

► **Right:** A set of Angus heifers enjoys high-quality pearl millet while permanent pastures produce low-quality forage.

► **Below:** The BMR trait indicates low lignin and better digestibility in summer annuals.



Plant Summer Annuals for High-Value Hay, Grazing

Fast-growing forages boost hot weather weight gains.

Story & photos by **Boyd Kidwell**

When Angus breeder Crandall Fountain of Chinquapin, N.C., needs high-quality forage for fast-growing calves, he plants summer annuals. In mid-summer, Fountain has plenty of grass growing in his permanent pastures, but during hot weather the nutritional quality of mature grass is fairly low. His brood cows are dry at that time and can get by on the forage available, but his weaned calves require better nutrition to reach their target weights.

In early May, Fountain disks up a winter annual crop of rye and plants 5 acres of the summer annual pearl millet. He had previously overseeded his permanent

pastures with rye in the fall to provide high-quality grazing for nursing cows.

“Our calving season is geared to our forage production so we can give high-quality forage to cows nursing calves. As rye plays out in May, we wean the calves and plant pearl millet to produce high-quality forage for the growing calves during the summer months,” Fountain says. “The Coastal Bermuda grass pastures provide low-quality forage, but we use Coastal because it grows well on sandy soils and the nutrition is adequate for dry cows.”

In 2009, the cost for pearl millet seed and fuel for planting was \$22 per acre. Poultry litter from a neighbor’s operation applied at agronomic rates provides the fertilizer.

After weaning in May, Fountain preconditions his calves, and in early June he sends fast-growing animals (bulls, steers and replacement heifers) into a controlled-grazing system on the pearl millet. The 5 acres of summer annual forage is divided into three grazing paddocks by single-wire electric fences, and the

stocking rate is four to five head per acre.

Based on the greatest need for high-quality forage, Fountain provides access for animals to one of the grazing paddocks. The calves also have access to a wooded area for shade during the hot days of summer and receive supplemental feeds of commodity pellets if needed.

Fountain’s calves start grazing the pearl millet 30 days after planting and graze rotationally into September. As the growth of pearl millet slows, Fountain disks the grazing area and plants a winter annual crop of rye.

High-quality hay or grazing

To provide high-quality hay and warm-season grazing, Mitchell Scheer plants 25 acres to a brown midrib (BMR) sorghum-Sudan grass hybrid on Blue Q Ranch of Troy, N.C. In 2009, Scheer no-tilled the BMR sorghum-Sudan grass and harvested 370 round bales of high-moisture baleage [1,500-pound (lb.) bales] for the ranch’s winter feed supply. After two cuttings for baleage, Scheer turned in 80 Angus steers to graze the regrowth through September.

“I was very impressed with how well the steers did grazing the BMR sorghum/Sudan. The steers gained 1.7 to over 2 pounds (lb.) a day during the 60-day grazing period,” the Blue Q Ranch manager says.



► Crandall Fountain gears his grazing program around summer annuals and overseeding pastures for winter forage.

PHOTO BY CHRIS TEUTSCH

The BMR trait is a key to digestibility with sorghum-Sudan grass varieties. BMR indicates lower lignin content in the plants' cell walls. Lignin is a fibrous component of some plants that animals can't easily digest. Because of danger from poisoning by prussic acid, animals should not graze sorghum-Sudan grass after frost.

In October, Scheer plants the 25 acres with a combination of triticale-rye as a winter annual crop. He harvests the triticale-rye as high-moisture baleage in late spring before planting the BMR sorghum-Sudan grass. By double-cropping the 25 acres, Scheer harvests 500 bales of high-moisture baleage to provide winter feed for 700 Angus and crossbred cows at Blue Q Ranch.

To formulate a total mixed ration (TMR) for winter feeding, Scheer mixes the baleage with round bales of fescue hay, cottonseed hulls, a commodity feed (hominy), dried distillers' grain (DDG) and a vitamin/mineral pack in a vertical mixer. Based on nutritional requirements, Scheer provides each group of animals the correct nutrition at the lowest winter feed cost.

