

Selection of a Grass Variety

David Bade*

Selection of a grass variety is an important decision that will either bring years of satisfaction or will haunt you for many years to come. Planting a grass is a long term project. Once the time and expense is invested in establishing a perennial grass, it is hard to undo an unwise decision and start over with a different variety.

In selecting a variety realize that many grasses are available for consideration but there is no miracle grass - one which will fulfill all the objectives you have in mind for your pasture. All varieties have advantages and disadvantages which must be considered.

The variety of grass which is used should provide the **QUANTITY** and **QUALITY** of forage necessary to meet livestock's nutritional needs throughout the year and from year to year. Notice that equal emphasis is placed on the quality of the forage as the quantity or yield. For production to continue year after year, the grass must maintain itself and grow under your management and stocking rates.

Grass Variety Selection

Adaptation to Soil and Climate

Soil factors to consider are soil type (sand, loam or clay), soil drainage (external and internal), soil pH, soil moisture holding capacity and soil problems (salt). Each grass variety has specific soil preferences. In general, the heavy clay soils with poor drainage are suited to common bermuda grass, dallisgrass, switchgrass, bahiagrass and improved bluestem. The loams to sandy loams are suited to hybrid bermudagrasses, johnsongrass, kleingrass, switchgrass, buffelgrass and bahiagrass. The droughty sandy soils are more adapted to hybrid bermudagrasses with strong rhizome development or buffelgrass (South Texas). The climate will dictate selection of grasses which survive the normal winter periods or droughts. For example, common buffelgrass will not grow in northern areas of Districts 11 and 14 due to its lack of cold tolerance.

Production of High Quality Forage

Ideally a grass variety should produce adequate forage over a long growing season. Total yield

information and seasonal production on various soil types is helpful in considering varieties. In general, most of the production from our grasses occurs in the spring of the year, drops in the summer when rains are limiting and increases to a smaller extent in the fall. Quality of the forage at various times in the growing period should be adequate to meet the requirements of the animals (beef cows, horses, dairy cows, etc.). Quality information given for many grasses are percent crude protein, energy content and percent phosphorus. Although animal performance would be the best measure of a grass variety, only limited research results measure animal performance differences among grasses.

Use of the Grass

The grass variety must be appropriate for the desired uses. Uses include grazing, close grazing, hay and/or turf. Some grasses are more suited to grazing than hay due to their growth pattern. Grasses can vary greatly as the ability to withstand long-term close grazing. A small producer with a high stocking rate on heavy, low soils is interested in a grass which will produce forage and a good turf for animal footing. Sod type grasses like bahia and bermudagrass produce good turf and can be grazed close for long periods of time.

Does the Grass Fit Your Management? (Or Mismanagement?)

Certain grasses perform very well under adequate fertilization, but will not produce and will die when fertilization is skipped. Switchgrass, johnsongrass and indiagrass will do well in rotational grazing, but will quickly die out when grazed continuously. The future management of the grass should be considered in grass selection. Information on fertilizer responses, animal preference and ability to withstand close grazing or cutting are available for many of the grass varieties.

Other Factors

Other factors to consider are potential insect and disease resistance, tolerance to prescribed burning and tolerance to herbicide usage.

*Extension forage specialist, The Texas A&M University System.

Cost of Establishment and Maintenance

Cost of establishment is high, yet should not play a big role in grass selection. Remember these costs are prorated over many years of production, so establishment cost per year is low compared to annual crops. Production cost should be considered so required yearly cash costs will be known. Budgets are available from county Extension agents.

