

The Forager

THE NORTH CAROLINA FORAGE AND GRASSLAND COUNCIL
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THE

FORAGER

Summer forages – Is it time for a new, old friend?

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Although the dog days of summer, and the parched pastures that come with it, may seem like they are a long way off, it is not too soon to think about strategies for improving summer forage production. The National Cattlemen's Association's Standard Performance Analysis data make clear that the factor with the greatest impact on enterprise profitability is cost of feed, especially purchased feed that is bought at a premium during droughts. With about two-thirds of the cost of beef production being feed/forages, it is no wonder this makes a big impact on profitability. Recent droughts, many of them record-breaking, combined with increased inputs costs (nitrogen above \$600/ton) make effective summer forage production even more critical for producers.

Tall fescue, the backbone of forage production in the upper Southeast, is a reliable producer in spring and fall, but leaves us with a summer "forage slump". This slump is particularly acute during drought periods. In the past, producers may have relied on summer annuals (expensive and must be established each year at some risk) or bermudagrass (demands high inputs) to fill this slump. Another option we should consider is not a new idea at all. Rather, it is an old idea, one we may be guilty of overlooking in recent years – native grasses. Species such as big bluestem, switchgrass and eastern gamagrass are all native to the Southeast and consequently are well-adapted to our soils and climate.

There are a number of reasons why should we consider native grasses as summer forages. They are perennial, grow during the summer, are long-lived (more than 15 years with proper management), won't spread, and can grow on a wide variety of soils from thin and dry to those that are poorly drained. More importantly though, they are the most drought-tolerant grasses we can grow, partly due to remarkably deep root systems – as much as 10 – 12 feet deep. That can make a huge difference in yield come summer time. In one University of Tennessee (UT) study, switchgrass produced 65% of its long-term average yield (nearly 5 tons of biomass per acre) during one of the worst droughts in that state's history!

Native grasses also get by on low to moderate levels of soil fertility. Typical production recommendations call for only 60 units of nitrogen per acre and pH above 5.0, levels well below those recommended for tall fescue or bermudagrass. Demand for phosphorous and potash also are low. Combined with high yields (4 – 5 tons per acre in terms of hay), these grasses produce forage at notably lower per unit costs than other summer forage options. For instance, an analysis by UT using identical input prices and standard production budgets indicated that gain on steers grazing native grasses cost only \$0.31 per pound versus \$0.54 for bermudagrass and \$0.75 on summer annuals. Cheap gain means more profits for producers.

These grasses have also performed well in recent grazing trials being conducted at UT. Average daily gains for 600 pound weaned steers were 1.59 pounds for eastern gamagrass, 1.76 pounds for switch-

SUMMER FORAGES (CONTINUED)

-grass and 2.09 pounds for a big bluestem/indiangrass blend. In these trials, stocking ranged from 1,000 pounds (later in the summer) up to 2,500 pounds per acre during the first half of the growing season.

As with any forage though, native grasses have weaknesses. The two most obvious are that they are more difficult to establish producing no forage during the seeding year and that they require closer management. Because they are tall growing, maintaining proper canopy heights (i.e., 15-30 inches) during continuous grazing can be a challenge. Rotational grazing is a better option and results in better productivity and maintains stand vigor more effectively.

Regardless of their pros and cons, these “old friends” are worth considering as a supplement to your cool-season forages. To learn more about using native grasses for forage, please visit <http://nativegrasses.utk.edu/> or plan to attend the native grass workshop in Mount Ulla in Rowan County on June 18. It may be that the time has come to once again go “old school” – real old school!