Fortunately, producers have several choices of summer annuals that provide high-quality hay and grazing. Although there are costs associated with planting summer annuals, the high-quality grazing can pay off for growing calves. Depending on the summer annual, producers can expect gains of 1.34 to 2.25 lb. per day, according to Virginia Extension Forage Specialist Chris Teutsch.

Forage roundup

Here's a roundup of the summer annuals for hay and grazing:

► **BMR sorghum-Sudan grass** produces excellent forage for harvest of high-moisture baleage and for grazing. BMR sorghum-Sudan grass hybrids can tolerate a cooler soil temperature and can be planted earlier than pearl millet. Sorghum-Sudan grass produces excellent tonnage and the brown midrib (BMR) trait indicates reduced stem lignin content for improved digestibility compared to standard sorghum-Sudan grass hybrids.

Because sorghum-Sudan grass may release prussic acid (cyanide) after a frost, the grazing period may not be as late as the window for pearl millet. Sorghum-Sudan grass is not recommended for grazing by horses. BMR sorghum-Sudan grass and pearl millet are both tall, upright grasses that grow quickly in hot weather. With a little rain or irrigation and adequate fertilizer, both grasses will grow several inches a day and produce forage with excellent digestibility.

► **Pearl millet** has a finer stem and doesn't produce quite the tonnage of sorghum-Sudan grass. However, pearl millet doesn't

contain the prussic acid that can sometimes break down and poison cattle grazing sorghum-Sudan grass hybrids. Pearl millet can be safely grazed at any stage of growth and during droughts that increase the risk associated with prussic acid when grazing sorghum-Sudan grass. Pearl millet should be grazed starting when plants are 15 to 18 inches (in.) tall at a stocking rate that leaves about 10 in. of plant stubble when animals are removed. Pearl millet grows well in sandy soils.

► **Crabgrass** is often overlooked as a warm-season species that provides high-quality summer grazing. Research in Oklahoma indicates yield and animal performance are excellent on this forage, and crabgrass makes an outstanding summer forage for stockers and growing calves. Crabgrass is considered a summer annual, but with management crabgrass easily reseeds to provide a new stand the following summer.

New varieties have been selected for high yields from native crabgrass populations. Red River was the initial crabgrass variety developed by R.L. Dalrymple while he was at The Samuel Roberts Noble Foundation in Ardmore, Okla. Quick-N-Big is a new variety that germinates quickly, grows rapidly and produces taller plants. If managed properly, Quick-N-Big grows 2-3 in. a day once tillers are formed.

► **Teff** is a warm-season grass that has solid potential as a livestock forage. Teff originated in Africa and grows quickly in hot weather, but it is sensitive to cold temperatures. Although teff provides high-

quality grazing for livestock, the plants have shallow root systems and grazing cattle can damage stands. Beef producers are usually happier with teff as a hay crop, and teff is gaining a positive reputation for producing high-quality horse hay.

"Teff could possibly find a niche as a summer annual for production of horse hay," Teutsch says.

► **Sudan grass** is another summer annual that now carries the BMR trait. Pro-Max Low-Lignin Hybrid Sudan grass is the first true Sudan grass with the BMR trait. Pro-Max Plus has Pasja Hybrid Brassica added for additional grazing quality in the northern half of the U.S. Pro-Max Plus should not be used for hay and neither Pro-Max Sudan grasses should be used for horses.

Russell Hackley of Clarkson, Ky., has successfully used Pro-Max as a smother crop as he renovates a pasture from fungus-infected fescue to a new stand of non-toxic endophyte-infected fescue (MaxQ.) After the fungus-infected stand of fescue slowed its growth in May, Hackley sprayed a herbicide and planted hybrid Sudan grass for summer grazing. In September, he killed the smother crop and replanted with MaxQ fescue.

"The Pro-Max Sudan grass produces well in hot weather, and cattle eat it well. Considering the cost, I would use a summer annual primarily when I'm forced to reseed a permanent pasture," says Hackley, who manages a commercial Angus stocker operation.



► BMR sorghum-Sudan grass produces heavy tonnage and highly digestible forage in hot weather.