Ideally, this would be 'Tifton 85' bermudagrass. I've just raised the blood pressure of the fans of bahiagrass and alternative bermudagrass varieties – but the facts are that no other warm-season perennial grass can match or exceed the stocking rates, pounds of beef produced per acre, and net return per acre that can be achieved on 'Tifton 85' bermudagrass (Figure 2). Certainly, there are many situations where bahiagrass or an alternative bermudagrass may be a better choice. Though under ideal conditions in South Georgia, no other perennial forage would be better than an acre of 'Tifton 85' bermudagrass (Figure 3).

In the Piedmont, the ideal choice is some of both. Producers in this region can use the novel endophyte tall fescue as stockpiled forage in the fall and winter, and lush pasture in late spring. But they can also use 'Tifton 85' bermudagrass for summer and early fall grazing.

## **Cream and Sugar**

I often use the analogy that our forage system should be a lot like how I like my coffee. The perennial forage is the foundation, just as a good-tasting coffee forms the base of my morning cup of joe. But a little cream and sugar makes it

ideal. For tall fescue-based pastures, some white or red clover will make an ideal addition. Ideally, white or red clover would be regularly frost-seeded (ideally on Valentine's Day) into tall fescue pastures. For bermudagrass pastures, the ideal would be to add 'Durana' white clover to the pastures and dedicate an area to alfalfa to use it for creep grazing. Adding legumes in this way will fortify those pastures with extra protein and digestible energy, improve weaning weights, build body condition in the cow herd, and increase the calf crop.

## **Keep It Balanced**

Ideally, the average-size beef cow would graze nearly all of the approximately 10,000 pounds of dry forage each year that it must consume. To maximize year-round grazing, the forage base must be balanced between cool- and warm-season forage species. As a rule of thumb, far-North Georgia producers would ideally have pasture systems that allow 67 percent of the grazed forage to be from cool-season forage, with the remaining 33 percent being warm-season forages. Conversely, far-South Georgia producers would ideally have pasture systems that provide a ratio of about 40:60 cool- to warm-season forage. Cattlemen who fall between these two ends of the state should find that their ideal proportion would be somewhere between these extremes.

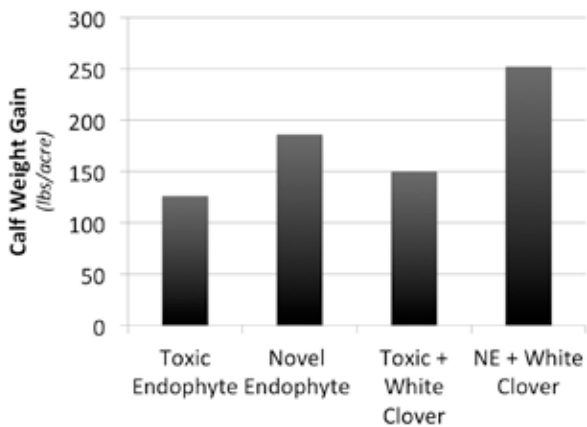
Of course, this does not mean that the whole farm should be planted in this proportion. Instead, the ideal pasture would be an assembly of several smaller pastures (paddocks) that are each planted to cool-season or warm-season forages. In the case of bermudagrass paddocks, these would ideally double as cool-season paddocks with the addition of winter annual forages such as annual ryegrass, oats, rye or wheat along with winter annual legumes.

Additionally, some acreage would ideally be best dedicated toward annual forage production. Recent economic research out of the University of Kentucky has suggested that most beef cow-calf farms in the Southeast would benefit from having 5 to 20 percent of their farm dedicated to winter and summer annuals, depending on their calving season and climate. Having dedicated annual paddocks allows the producer to strategically plant winter or summer annual mixtures, to allow for an early start to the grazing season or extending it into winter. Starting these annuals early or ending them late will allow one to ease the transition between cool- and warm-season forage in the spring or fall.

