

Performance Of Seed-Planted Bermudagrasses

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Excellent sprig-planted hybrid bermudagrass varieties differing in cold hardiness are available to fit a range of climates. Planting procedures, herbicides, and experienced contractors with sprigging machines are available to do a dependable job. However, many livestock producers are considering seed-planted bermudagrasses because of the lower establishment cost. Results of our research over the last four years may be useful in making a decision on what to plant.

Our experiments

In April 1994 we planted four seed-type giant bermuda varieties (Cheyenne, KF CD194, Tierra Verde, and Giant) and two sprig-type hybrid varieties (Coastal and Russell) in trials at the Northwest Branch Station near Calhoun, the Plant Sciences Farm near Athens, and the Central Georgia Branch Station near Eatonton. All were planted on clay or loam soils. Herbicides were not used on any of the varieties since they would kill small bermudagrass seedlings. Consequently, crabgrass problems were serious and resulted in very low bermudagrass production the establishment year which was not entered into the four-year yield averages. Crabgrass competition was so severe at Eatonton, in spite of frequent mowing, that the bermudagrass seedlings did not survive the following winter. Coastal stands were poor at all locations and had to be replanted in summer to obtain stands for the following year. Phosphorus and potassium were applied according to soil test results and nitrogen was applied at 75 lb N/acre in late April and after each harvest except the final autumn cut. With adequate rainfall in 1995, five cuts were made but drought during three years resulted in only three or four cuts. Forage was analyzed for crude protein, neutral detergent fiber (NDF, negatively correlated with intake), and acid detergent fiber (ADF, negatively correlated with dry matter digestibility). Thus, lower NDF and ADF values indicate less fiber and higher nutritive quality.

Experimental results

Four-year average (1995-1998) dry



forage yields at Calhoun showed similar production for Coastal, Russell, Cheyenne, and KF CD194 (an experimental variety not being marketed) (see table). At Athens, Russell was more productive than Coastal, KF CD194, and Tierra Verde with Cheyenne similar to all of them. Yields of Giant were much lower than the others at both locations, a result of partial winter kill each year and loss of production during the time needed for stands to recover. The seed-type varieties, except for Giant, generally maintained excellent stands throughout the four years. Some common bermudagrass encroach-

ment occurred with Coastal and Russell. Cold hardiness and stand persistence were excellent. Forage nutritive quality is similar to that of Coastal bermudagrass. It should be kept in mind that feeding quality of bermudagrass hay is much more dependent on nitrogen fertilization and maturity at harvest than the variety. The main problem with a seed-type bermudagrass variety is the possibility of stand loss from volunteer crabgrass and other weedy grass competition during establishment as no herbicide can be used.

Recommendation

Cheyenne bermudagrass appears to be well adapted to central and northern Georgia. It is not yet known if this variety will perform as well in the Coastal Plain region of the state.

Cheyenne bermudagrass seed is produced by Pennington Seed and will be available from seed dealers for planting during spring 1999. Areas to be selected should be clean tilled and free of common bermudagrass. Fertilizer and lime should

Four-year average dry forage yields, stand, crude protein (CP), neutral detergent fiber (NDF), and acid detergent fiber (ADF) of bermudagrass varieties at Athens and Calhoun.

Variety	Dry forage yield, tons/acre		% of original stand in 1998		CP%	NDF%	ADF%
	Athens	Calhoun	Athens	Calhoun			
Russell	6.09	5.27	91	73	10.5	68.7	31.9
Cheyenne	5.66	5.07	100	100	11.2	66.7	28.4
Coastal	5.20	5.36	93	89	10.8	68.2	29.7
KF CD194	5.02	4.92	100	100	11.6	66.9	28.0
Tierra Verde	4.90	4.50	100	100	11.0	64.8	30.0
Giant	3.31	3.71	43	66	11.1	65.3	29.4

ment occurred with Coastal and Russell.

Nutritive quality of forage from all harvests at both locations each year were similar and are averaged for each bermudagrass variety. Crude protein and NDF values were similar for all varieties. The ADF values were similar for all varieties except Russell which was slightly higher, suggesting that dry matter digestibility of this variety might be somewhat lower than the others.

Conclusions

Forage yields of Cheyenne and KF CD194 seed-type bermudagrasses were similar to sprig-planted Coastal bermu-

be applied according to soil test results. A cultipack seeder is ideal for planting. If only a cultipacker is available, then firm the ground with it, broadcast the seed, and cultipack again to provide a firm seedbed. Since bermudagrass seed are very small, seed are coated to make it about 30 to 40% heavier. About 10 lb/acre of the coated seed should be adequate. Planting should be done in April. Volunteer crabgrass competition must be mowed frequently or the bermudagrass will be shaded out and stands lost. Crabgrass can easily be controlled the second year by applying a preemergence herbicide in early spring.