Buffelgrass - Common, Higgins, Nueces, Llano

Dallisgrass - Common

Kleingrass - Klein 75, Verde

Indiangrass - Lometa

Johnsongrass

Switchgrass - Alamo

Grass Varieties for District 11 and the Upper Part of District 14

The following warm season grass varieties are being used successfully in Districts 11 and 14:

Bahiagrass - Pensacola

Bermudagrasses - Common, Coastal, Alicia, Brazos, Tifton 44, Sheffield, other hybrids (callie, Coast-cross 1)

Bluestem grasses - Gordo, Medio, Angleton, Pretoria 90

Advantages and disadvantages of each grass follow. Additional information can be obtained from your county Extension agent, Soil Conservation Service and successful forage producers in the county. Obtain as much production information as possible when deciding on a grass variety. Beware of new "miracle grasses" which are advertised without adequate, unbiased performance data. Remember just because a grass variety is new does not mean it is better than those which are already doing a good job. These grasses should be tried on a small scale under demonstration comparisons to prove their merit before planting on a large acreage.

BERMUDAGRASS COMPARISONS

Variety	Rapidity of Cover	Rhizome Development	Cold Tolerance	Density	Comparable Forage Yield	Comparable Forage Quality	Comparable Animal Performance
Coastal	Slow	Medium	Good	Good	100	100	100
Alicia	Rapid	Medium	Low	Fair	102	95	
Coast-Cross 1	Rapid	None	Low	Low	92	107	
Midland	Medium	Limited	High	Fair	93	100	
Callie	Rapid	Limited	Low	Low	81	112	111
Tifton 44	Slow	Medium	Good	Fair	35	109	108
Brazos	Slow	Medium	High	Good	92	110	124
Common		Medium	Varies	Good	78	92	

FORAGE PRODUCTION (TONS/ACRE)

	McGregor	Angleton	Overton	College Station
Years in Texas	1	2	3	
Coastal	8.9	4.2	5.8	8.2
Coast-Cross 1	7.6		4.7	7.5
Alicia	8.6	4.5	5.5	
Brazos	8.9	4.3	4.8	
Callie		3.7	3.7	7.4
Tifton 44		4.5		7.0

Source: Research Monogram 6, TAES; Forage Research in Texas.

HYBRID BERMUDAGRASSES

Advantages

1. Sod type grass.
2. Excellent yield potential.
3. Good drought tolerance.
4. Adapted to wide range soils.
5. Good hay producer.
6. Can stand mismanagement.

Disadvantages

1. Low quality in midsummer.
2. High fertilizer requirement.

Varieties

- Common and NK 37 - Seed types.
- Coastal - Developed Georgia.
- Coast-Cross #1 - High quality
 - Cross Coastal with bermuda from Kenya by Georgia.
 - Lacks cold tolerance.

Alicia and Sheffield - Similar yields as Coastal; same or lower quality.

Callie - Mississippi State University.

- Fast growth and quality.
- Lacks cold tolerance, leaf diseases.

Midland - Cold tolerant variety.

Tifton 44 - Released 1978. Georgia.

- Higher quality. Lower yield in South Texas.

Brazos - Release 1983. Released by Oklahoma, Texas and Louisiana.

- Slower to cover than Coastal.
- Higher quality, equal yield than Coastal.
- 20 to 25% increase in animal performance.

BAHIAGRASS

Advantages

1. Dense sod former.
2. Very competitive when established.
3. Shade tolerant.
4. Adapted low fertility soils.
5. Long growing season.
6. Few disease and insect problems.
7. Seeds very hard (spreads by grazing).

Disadvantages

1. Weak seedlings.
2. Limited drought tolerance.
3. Short growth - hay?
4. Lower forage and beef yields than Coastal.
5. Ergot poisoning.
6. Hard to maintain legumes in stand.

Varieties

- Common Tifhi 1 and Tifhi 2
- Pensacola Paraguay
- Argentine

BLUESTEM GRASSES

Advantages

1. Adapted to clay soils or sandy soils with shallow clay layer.
2. Production in late summer or fall.
3. Suited for both grazing and hay.
4. Medio bluestem has fair drought tolerance.
5. Produces well under minimum fertility.

Disadvantages

1. Does not begin growth until late spring or early summer.
2. Low potential for high quality hay.
3. Lack of animal performance data.