2013 NCFGC Environmental Stewardship Award Winner: Beaver Creek Farm owned by Mike and Jean Jones

Beaver Creek Farm is located in Surry County in northwestern North Carolina. It was purchased by Mike and Jean Jones in 1974 and consisted of 57 acres at the time of purchase. Additional land has been gradually added. At present, the farm consists of 190 acres split nearly in half between pasture and woodland (100 acres and 90 acres, respectively). The wooded areas are early succession cut-overs and serve as buffers and wildlife habitat on the farm. There are 9 hills on the farm, which can present the challenges of runoff and erosion in major rain events. The upland is very rocky and the soil gravelly. In the pastures, grasses provide soil protection so efforts are made to avoid over-grazing and exposing bare soil to the weather. Pastures have traditionally been cool season species common to the area, tall fescue as the primary species with perennial clovers, bluegrass, and orchardgrass mixed in. The farm contains 5 small, unnamed creeks and is privileged to boast 900 ft of frontage on the Fisher River and 7500 ft of frontage along Beaver Creek.

Five Shorthorn/Angus heifers were purchased in 1975 and served as the genetics base for the farm for many years. Various crosses were made with Hereford and Angus sires. Cattle were grazed continuously on available pastureland and hay was harvested whenever possible, although hay quality was often minimal because of weather and other growing season challenges. This foundation herd was sold off in 1998 and no cattle were on the farm for over 2 years. In the fall of 2001, five black Angus-based cattle arrived and then in 2002, the first registered Angus cow/calf pair was added. These purchases were followed by a registered Angus bull in 2003. Additional cattle purchases and retention of calves has brought the herd to its current numbers of 20 to 30 cow/calf pairs plus replacement heifers and calves being finished for marketing in the grass-fed niche. Jones' currently market 12 head of cattle per year as freezer beef, with most of the meat sold locally by word of mouth.

Care for land and water resources have played a key role in the development of daily operations at Beaver Creek Farm. Many improvements in management style and physical resources have been made since operations began in 1975. As previously mentioned, the original herd of cows was continually grazed, as is typical in NC. Hay was harvested off the land when weather and forage supplies permitted. The hay was then stored and fed back to the cattle when pastures became depleted or snow covered the ground. This strategy required considerable fuel and equipment expenditures. Mike and Jean have learned that cattle can do an effective job of harvesting the forage for themselves in all kinds of weather, so they no longer harvest forage for hay on their land. When it was no longer needed, haying equipment was sold in the spring of 2011 and hay is purchased, when needed. The Jones' have also learned that if you have to feed hay, how you feed it matters. Unrolling the bales, instead of feeding it from trailers reduces stress on the land and allows the pastures to recover from hay feeding more easily. It also improves manure and urine distribution on the land, improving soil fertility and possibly reducing the need for chemical fertilizers.

Numerous efforts have been made to improve land, water, and equipment resources at Beaver Creek Farm. Up until 2002, cattle had free access to surface water on the farm. They drank from creeks and rivers and were allowed to stand in waterways. The small creeks suffered from the damage cattle can do. In 2002, 3000 feet of easement was donated from the farm for the restoration of Beaver Creek. This was followed by an EQIP cost share project (also in 2002) to install 6 permanent drinkers for the cattle and fencing to keep them out of surface waters. Once the cattle were prohibited access, the creek beds healed themselves, improving water quality and making habitat more pleasant for wildlife. Money from the sale of hay equipment was used to add

**BEAVER CREEK FARM
(CONTINUED)**

additional drinkers. There are 20 on the farm now plus Mike uses 2 temporary drinkers on pastureland he rents. He keeps cattle out of surface waters even when he does not own the land.

“Rotational grazing” officially began on the farm when the permanent drinkers were installed. Mike and Jean began using poly-wire to subdivide their pastures and get more efficient use of the available forage. Mike makes daily walks to move the wire so the cattle get fresh forage every day. Walking means Mike avoids starting any gas- or diesel-powered vehicles, which saves money and reduces pollution (and he gets some exercise). He says, “I haven’t cranked the tractor to feed my cattle all season!” They stockpile cool season forage growth beginning in August and then graze it off over the winter. There is normally enough forage to last until spring growth begins.

