Dependability

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Dependability is an important factor in forage production. Many years ago, Dr. Glenn Burton asked me what I thought was the most important characteristic of a desirable forage grass or legume for a cattle producer. Knowing of his great successes in breeding higher yielding and higher quality grasses, I answered, "Better yield and nutritive quality." 'No, Carl," he replied, "The most important thing to the average cattle producer is the dependability of a forage plant year after year." Over the years as I have observed new forage varieties that have come and gone, the wisdom of Dr. Burton's words have continued to impress me. Cattle producers are often willing to accept less yield and lower nutritive quality as long as that forage plant is dependable when subjected to drought, heat, cold, or flooding along with periods of low fertility or overgrazing.

The main perennial grasses

There are many forage grasses and legumes grown in Georgia. However, there are three major grass species that make up the vast majority of our perennial pastures and hayfields. They are bermudagrass, endophyte-infected tall fescue, and bahiagrass. All are immigrants from foreign countries: bermudagrass from southern Africa, tall fescue from Europe, and bahiagrass from southern Brazil. Why have these immigrants done so well here? They are tough and tolerate average environmental conditions in our pastures but also extremes in temperature, drought, soil acidity, low fertility, and grazing pressure. Thus, these species are the base perennial grasses that have survived over long periods of time and will no doubt remain with us unless some equally well adapted species with more desirable characteristics are planted and able to compete with the present grasses.

Other perennial grasses

Some other perennial grasses are successfully grown in Georgia. This may be a result of more favorable climate, soil, fertility, grazing, or cutting management. Special management efforts by producers to maintain these grasses may be worth the effort to obtain higher nutritive quality and better animal performance.

Johnsongrass - This high-quality grass is best adapted on wetter clay soils. It will not tolerate close continuous grazing and must be rotationally grazed or cut for hay at heading stage to allow adequate food storage in rhizomes.

Big bluestem - This grass, along with other warm season perennial bunchgrasses such as switchgrass, indiangrass, and eastern gamagrass were native to our region but were grazed out by cattle of early European settlers. These grasses will not tolerate close continuous grazing and must be rotationally grazed to maintain stands and productivity.

Dallisgrass - This leafy high-quality warm season grass frequently occurs in pastures but thrives and is productive only on clay or loam soils of moist bottomland.

Endophyte-free tall fescue - This grass gives high animal performance without the toxicity problems of infected tall tall fescue but will not tolerate hard overgrazing in summer. The Jesup variety is superior to other endophyte-free varieties.

Orchardgrass - An excellent quality cool season pasture or hay plant adapted only to cooler regions of the mountains and upper Piedmont where it can survive three to four years before being displaced by tall fescue. It will not tolerate continuous close grazing, especially during summer.

Kentucky bluegrass - Commonly found in pastures of the mountains and upper Piedmont. It tolerates close grazing and spreads by rhizomes but is a low yielder with little or no production in summer.

Rescuegrass - A very high-quality cool season grass that naturally reseeds in pastures, especially in areas of high fertility. It may survive two to three years in northern areas of the state. Productivity is often severely reduced as it is highly susceptible to mildew disease.

Perennial Legumes

Legumes are highly desirable for their nitrogen fixation and high nutritive quality but generally are a minor component of pastures. Most of our perennial legumes are undependable compared to the base grasses unless carefully managed. However, progress has been made in breeding more dependable legumes and improved varieties are on the way.

Perennial peanut - Potentially one of the best perennial warm season legumes on well-drained sandy soils. However, it has the handicaps of being cold hardy only in extreme south Georgia and requiring vegetative planting along with very slow establishment.

Alfalfa - A drought-tolerant, long season legume. Requires good drainage, good fertility, and liming. Grazing-tolerant varieties are available. Excellent for creep grazing of calves.

Kudzu - Good quality but relatively low yielding and must be rotationally grazed or stands will weaken and disappear.

Sericea lespedeza - This long-lived warm season legume is well adapted to acid, low-fertility, droughty soils for low-cost hay. As a grazing plant it is less successful because high-tannin varieties are not very palatable and low-tannin varieties such as AU Donnelly can be easily overgrazed and stands lost.

Ladino clover - A cool season legume that tolerates close grazing but stands generally persist only one to two years because of intolerance to heat, drought, and grass competition. Maintaining clover in a pasture requires overseeding the grass sod every year or two.

Red clover - A highly productive legume that is more drought tolerant than ladino clover but is not tolerant of close continuous grazing, often resulting in stands persisting only one to two years.

Annual grasses and legumes

Annual forage plants are less

dependable than perennials because they must germinate and become established each year, a hazardous period when seedlings can be lost from diseases, insects, drought, and competition. The annual cool season grasses such as rye, wheat, and ryegrass are more dependable than annual legumes. Annual ryegrass has the advantage of fairly good natural reseeding if the grazing management allows a seed crop. These grasses can provide high-quality winter grazing and extend the productive season of warm season grass pastures. Crabgrass, a warm season annual, is an excellent natural reseeder and dependably furnishes highquality grazing in summer if soil fertility and rainfall are adequate.

Dependability of crimson and arrowleaf clovers varies from year to year. Dry autumns delay germination of crimson clover until winter with slow establishment, resulting in only a short productive season before maturity in spring. Arrowleaf clover may also encounter disease problems that shorten the productive season. Even with dependability problems, these clovers can provide valuable low-cost grazing when well managed.

The future

It is not likely that the three main base grasses, bermudagrass, endophyte-infected tall fescue, and bahiagrass, will be replaced by new species in Georgia. However, current breeding research indicates that cattle producers will soon have the opportunity to improve nutritive quality of their grass pastures with better white and red clovers that tolerate grazing, drought, and competition to a greater extent. Likewise, excellent progress is being made in developing nontoxic tall fescue that is more tolerant of drought and close grazing than older endophyte-free varieties. Several new crimson clover varieties with greater winter productivity are already available. A low-tannin grazing-tolerant sericea lespedeza appears promising for pasture use. Some of these developments are likely to be useful in improving cattle performance in the future.