4. Pretoria 90 lacks seed vigor.

*Pretoria 90 does begin growth in early spring.

Varieties

- Gordo Angleton
- Medio Pretoria 90

BUFFELGRASS

Advantages

1. Excellent drought tolerance.
2. Recovers quickly from summer rain or grazing.
3. Palatable.
4. Long growing season.
5. Easy to establish.

Disadvantages

1. Lacks cold tolerance.
2. Becomes stemmy when mature.

Varieties

- Common
- Higgins - Higher yield and larger seed crop; Released 1967.
- Nueces and Llano - Higher forage potential; Nueces has higher digestibility.
 - Improved cold tolerance.
 - Denser stands. Nueces has longer rhizomes.

	Beeville 3 Year Average	College Station 4 Year Average
Llano	5880	9040
Nueces	5570	7900
Higgins	4440	7140
Common	4430	

KLEINGRASS

Advantages

1. Very palatable.
2. Drought tolerance.
3. Long growing season.
4. Maintains quality after frost.
5. Excellent hay.
6. Moderate fertility requirement.
7. Good yield under moderate production conditions.
8. Can withstand close grazing.
9. Quick recovery.

Disadvantages

1. Lower yield potential than Coastal.
2. Establishment difficulty.
3. Swell-head in sheep.
4. Seed shattering.
5. Small seed.

Varieties

Kleingrass-75, Released in 1968.

Verde - Released in 1982. Advantage is larger seed size, increased seedling vigor and wildlife food. No advantages in yield or quality.

	3 Years Average Yield (lbs./ acre)	Percent Digestibility
Kleingrass-75	10470	57%
Verde	9730	58%

Source: Hussey and Holt, Forage Research in Texas, 1982.

DALLISGRASS

Advantages

1. Adapted to rich black clay soils and bottomlands in high rainfall areas.
2. Long growing season - one of the first grasses for spring greenup and one of the last to go dormant in the fall.
3. Fairly uniform growth throughout the season.
4. Highly palatable.
5. Suited for growth in mixtures (i.e.: common bermuda-grass - S-1 clover - Dallisgrass).
6. Tolerates wet conditions.
7. Can withstand close grazing.
8. Higher quality than Common, Coastal, Alicia or Bahia-grass.
9. Good drought tolerance on heavy soils.

Disadvantages

1. Low forage production per acre.
2. Low animal production per acre.
3. Ergot infections of seedheads can cause cattle to abort. Seedhead ergot is controlled by mowing off seedheads prior to grazing.
4. Poor seed quality.
5. Growth pattern not well suited for hay production.
6. Lacks production potential under high fertilization.

ALAMO SWITCHGRASS

Description

1. Native, warm season bunch grass 3 to 6 feet tall.
2. Origin: George West, Texas
3. Wide leaves, robust growth.
4. Produces 2 to 3 times forage as 'Blackwell' Switchgrass.
5. Released by TAES and SCS in 1979.

Advantages

1. High percentage of leaf.
2. Palatable.
3. Excellent grazing.
4. Yields well under moderate fertility.

Disadvantages

1. Cannot withstand close, continuous grazing.
2. Lower yield potential.
3. No animal performance data.

LOMETA INDIANGRASS

Description

1. Native, warm season bunchgrass 3 to 8 feet tall.
2. Origin: Lometa, Texas (Lampasas).
3. A late maturing, drought tolerant grass.
4. Excellent regrowth.
5. Long growing season.
6. Cannot withstand close continuous grazing.

Educational programs conducted by the Texas Agricultural Extension Service serve people of all ages regardless of socioeconomic level, race, color, sex, religion, handicap or national origin.

Issued in furtherance of Cooperative Extension Work in Agriculture and Home Economics, Acts of Congress of May 8, 1914, as amended, and June 30, 1914, in cooperation with the United States Department of Agriculture. Zerle L. Carpenter, Director, Texas Agricultural Extension Service, The Texas A&M University System.

2M-2-92, Reprint

AGR