In 2011, Mike began working more closely with the Natural Resources Conservation Service by participating in the Conservation Stewardship program. He received a wildlife habitat improvement cost share for planting big bluestem and indiangrass. Pasture renovation has been done with soil conservation in mind. The cool season pasture was killed and then no-till overseeded with annual ryegrass. Once the ryegrass was grazed off, it was also killed and finally the native grass planted. Seeding was done with a no-till drill so the soil was never “naked”. Mike and Jean have seeded 25 acres with either a big bluestem and indiangrass mix or Eastern gamagrass. They are currently in their fourth year of grazing the gamagrass. He plans a prescribed burn in early 2013 on 45 acres to improve small animal habitat on his farm.

Soil health is important to Mike and Jean. They began taking soil samples from their land in 2005 and have done so every other

year since that time. Results from early soil tests indicated the soil was acidic (pH 4.5 to 5.7) and had relatively low cation exchange capacity (CEC), a measure of the soil’s ability to hold nutrients. By adding lime, poultry litter, and fertilizer to the soil, pH was raised to 6.4 to 6.9 and CEC increased from 5.0 to the 11.2 to 13.0 range. Phosphorus index was improved from below 1 to the 36 to 179 range and the potassium index was raised from about 40 to the range of 78 to 120. By keeping a check on soil tests, fertilizer can be added to meet pasture needs, avoiding excesses and the chance for nutrients to leach into surface or ground waters, while at the same time saving money by not paying for nutrients that are not really needed. Pastures are seldom, if ever, clipped. Mike and Jean have found that cattle will consume plants that were once considered to be weeds. If the plants are not consumed, the cattle trample on them, killing them back, and allowing them to contribute organic matter to the soil.

Mike has hosted 3 winter grazing workshops over the years. By doing so, he encouraged his neighboring beef farmers to practice good stewardship and to implement improved pasture management. Nothing teaches a beef farmer like another beef farmer. By allowing guests on the farm, Mike helped spread the “gospel of amazing grazing”. Mike also frequently shares innovations with other farmers in *Drovers* magazine in the “Profit Tip” section. By doing so, he promotes grazing with his “can-do, it’s really not hard” attitude. One of the innovations Mike shared is a storage rack for his fencing equipment, which won the Best Innovation of 2012 award.

Mike and Jean will continue to manage their farm with environmental stewardship in mind. Their motto is, “Stewardship of the environment comes first and its bonus is delicious beef.” Mike and Jean feel it is important to lead by example. Mike and Jean look forward to many more years of raising beef cattle and using their stock to help manage the resources on their farm. They continually seek out ways to improve their stewardship, paying attention not only to their cattle, but also to the visible and invisible wildlife species their farm hosts. Mike and Jean value both fauna and flora. Any visitor to Beaver Creek Farm will find it to be not only productive from the beef perspective, but also a place of environmental beauty and peace.



Mike Jones checks his grasses and his cattle

Bermudagrass Establishment

By Becky Spearman, Bladen County Extension Agent

Bermudagrass (*Cynodon dactylon*) is a warm-season perennial grass that grows well in sandier soil types and can tolerate high temperatures. It is popular because of its ability to take up large amounts of nitrogen in the form of animal or municipal waste, high nitrogen use efficiency, and high summer yields. Bermudagrass is grown for both hay and pasture.

There are three ways to start new bermudagrass fields: 1) by seeding either common bermudagrass or the newer improved bermudagrass varieties, 2) by sprigging hybrid bermudagrass, or 3) by using cuttings. Common bermudagrass and the newer varieties produce viable seeds. The improved seeded type bermudagrasses are more productive than common. Hybrid varieties do not produce fertile seeds and must be established from sprigs or top-growth cuttings. Freshly dug sprigs are the best source of planting stock for hybrid bermudagrasses. Mature top-growth cuttings can be used to establish some varieties, but growing conditions, especially moisture, must be favorable to succeed. Fields should be fertile, free of weeds, firm, moist, and the soil pH should be above 5.5. Fertilizer should be applied according to soil test recommendations. For all plantings, proper soil preparation and moisture are the keys to success.

