

Sorghums

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Members of the Sorghum family are often used for forage in Georgia. These warm season grasses are also of African origin. These grasses may contain toxic levels of nitrates and prussic acid under stress conditions (drought, frost/freeze, etc.). As such, they are not preferred choices for grazing or hay production (unless irrigated). Sorghums are generally more difficult to cure for hay than pearl millet or other summer annual forage crops. Therefore, they are best adapted to use as a silage crop. The ensiling process results in the dissipation or breakdown of prussic acid and high nitrate levels after 2 – 3 weeks, reducing the toxicity problem for livestock.

In addition to the potential for prussic acid toxicity, some have reported the presence of an unidentified toxin in sorghum, particularly in sorghum x sudangrass hybrids. This toxin or factor appears to cause spinal cord degeneration and, in extreme cases, paralysis in horses (sorghum cystitis ataxia syndrome). The potential for this problem and the lack of an effective treatment or cure for this syndrome has led to a general recommendation that horses should NOT be fed forage from the sorghum family.

Sorghum x sudangrass hybrids

Hybrids of forage sorghum and sudangrass are commonly grown as a warm season annual crop in Georgia. These hybrids have the highest yield potential of any of the summer annuals, if adequate rainfall is received or irrigation is provided. However, sorghum x sudan yields are more severely affected by drought than pearl millet, are less tolerant of poor soil conditions and soil pH values less than 5.8. Sorghum x sudans can be used for grazing or silage, but like other annual sorghums, their forage is very difficult to dry to moistures suitable for hay production. If grazed, the sorghum x sudan hybrids should be rotationally grazed allowing the forage to reach 24 inches before grazing (i.e., managed like sudangrass). At this stage, sorghum x sudans will generally have TDN values in excess of 53 - 60% and CP concentrations of 9 - 15%. Brown midrib (BMR) varieties are usually preferred varieties for grazing since they have less lignin and higher digestibility than other varieties. Research in Texas has indicated that BMR varieties may improve animal gains by as much as 5 – 8% relative to non-BMR varieties.

Forage sorghums

Forage sorghums are high yield producers that may have from 0 – 50% grain in the forage, depending upon the hybrid and stage of maturity at harvest. As plants mature, lignification increases sharply, reducing digestibility and quality. BMR hybrids can improve digestibility, but this trait has increased lodging in some varieties. Careful selection of BMR hybrids and timing of harvest are necessary to get highest total digestible nutrients (TDN). Highest crude protein and digestibility will usually be obtained by harvesting in the vegetative growth stage while dry matter production will be increased from more mature plants. Harvesting in the late grain dough stage will result in a lower average TDN value, but will maximize the amount of TDN harvested per acre.

Grain sorghums, as the name suggests, are prolific grain producers and best used for that purpose. Grain sorghums are dwarfed cultivars of the same species as forage sorghums. Though they may also produce substantial forage yields, the quality of the forage from grain sorghum varieties is generally much lower than forage sorghums.

Sudangrass

Sudangrass has finer stems, tillers more profusely, and is leafier than forage sorghums. They produce very few seed. Their rate of regrowth after cutting or grazing is superior to that of sorghums. For this reason, they are sometimes used for temporary rotational grazing. However, sudangrass usually produces lower yields than pearl millet or the sorghum x sudan hybrids and requires fertile soils with a pH of 5.8 or higher. Sudangrass tends to have less prussic acid accumulation than forage sorghums, and the levels decrease with maturity. For this reason, care should be taken to let sudangrass accumulate to at least 24 inches of regrowth before grazing.

Information about varieties of sorghum x sudan hybrids, forage sorghum, and sudangrass that are currently recommended may be found on the web page entitled “Forage Species and Varieties Recommended for Use in Georgia” (<http://www.caes.uga.edu/commodities/fieldcrops/forages/species.html>).



Sorghum x Sudangrass hybrid

Forage Sorghum (*Sorghum bicolor*)

Sudangrass (*S. bicolor* ssp. *drummondii*)

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