



## Haygrazers and Canes for South Texas

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Livestock owners have strived to plan for the grazing of as much established forage as possible to minimize having to feed hay and to supplement with protein. With coastal bermudagrass, Klein, and buffelgrass as the pivotal grasses in South Texas, the use of temporary pastures has included small grains, millets, and various types of sudan and haygrazers. These tropical-derived grasses can be established in the spring and will offer extended and rapid growth for hay or grazing into the hot summer months when bermudagrass has turned dormant.

Haygrazers are described as crosses of forage types of sorghum, sorgo, and sudangrasses. Sudan hybrids are described as hybrids or crosses in which at least one parent is a sudan. The other parent may be a grain sorghum, a sweet sorgo, or a sudan. Sorghum X sudan and sorgo X sudan hybrids tend to have coarser stems and broader leaves than the true sudan X sudan hybrids. Common examples of sudan hybrids are Haygrazer, Trudan, Sweet Treat, Sweet Graze, Sudax, and many others. Sudan X sudan hybrids usually produce less than sorghum or sorgo X sudan crosses.

**The Need for Temporary Pastures.** As rainfall and soil moisture decline, coastal bermudagrass will remain green as long as moisture is being replenished from the subsoil, but it will not replace what is grazed with new growth. Since June and July are typically sparse months for rainfall, haygrazers usually grow so rapidly as to stockpile excellent grazing well into the summer months. If more haygrazer is produced than can be used, the field can be divided with a hotwire, and the ungrazed portion can be baled while it is in the boot stage.

**Forage Quality.** There are a number of canes, sudans, and haygrazers to choose from. Most seed companies offer a premium grade, a medium, and

a “workhorse” hybrid providing various levels of protein, sweetness, drought resistance, and chlorosis tolerance. All of these factors are important and should be considered in selecting seed for temporary pastures. Many selections may be equally suitable for hay, grazing, greenchop, ensilage, and set-aside acreage.

High tonnage that is not accompanied with a high leaf-to-stem ratio and nutritional value (protein and energy) is of lower value to livestock. Much of the haygrazers produced for sale in Texas is cut late (post boot stage/early heading), with tonnage having a greater priority than feeding value.

The highest-quality haygrazers are well fertilized, are produced on deep, well-drained soils for extended moisture supply, and are planted somewhat thicker to decrease stem diameter. The selection of premium-quality cultivars and seed could also affect production and quality through improved plant health, lower risk of prussic acid, and seed size. The HCN potential of sudangrass and sudangrass X sorghum hybrids differs with cultivar, stage of growth, level of N fertilization, and environmental conditions. The HCN potential of sudangrass X sorghum hybrids is greater than that of sudangrass cultivars.

**Site Selection and Soil Preparation.** Soil should be worked early enough in the season to remove weeds and coarse plant residues and to accumulate moisture in the soil profile. Soil test recommendations are the basis for applying the most effective quantities of fertilizer. These are based on projected forage yields (tons per acre) or grazing objectives. In the absence of a soil test, disk- or knife-in 50-30-30 on coarser upland soils or 50-20-0 on heavier soils of the coastal plain.

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Additional fertilizer (especially nitrogen) should be applied after each cutting of hay. The best results will be obtained on well-drained, fertile soils. Some hybrids/varieties are more tolerant of high-pH soils and should be considered for problem fields.

**Planting and Seeding Rate.** Seeding rate will depend on seed size, percent germination, and desired leaf-to-stem ratio. Higher seeding rates may produce finer stems and greater palatability. Less hay is wasted and more forage is consumed.

Seeding rates range from as low as 12 to 15 pounds per acre (Sorghum Alnum) to as high as 70 to 80 pounds for some sorgho-sudan crosses. Grazers and pearl millets germinate poorly when soils are too hot or too cool. Germination is best between 68 and 86°F. Except for millet, seeding is normally accomplished between March 15 and June 1, but soil temperature should be the guide for early planting dates. Millets are day-length-sensitive and should be planted after April 1. Adequate planting moisture may reduce the calendar dates available for successful establishment during dry springs. Haygrazers can be dry-planted, but emergence may be uneven or stands may fail if adequate rainfall is not received soon after emergence. Grazers may also be planted in the fall for quick forage production.

## Hybrid Selection.

- **Redtop Cane:** This is a sorghum-cross also known as Early Sumac. It provides lots of bulk and is moderately fast in growth, but it has prussic acid when short (less than 6 inches in height). Redtop cane is good on land with high pH and land high in calichi. It should be seeded at about 50 to 60 pounds per acre. Redtop cane was one of the first canes used for forage in early pastures.

- **Orange Cane:** This hybrid is also called “sourless orange cane” or African Millet. It is produced in Arkansas, Kansas, and Texas and can be obtained through local seed companies. Rapid emergence and early growth are important characteristics. Plant 15 pounds per acre if grown in rows and 40 to 50 pounds per acre for broadcasting.

- **Sorghum Alnum:** This sorghum looks like Johnsongrass when growing and will volunteer back. Wildlife like it, and it is very easy to establish. Planted at 12 to 15 pounds per acre, it provides lots of bulk with very fast production. Sorghum Alnum is

basically an annual, but it is a very weak perennial in growth habit and has limited rhizomes.

