



# Texas Agricultural Extension Service

*People Helping People*

## Forage Species for Texas

Donald J. Dorsett\*

Forages provide the major portion of the beef animal's diet. Much of the forage can be provided by pastures, but often times these are poor in quality and quantity and it becomes necessary to provide other forms of roughages, primarily hay.

Good quality hay is an important element in providing effective and economical rations for livestock. The higher the quality of hay, the lower the quantity of concentrates required.

In view of the importance of hay in the feeding of livestock, it is unfortunate that hay has extreme variations in quality. This variation is not due to the kind or variety of hay being used, but to the extreme variation which can occur in the production. Quality of hay refers to the feeding or nutritive value and palatability of hay. The higher the quality of hay, the better the performance of the animals eating it. U.S. figures show that 86 percent of the hay produced is used on the producer's own farm; therefore, producers should be concerned with quality in the hay produced. Production practices which influence quality of hay include: choice of hay plants, establishment, fertilization, weed control, plant growth stage at harvest and curing.

Once hay is produced, several methods may be employed to determine the feeding value. Although none of these methods are fool-proof, they can certainly give good indications as to the quality of the hay. Of the methods utilized today, the most important are visual appraisal and chemical analysis (commonly referred to as "hay testing").

Visual estimates of forage quality are based on physical factors that research has shown influences hay quality and animal performance. Physical characteristics which may be used to evaluate hay include: maturity (stage of growth at harvest), texture (size of stem and pliability), leafiness, foreign materials, color and condition.

Visual appraisal of forage is important, but there are many influences on feed value. Forage tests for protein, fiber and mineral content are available. A forage test provides information for figuring feed rations or determining the suitability of a forage program for livestock. A forage test eliminates the guesswork from a livestock feeding program.

By utilizing visual appraisal in combination with a forage analysis, a forage user can be confident that the livestock are receiving adequate nutrition.

PLANT	SOIL ADAPTATION	PLANTING DATE	REMARKS
<b>Warm Season Perennial Forages</b>			
Bahia Pensacola	Best on sands to clay east of the Colorado River.	10 to 15 lbs. seed per acre. Plant in spring or early fall.	Slow to establish but makes thick sod when well established.
Bermuda Common	Best in sandy loams & loams with fair to good drainage.	2 to 4 lbs. hulled 20 bu. of sprigs per acre. Spring plant.	Usually comes in naturally in sandy soils with improved fertility.
Bermuda, Improved Coastal Callie Alicia Tifton-44 Brazos Many Others	Best on sandy loams and loams with fair to good drainage.	All vegetative propagated by planting sprigs at 18 to 20 bushels per acre in late winter or spring. Best to plant during dormant stage.	High production potential and carrying capacity with good management and fertility.

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PLANT	SOIL ADAPTATION	PLANTING DATE	REMARKS
Bluestem, Intro. Angleton Gordo Medio King Ranch Cancasium Kleburg Pretoria 90	Wide adaption of soils. Best on clays to loams. Angleton, Gordo, Medio, and Pretoria 90 are limited in area due to winterkill.	1 to 2 lbs. PLS acre depending on selection. Spring plant.	Marginal quality. Production depends upon selection.
Buffelgrass Common Higgins Nueces Llano	Wide adaption on permeable soils in South Texas. Best on sandy loams.	1 to 2 lbs. PLS in rows 2 to 4 lbs. broadcast on well prepared seedbed. On root plowed ground, use 6 to 8 lbs. PLS. Plant shallow. Spring plant.	High yield potential. Drought resistant.
Dallisgrass	Sandy loams to clays.	3 to 4 lbs. pure live seed. Shallow plant in late winter or early spring.	Seed quality usually low. Ergot infested seedheads may be toxic so should be mowed.
Johnsongrass	Sandy loams to clays.	10 lbs. per acre in rows or 25 lbs. per acre broadcast. Drill or cover 1 inch.	Requires careful management to maintain a stand. Has prussic acid potential.
Kleingrass Selection 75 Verde	Sandy loams to clays.	In rows, 1 lb. PLS Broadcast 2 lbs. per acre Spring plant. Shallow plant and roll seedbed.	Central and West Texas. Good quality forage. Seedling growth slow. Association of liver damage in horses on pure Kleingrass diet.
Lovegrass, Weeping Common Ermelo Morpa	Sands and sandy loams Well drained soils.	In rows, 1 lb. per acre. Broadcast 2 lbs. per acre. Spring plant. Shallow plant and roll seed bed.	Best utilized in early spring and fall. Older growth low in quality and palatability.
Native Grasses	All soil types.	Spring planted. Commonly planted mixture are Blue-stem mixtures and/or side-oats grams.	Low production. Fair quality

#### Warm Season Annual Forages

Sudans Sorghums Sudan- Sorghum X's	Sandy-loams to clays.		Not recommended for horse pastures. Cystitis syndrome. Cured hay may have laxative effect. Nitrate buildup possible.
Milletts	Sandy-sandy loams.		Both grazing and hay may have laxative effect on horses. Nitrate buildup possible.