When establishing bermudagrass, the grower has the option of using a seeded variety (common or improved) or using sprigs. Although sprigging is more expensive than establishing from seed, it offers some advantages. First, herbicides are available for weed control during early vegetative establishment. The lack of effective weed control is a serious issue when establishing seed-type varieties, as stands can be lost to weed competition. Second, many available sprig-planted bermudagrass hybrids were developed in the South and may be better adapted to our environment. The advantages to seeding are that it is usually less expensive and it may be easier to find a source of seeds.

Seeding common bermudagrass. Plant common bermudagrass seeds in April or May at a rate of 5 to 10 pounds of seed per acre. The field should be disked and cultipacked firmly prior to planting. Plant the seeds 1/4 inch deep, then cultipack/firm the soil. If moisture (rain or irrigation) is available, it is possible to produce stands from seeds planted as late as June. Seedlings are weak competitors, so weeds should be controlled with tillage and herbicide applications for several years before establishment is planned.

Seeding improved bermudagrass. Choosing a well-adapted variety is important when establishing an improved seeded bermudagrass field. Newer varieties are often blended and sold under different names, so evaluate the mixture before planting. It is recommended to seed when the soil temperature is 65°F or higher at a 4-inch depth (usually around the first of May in North Carolina). Waiting for soil to be warm should improve bermudagrass seedling vigor and disease resistance. Seeded bermudagrass should be established into a well-packed, clean-tilled seedbed. Prepare the ground as soon as possible in the spring to allow the soil to settle. Use glyphosate or paraquat to create a weed-free seedbed and do not disturb after spraying. Seed can be broadcast and cultipacked into a firm seedbed. Plantings can also be done using a no-till drill. Seeding depth must be controlled to make sure seed is not deeper than 1/4 inch.

**President's
Address****Bermudagrass Establishment (Continued)**

Sprigging. Sprigs are vegetative plant parts containing stolons, crown buds, and rhizomes/runners dug from an established field. Dormant sprigs (no green leaves) are more desirable than non-dormant sprigs (with green leaves). It is recommended to plant certified sprigs to avoid planting common bermudagrass, other unwanted grass species, or noxious broadleaf weeds along with the desired hybrid variety. Certified sprig sources can be found at www.nccrop.com. There are two methods for sprigging bermudagrass: dormant and spring sprigging. Dormant sprigging occurs in the winter (February to early March) when the plants have not yet begun to grow and allows for quicker coverage. Sprigging in mid- to late-spring (April to June) can be successful if moisture is adequate.

Sprigs may be planted in a number of ways. Plant hybrid bermudagrass sprigs into a moist, clean-tilled, firm seedbed at a rate of 40 to 60 bushels of sprigs per acre. Regardless of establishment method, it is very important to firm the soil around the sprig to maintain sprig-soil contact, retain soil moisture, and improve sprig survival. Commercial sprigging machines generally offer the best results. The sprigger machine cuts a shallow furrow, drops the sprigs 2 to 3 inches deep, and firms the soil over the sprigs with press wheels. Sprigs can be broadcast onto the soil surface with a manure spreader or by hand. Press the sprigs into the soil using a disk with its blades set to cover lightly. Following the disk, firm the soil around the sprigs with a cultipacker. Cultipacking after sprigs are planted helps root-soil contact and leaves a smooth surface that is less prone to erosion in the event of heavy rains after planting. The sprigs should not be covered with more than about 1 to 3 inches of soil. Sprigs that are covered too deeply may not survive. Sprigs should be planted as soon as possible after digging to maintain quality.

A group of Extension Agents have updated the publication [Bermudagrass Production in North Carolina](#) and it should be finished very soon. You can contact your Extension Agent for more information on establishing bermudagrass on your farm.



NC FORAGE & GRASSLAND COUNCIL

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UPCOMING FORAGE AND GRASSLAND EVENTS

June 18: Native Grass Workshop, Mount Ulla, NC

The NCFGC sponsors local forage events BUT hands needed to help the NCFGC !

Get involved and help the NCFGC promote grasslands, open space and profitable forage management! Contact the NCFGC for sponsorship of your forage event or volunteer to help with the NCFGC events! Contact Johnny Rogers or Ronnie Holman.