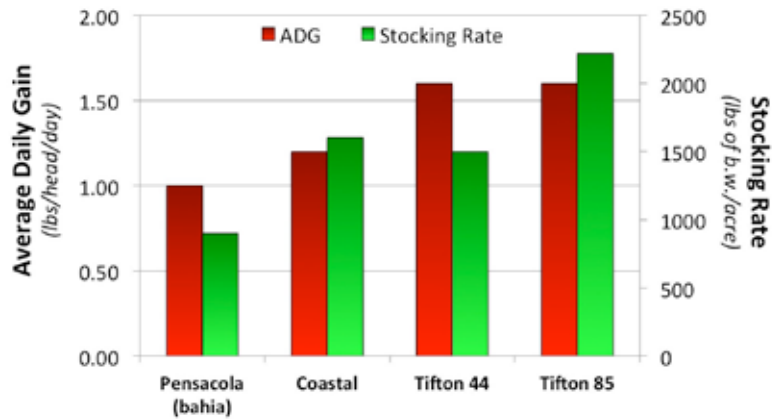
## **The Right Number and Size**

Under the aforementioned ratios of cool- to warm-season forage production, most cow-calf producers in Georgia would ideally have at least 10 to 12 paddocks. Having this number of paddocks would allow the cattleman to rotate at least every two to four days. This would ideally allow for a 25- to 40-day rest period for the pasture to regrow and redevelop root reserves. More paddocks and faster rotations would be even

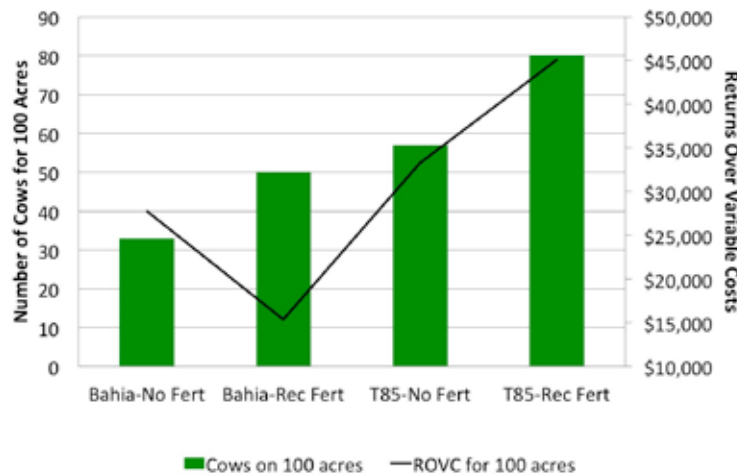
# Expert Advice



**Figure 1.** Calf performance on toxic and novel endophyte-infected tall fescue with and without white clover at the Northwest Georgia Research and Education Center.



**Figure 2.** Average daily gain and stocking rate on ‘Coastal,’ Tifton 44,’ and ‘Tifton 85’ bermudagrass relative to ‘Pensacola’ bahiagrass. Values are averages across two studies in Georgia and one in Texas.



**Figure 3.** Economic comparison of bahiagrass and ‘Tifton 85’ bermudagrass with and without recommended levels of fertilizer, illustrating the number of cows that could be carried on 100 acres and the returns over variable costs on 100 acres under the respective pasture systems (adapted from Lacy and Hancock, 2012).

more ideal from a forage management perspective, but this may or may not be economically ideal on those farms. Still, with at least 10 to 12 paddocks and 25 to 40 days of rest, the Georgia cattleman could expect to sustain a 30- to 40-percent increase in their stocking rate, compared with no rotational grazing. This arrangement will also allow for the use of dedicated annual paddocks and occasional renovations to the perennial forage base.

### Elements for Success

Defining the ideal pasture is not just on the basis of the forage that grows in it. The ideal pasture also contains other elements – such as water troughs, shade, gates, mineral/supplement feeders, and lanes. Within the pasture, the water source, shade, gates and feeders would ideally be isolated from one another but always located within 400 to 600 feet of all areas of an individual paddock. When these elements are within that distance, livestock will go to those pasture features one or two at a time. At farther distances, they will go as a herd, and they will often camp out there for extended periods

of time. The number and length of lanes should be kept to a minimum, to prevent loss of grazeable acres. For optimal cattle maneuverability, lanes should be wider than 8 feet but narrower than 20 feet.

### Good May Be Better Than Perfect

I worry that this extensive list of “ideals” may leave readers shaking their heads and muttering about pointy-heads, ivory towers and over-education. But those of you who know me know that I understand the difference between ideals and what is practical.

There is no such thing as the ideal or perfect pasture. Nothing that we do in this world is perfect. Cattlemen don’t have the time or money to let perfect be the enemy of good. So these “ideals” should really be treated as a target.

For more information on forage production and pasture management, visit our website, [www.georgiaforages.com](http://www.georgiaforages.com). If you have additional forage management questions, visit or contact your local University of Georgia Cooperative Extension office by dialing 1-800-ASK-UGA1. 