PLANT	SOIL ADAPTATION	PLANTING DATE	REMARKS
<b>Cool Season Perennial Forages</b>			
Fescue	Loams to clays well adapted to bottomlands and wet soils.	Plant 15 lbs. per acre. Broadcast or drilled. Plant shallow and roll seedbed.	Fescue toxicity. Plant only fungus free seed.
Tall Wheatgrass Jose Largo Others	Loams to clays. West Texas and the High Plains.	Fall Plant 8 to 12 pounds per acre. Plant shallow.	Use in pure stands. High quality grazing.
<b>Cool Season Annual Forages</b>			
Barley Oats Rye Wheat Triticale		On prepared seedbed plant 100 lbs. per acre in early fall (Sept.) For sodseeding, remove stubble and plant 120 lbs. per acre in late September or early October.	Many varieties of each species. Always high quality until seedhead forms.
Ryegrass	Sandy loams to clays. Does well on wet soils.	Plant 15-20 lbs. per acre in September or early October.	Several varieties. Always high quality until seedhead forms.
<b>LEGUMES</b> <i>All legume seed must be inoculated prior to planting.</i>			
Alfalfa	Sandy-loams to well drained clays. Neutral to alkaline soils.	15 lbs. per acre. Fall planting preferred. Spring planting may have heavy weed problem.	Throughout Texas.
Arrowleaf	Well-drained sands to loams. Neutral pH.	6 lbs. per acre. scarified seed. 10 to 12 lbs. per acre of non-scarified seed in October.	Central and East Texas. Long spring and early summer growth period.
Crimson Clover	Sandy to sandy loams of East Texas pH of 6.5 to 7.5 desired.	15 to 20 lbs. per acre late September to October.	East Texas. Defer grazing during flowering for re-seeding.
Subter- anean Clover	Sandy loams to well drained clays.	12 lbs. per acre in late September to October.	Pasture only. Very good reseeding ability under constant grazing.
Sweet Clover	Loams to clay. Neutral to alkaline soils. Well drained.	12 to 15 lbs. per acre in late September to October or late February or March.	Throughout Texas.
Vetch	Well drained loams to clays.	25 lbs. per acre September to October.	Large seed. Planted with small grains to a large degree.
White Clover (& Ladino Clover)	Loams to clays.	3 lbs. per acre September to October.	Gulf Coast and bottomlands of East Texas.

# Texas A&M University Forage Testing Service Sampling and Mailing Instructions

For this service to be of greatest benefit to you, obtain samples according to the directions below so they will represent the forage sampled.

NOTE: Sample bags and all forms referred to are available from your county agricultural agent.

## Hay

It is best to obtain all samples of hay to be tested by using the Penn State or similar type forage sampler. (Check with your county agent for availability of a forage sampler or for information on other sampling methods.)

### Baled Hay:

Sample at least 12 bales at random from the same lot of hay by taking core samples from the end of the bales. The core sample's weight varies directly with the tightness of the bale. To obtain the desired quantity of sample, use one-half of full depth. Place the cores in a container and mix thoroughly before filling the sample mailing bag.

### Loose Long Hay and Chopped Hay:

Sample to the full depth of the core sampler from at least 12 random locations throughout the mow or stack. With the sampler in vertical position, take the core at the spot where the hay is slightly compressed by the weight of the person operating the sampler. Put the cores in a container and mix thoroughly before filling the sample mailing bag.

### Pasture Forage:

Follow instructions in Form D-652, *Procedure for Taking Pasture Forage Samples*.

### Pelleted or Wafered Forage:

Collect samples as random from several locations in the storage area, mix thoroughly and fill sample mailing bag. Break large pellets or wafers before mixing to obtain a representative sample.

## Silage

The Penn State or similar type forage sampler may be used to collect samples of silage. Equip the sampler with a stainless steel barrel to prevent corrosion damage when used in silage. Sample at least 12 random locations over all accessible areas of the silage. Collect the core samples in a container and mix thoroughly before filling the sample mailing bag.

Silage samples may be obtained by collecting a double handful of silage from at least 12 random locations over all accessible areas of the silage. Mix these thoroughly before the sample mailing bag is filled. When mechanical unloaders are used, collect about  $\frac{1}{2}$  bushel of silage as it is fed, mix thoroughly and fill sample bag. *Do not take a sample from the first 3 feet of an upright or from the very end or top of a horizontal silo.*

## Mailing

For each sample bag, fill in appropriate information on Form D-1116, *Forage Sample Information Form*, and mail the sample, D-1116, and a check or money order for appropriate fees to:

Extension Forage Testing Laboratory  
Soil and Crop Sciences Department  
Texas A&M University  
College Station, Texas 77843

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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.