



Forage Types and Varieties for West Texas

Calvin Trostle, Extension Agronomy, TAEX-Lubbock (806.746.4044)

Updated May, 2000

General Principles for High Quality Forage: For any forage—grazing or haying—leaf and stem quality and energy level of the forage declines with maturity. This decline is exceedingly rapid once the forage matures past boot stage. If you seek quality forage (vs. tonnage) do not allow forage to head out (unless you cut for silage). For best regrowth after haying or grazing leave a minimum of 6" of stubble. Remember that seed size will differ among forage types. Seeding rates on irrigated are often roughly 1.5 to 2.0 higher than dryland; grazing seeding rates are slightly higher than rates for hay or silage. For long-term grazing consider plugging your drill so you'll have ~20-22" spacing. Livestock tend to walk between the rows thus regrowth is better.

Seeding rate costs comparisons below are for drilled (10" rows) **dryland** at targeted seeding rates for South Plains forage observation trials in 1999 (see Suggested Forage Seeding Rate Targets for West Texas, 1999, by Calvin Trostle).

Conventional sorghum/sudan. Haygrazer. Adequate and highly productive, but slightly more than 50% of yield comes from stem. Often the best all-round producer for hay or grazing. Better vigor, regrowth, and drought tolerance than forage sorghum. Depending on the cross may be sweet or not, coarse or fine stems. Normally about 16,000 seed/lb. May begin grazing at 24-30".

Sorgo-sorghum/sudan. The extra sorgo adds sweetness to sorghum/sudan, which increases consumption and palatability for livestock. Seed size (20,000-24,000 seed/lb.) is smaller than conventional sorghum/sudans thus seeding rates should be lower by about 20%. Has good regrowth and drought tolerance of conventional sorghum/sudan.

Brown mid-rib (BMR) sorghum/sudan. In general the management of BMR (16,000 seed/lb.) is similar to conventional sorghum/sudan for seeding, planting date, and harvesting. The brown mid-rib trait is just that, a brown midrib in the leaves. The important characteristic for BMRs is lower lignin content in the leaves and stalk, 25 to 60% less than conventional sorghum/sudan. High lignin content can bind up the cellulose fraction and lower digestibility {i.e., the negatives of higher Neutral Detergent Fiber (NDF) and Acid Detergent Fiber (ADF)}. Thus BMR forage has higher feed value and forage palatability for livestock (grazed or baled). One concern with BMR may be standability (lodging) due to lower lignin although this may only be a concern if the forage heads out. Higher seeding rates increase lodging potential. Lower seeding rates than conventional sorghum/sudans and lower applied N may be appropriate for BMRs. Genetics are slightly different among BMRs (including the two below), but we don't know yet how that is expressed in the field. Also, BMR forage sorghum silage is available.

Photoperiod-sensitive sorghum/sudan, forage sorghum, or hybrid pearl millet.

Photoperiod sensitive forage will remain in the vegetative stage until sunlight decreases below ~12 h, 20 min (in this case) when it will initiate the reproductive stage (and head out about 4 weeks later). Thus forage potential (grazed, baled, ensiled) is higher due to long-season growth, especially if planted early. While producers run the risk of conventional forages heading out due to delayed harvest (rainy weather, no time to harvest) photoperiod sensitive forage will simply add another leaf or two. Otherwise the general management of photoperiod sensitive forages (16,000 seed/lb. for forage sorghum or sorghum/sudan) is the same as conventional forage sorghum or sorghum/sudan for planting date, seeding rate, regrowth, etc. Photoperiod sensitive traits are also available in forage sorghum from several companies and in hybrid pearl millet.

Forage sorghum. Old names such as 'Red Top Kandy', 'Cane', 'Sweet sorghum'. Many forage sorghums are multi-purpose, but are most often planted for silage rather than hay or grazing as other materials have better regrowth. These materials are often very tall and coarse stemmed in part due to their strong daylight sensitivity. Forage sorghums have sweet, juicy stems, relatively small grain heads, and may mature late. Traditionally, some grain production was expected from forage sorghums produced for silage, but the widespread availability of feed supplements has made this less important if forages can produce more pure tonnage. Prussic acid potential tends to be higher than sorghum/sudans. Seed size varies, but averages near 16,000 seed/lb. {Somewhat similar is 'Red Top Cane', an old 'early sumac' forage sorghum cross, has higher seeding rates than conventional forage sorghums. It provides a lot of bulk, grows fast, is susceptible to prussic acid when short, but is good on high pH soils especially those with caliche.} Forage sorghum is the best choice for after frost grazing.

Hybrid pearl millet. Provides forage just like conventional sorghum/sudans that is of equal or better quality and more leafy. Seed size is much smaller (80,000-90,000 seed/lb.) than sorghum/sudan thus seeding rates must decrease. Due to small seed size, however, seeding depth should be 0.75 to 1.5" which may limit millet establishment under dry conditions. Relative to sorghum/sudans (60-65 F) warm soils are critical for success for hybrid pearl millet (65-70 F). Yields are somewhat lower than sorghum/sudans but this leafy forage tends to have higher quality. In the Texas South Plains hybrid pearl millet is much more tolerant of iron (Fe) deficiency induced by chalky or caliche soils. Thus millets may produce comparable or even higher yields on these soil types relative to conventional sorghum/sudans. Hybrid pearl millet is drought tolerant, can be grazed by horses, and does not develop prussic acid problems (a good forage choice for fall grazing when frosts come). This material may be grazed sooner (18-24") than sorghum/sudan. It should be harvested in boot stage for maximum total digestible nutrients per acre, or in pre-boot if higher quality is desired. Regrowth potential is somewhat less than sorghum/sudan so if haying leave 8" of stubble or if grazing do not allow livestock to trample the stalks. Photoperiod-sensitive hybrid pearl millet is also available.

Conventional hybrid pearl millets are ~\$25/bag or \$5.00 at 10 lbs./A.

The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding no discrimination is intended and no endorsement by the Texas Agricultural Extension Service is implied.

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.