Seeded Bermudagrasses

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Bermudagrass is the most widely grown warm-season perennial grass in the southeastern US. Its popularity is due to adaptability to a wide range of soil types, drought tolerance, and persistence under intensive grazing (Burton and Hanna, 1995). The most productive varieties have been hybrids that produce little viable seed and must be established vegetatively by sprigs (portions of shoot, crown, roots, rhizomes, and stolons) or with some varieties, tops (6 to 8 week old topgrowth). Recommended planting rate is from 20 to 40 bu/acre. A bushel equals 1.25 cu ft and contains about 100 sprigs. Establishment costs including land preparation, sprigs or tops, planting, fertilizer, and weed control range from $125 to $200 per acre depending on variety. Tifton 85 has become the new standard because of its high productivity and nutritive value (Hill et al., 2001).

There has been a great deal of interest in establishing bermudagrasses from seed as opposed to sprigs. In addition to being less expensive and not as burdensome as sprigging, seeded bermudagrasses can be used on small acreages that are not economical to sprig and on steep slopes and cut-over timberland where good seedbed preparation necessary for sprigging is not feasible. Most seeded bermudagrasses on the market are blends that contain giant, usually common, and sometimes a third pure line or variety. Components of some of the blends on the market are reported in Table 1. Common bermudagrass is well adapted to all soils. Because it is a good seed producer, common bermudagrass seed is less expensive than other seeded bermudagrasses. Giant is used in blends because it has rapid establishment and good first year growth. However, it will not persist for more than 2 or 3 years in the eastern half of Texas. As giant bermudagrass goes out, the other

bermudagrasses in the mixture fill in. Giant has persisted in the western half of Texas under irrigation (Marsalis et al., 2003).

Recommended seeding rates for bermudagrass are from 5 to 10 lb/acre. Both hulled and unhulled seed of common and giant are available. Hulled bermudagrass has the outer seed brackets removed and germinates quicker than unhulled seed. A pound of hulled bermudagrass seed contains about two million seed and a pound of unhulled bermudagrass seed contains 1.5 million seed (Wheeler and Hill, 1961). Some of the bermudagrass seed is coated and some is not. A clay material containing some plant nutrients is coated on the seed increasing seed size and doubling the weight. Applying the clay coating doubles the seed weight so a pound of coated seed contains only about half the seed that a pound of uncoated seed does. The price per pound of coated and uncoated seed is similar.

A 5-year study at the TAMU Agricultural Research and Extension Center at Overton compared sprigged bermudagrasses (Tifton 85 and Coastal), seeded bermudagrasses, and bahiagrasses. The first 2 years were very dry resulting in low yields (Table 2). Some of the seeded blends were as productive as Coastal but not as productive as Tifton 85 bermudagrass (Evers and Parsons, 2002). Pensacola and Tifton 9 bahiagrass were the least productive. In the third year common, giant, and Wrangler bermudagrass and kikuyugrass were added to the study. The first year (1999) production of giant was twice that of common, but by the third year (2001) the giant stand had thinned and common produced twice as much as giant. Because these last four entries were only grown for the last 3 years, their long term averages were not included in the statistical analysis of 5 year averages.

Because of the strong producer interest in seeded bermudagrasses, a joint project between the Texas Agricultural Experiment Station at Overton and Seeds West, Inc. at Maricopa, Arizona was initiated in 2002 to evaluate 166 half-sib families of seeded bermudagrasses and compare them to Coastal and Tifton 85 bermudagrass. Tifton 85 was the most productive variety both years (Table 3). Coastal produced about 1 ton/acre less forage than Tifton 85, which is typical.

Seeded entries of common, giant, and Cheyenne produced yields similar to Coastal as in the previous study. The range in production of the 166 half-sib families is also listed. Each year there were from 25 to 35 entries that were as productive as Tifton 85. There were 14 entries with forage production similar to Tifton 85 both years. This study will continue through 2004.

Under northeast Texas conditions, yields of most seeded bermudagrasses are similar to Coastal bermudagrass. If planted on a deep sandy soil, the seeded bermudagrasses may not be as drought tolerant as Coastal because of a shallower root system. It appears that a seeded bermudagrass can be developed that is as productive as Tifton 85. However Tifton 85 has exceptionally high nutritive value and drought tolerance. The nutritive value and drought tolerance of seeded bermudagrasses has not been determined.

Literature Cited:

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Table 1. Blends of seeded bermudagrasses.

Trade name	Components
Pasto Rico	common, giant
Texas Tough Plus	common, giant, Majestic
Pasture Supreme	common, giant
Tierra Verde	common, giant
Ranchero Frio	Cheyenne, Mohawk, giant
Sungrazer Plus	KF 194, CD90160, giant

Table 2. Warm-season perennial grass yields from 1997 through 2001.

	1997	1998	1999	2000	2001	Average
Entry	----------lb dry matter/acre----------					
Tifton 85 bermuda[1]	5044 a[2]	8064 a	12915 a	12032 a	15680 a	10747 a
CD 90160 bermuda	2737 b	3550 d	9696 bc	10347 b	13395 a-c	7945 b
Texas Tough bermuda	2480 bc	5262 b	11749 ab	7956 e-g	10993 c,d	7688 b
Ranchero Frio bermuda	1943 cd	2912 de	8984 c	9991 bc	12428 b-d	7251 b,c
Terra Verde bermuda	2085 cd	4885 bc	9054 c	8318 d-f	11748 b-d	7218 b,c
Coastal bermuda[1]	1611 d	3739 cd	8507 cd	9440 b-d	11549 b-d	6969 b,c
Cheyenne bermuda	2408 bc	3430 de	6640 d-f	8928 c-e	13431 a,b	6967 b,c
KF CD 104 bermuda	1914 cd	3664 cd	7407 c-e	7525 fg	10075 d,e	6117 c
Pensacola bahia	583 e	2167 e	4771 f	6809 gh	7682 e,f	4402 d
Tifton 9 bahia	767 e	2203 e	5470 ef	5967 h	7398 f	4361 d
Common bermuda[3]			383	7445 fg	11352 b-d	6393
Giant bermuda[3]			836	7356 fg	6643 f	4945
Wrangler bermuda[3]			188	6744 gh	7550 f	4827
Kikuyugrass[3]			0	7620 e-g	5539 f	4386

[1]Bermudagrass varieties established from sprigs.
[2]Yields within a column followed by the same letter are not significantly different at the 0.05 level, Fisher's Protected LSD Test.
[3]Entries planted in 1999. All other entries planted in 1997.

Table 3. Forage yields of 166 half-sib families and several varieties during 2002 and 2003 at Overton, Texas.

Entry	2002	2003
	----------lb DM/acre----------	
Coastal	6383	11618
Tifton 85	8878	13810
Common	7557	10624
Giant	5675	9062
Cheyenne	6370	10438
Wrangler	4966	10123
Experimental lines	3960 – 10279	5119 - 15619