- **Hybrid Pearl Millet:** This hybrid will resist yellowing (more iron-efficient plant), while being satisfactory for grazing horses as well. It does not induce eye troubles or digestive problems experienced with some grazers. Warm soils are critical for success (don't plant earlier than April in South Texas). Some 60 to 70 percent of its growth takes place in the first 90 to 120 days. Pearl Millet is very day-length-sensitive and will finish by September. It should be planted in the spring as a warm-season annual. Since there is good uniformity in the size of millet seed, plant 5 pounds per acre if the plantings are in rows and 12 to 20 pounds per acre for broadcasting. Millets do not produce prussic acid.

- **Sudangrasses:** True sudangrasses may be finer stemmed, leafier, and of better quality than many of the haygrazers. Seeded at 25 pounds per acre, sudangrasses generally produce less tonnage than sorghum or sorgho crosses, but have lower prussic acid when small. Many have been bred for resistance to downy mildew, MDMV, and greenbugs.

- **Sorghum or Sorgho-Sudan Crosses (haygrazers):** There are premium and non-premium types to choose from, depending on type of production desired. Premium types tend to have higher energy and protein, are smaller-seeded, and are planted more heavily.

Many have early vigor and regrowth, downy mildew and MDMV resistance, and longer season maturity. A few crosses (4Ever Green) are extremely slow and require 150+ days to heading. If planted after March 15, only 10 to 15 percent of these will head out.

- **Sweet Sorghum Crosses:** These include some sorghum-sorgho-sudan grass (3-way crosses) and sorgho-sudan crosses (2-way). The sorgho imparts some additional sweetness, which increases consumption and palatability. Fast regrowth, drought tolerance, and good disease-resistance packages will ensure multiple cuttings under favorable conditions.

- **Hegari:** Hegari has a head-type similar to kafir, and its seeds are chalky or starchy-white. Leaves are more abundant, and the sweeter juice makes it more prized as a forage. Planting rates are the same as for

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grazer seed. Hegari works well on shallow soils that tend to be chlorotic. It is an older, “workhorse type” forage that has good drought tolerance and average regrowth. It does not have the disease resistance that has been bred into our current grazers and consequently has evolved to a lower-class forage that is placed on less-productive soils. Its popularity is as a forage, a hay crop, and a game (bird) feed.

- Variety Not Stated: Producers should not plant seed without variety identity and knowledge of the variety’s characteristics.

**Off-Type Plants.** These are often plants with different headtypes, plant heights, or colorings. Concern over these off-type plants is over the production of rhizomes or setting of some seed of undesirable plants such johnsongrass or shattercane. A picture reference sheet is available to identify some of the more common contaminants; however, most seed that is sold by commercial companies contains only trace amounts of off-type plants.

**Prussic Acid.** Prussic acid poisoning of grazing livestock can also be a problem during and immediately after a drought, or after a freeze in the fall. Prussic acid poisoning, compared to nitrate poisoning, only occurs with sorghum family plants (i.e., johnsongrass, haygrazers, milo, grain sorghum). Since millet is not a sorghum, it will not cause prussic acid poisoning. Prussic acid poisoning is really cyanide poisoning and progresses rapidly. Death can occur in minutes.

Prussic acid develops in the new growth of plants, usually after a light freeze, or in new growth during and after a drought. Prussic acid will leave the plant after a few days of growth after a drought, or will leave the forage when properly cured as hay. Prussic acid will **not** dissipate during ensiling.

Management of plants suspected to be high in prussic acid should include haying with proper curing prior to feeding, preventing grazing sorghum plants during and shortly after drought periods when growth is severely reduced, preventing grazing for 2 weeks after a frost, preventing grazing of wilted plants or plants with young tillers, and testing forages for prussic acid levels.

**Weed Control.** Grazers and canes (broadcast or close-drilled planted) grow so fast that few weeds are strong competition for late-spring plantings.

Crops planted in rows for grazing can experience weed competition. Huisache, johnsongrass, and shattercane off-type plants are most common. Limited broadleaf plants may be a problem where thin stands are achieved and no herbicide has been used.

**Harvesting.** Many haygrazers achieve heights of 6 to 7 feet under excellent growing conditions. Ideal plant height may be as low as 20 inches for the hybrid sudangrasses (such as Trudan) or much taller for most other sorghum-sudan crosses. As previously discussed, harvesting forage as plants are in the boot stage or are just beginning to head is usually the time of highest TDN.

As summer annual grasses, most crosses will yield two or more cuttings with irrigation or during a wet summer, but only one harvest or grazing period may be possible during hot, dry growing seasons. Regrowth potential depends on cutting height, soil moisture, and the potential of the sorghum cultivar. Cutting lower than 8 inches will generally damage the regrowth potential. Thinner-culm types generate regrowth faster than thicker-culmed plants. Pearl millet should not be cut lower than 8 inches or plant death might result. If a second cutting or grazing period is practical, liberal stubble height should be left to bring on regrowth.

Young leaves are generally 75 percent digestible, while older leaves are only 50 to 60 percent digestible. Because of differences in morphology and physiology, the quality of forage may or may not increase with cutting frequency.

## For More Information.

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