

# Sudangrass and Sorghum-sudangrass Hybrids

*Chris Teutsch, Ray Smith, Tom Keene and Jimmy C. Henning, Plant and Soil Sciences*

Sudangrass is a rapidly growing summer annual grass in the sorghum family. It is medium yielding and well suited for grazing. Sudangrass regrows quickly after harvest and can be grazed several times during summer and early fall. This grass has finer stems than most other summer annuals which makes it better suited for hay production.

Sorghum-sudangrass hybrids are developed by crossing sorghum with true sudangrass. The result is an annual grass that resembles sudangrass, but has coarser stems, taller growth habit, and higher yields. Like sudangrass, hybrids will regrow after grazing if growth is not limited by environmental factors. The coarse stems are difficult to cure as dry hay, therefore these grasses are best utilized for grazing, chopped silage and baleage.

Sudangrass and sorghum-sudangrass hybrids are best adapted to well-drained, fertile soils, but will grow on moderately drained soils when surface water is removed. For more information on soil types see [AGR-217: "Determining Soil Texture by Feel."](#) These grasses do not tolerate low pH and require liming when grown on acid soils. A pH of 6.0 to 6.5 is required for maximum production. Phosphorus and potassium should be applied according to soil test. For more details on fertilizing warm season forages like sudangrass and sorghum-sudangrass, see [AGR-1 Lime and Nutrient Recommendations](#). In the absence of a soil test, apply 60 - 80 lb/A of P<sub>2</sub>O<sub>5</sub> and 70 - 100 lb/A K<sub>2</sub>O prior to seeding. Apply 60 to 80 lb/A of actual nitrogen at seeding and 40-60 lb after each cutting or intensive grazing if regrowth is desired. Do not apply nitrogen at the onset of drought conditions.

Sudangrass and sorghum-sudangrass should be planted after there is no chance of frost when the soil temperature has reached at least 60°F. They can be conventionally or no-till seeded. Seed can be broadcast at a rate of 25-35 lb/A for

sudangrass or 30-40 lb/A for sorghum-sudangrass onto a fine, but firm seedbed and then cultipacked to ensure good soil-seed contact. When seeding using a grain drill, reduce seeding rates to 15-20 lb/A for sudangrass and 20-30 lb/A for sorghum-sudangrass. Seeding depth should be between 1/2 and 1 inch. Seeding depths greater than 1 inch should be avoided.

Grazing should be initiated when these grasses are at least 20 inches tall. Cut for hay or wilted silage once stands reach 30-40 inches. These summer annuals can provide multiple grazings or forage harvests in a season if not defoliated shorter than 6 to 10 inches. While the finer stems of sudangrass make it more suitable for hay than sorghum-sudangrass, curing can be difficult for both. Mower-conditioners should be used to crush stems, which reduces drying times considerably. Make mower swaths as wide as possible to increase surface area for drying.

Sudangrass and sorghum-sudangrass hybrids can accumulate toxic levels of nitrates under certain conditions, such as high nitrogen fertilization, excessive manure/poultry litter applications, drought, or sudden weather changes. Ensiling will reduce nitrate levels by 40 percent to 60 percent, but suspect forages should always be tested prior to feeding. For more information on

nitrates see [ID-217: "Forage-related Cattle Disorders—Nitrate Poisoning."](#)

Sudangrass and sorghum-sudangrass may cause prussic acid (cyanide) poisoning when immature or frosted forage is consumed. In order to reduce the chances of poisoning, sudangrass and sorghum-sudangrass hybrids should not be grazed until they reach a height of at least 20 inches. Sorghum species should not be grazed during periods of frost until the forage is completely dry and brown.



**Figure 1.** Like sorghum, sudangrass and sorghum-sudangrass contain prussic acid. In order to reduce the chances of prussic acid poisoning, sudangrass and sorghum-sudangrass hybrids should not be grazed until they reach a height of at least 24-30 inches.

The ensiling process allows the prussic acid to be neutralized and prussic acid volatilizes during proper hay curing. For more information on prussic acid see [ID-220, Cyanide poisoning in ruminants](#).

*Sudangrass and sorghum-sudangrass hybrids are not recommended for horses because they contain compounds that can cause muscle weakness, urinary problems, and, in severe cases, death.*

## Sudangrass and Sorghum-Sudangrass Facts

**Common Name:** Sudangrass and sorghum-sudangrass hybrid

**Scientific Name:** *Sorghum bicolor*

**Origin:** Northeast Africa

**Growth Characteristics:** Erect, tall growing annual grass

**Adaptation:** All of Kentucky

**Major Uses:** Grazing, hay, and silage

**Drought Tolerance:** Very good

**Soil Drainage:** Well drained to somewhat poorly drained

**Weight per Bushel:** 40 to 50 pounds

**Number of Seed per Pound:** Sudangrass-55,000 and sorghum-sudangrass-20,000

**Seeding Rate:** Sudangrass, 25-35 lb/A broadcast or 15-20 lb/A drilled; sorghum-sudangrass, 30-40 lb/A broadcast or 20-30 lb/A drilled

**Seeding Date:** Two weeks after corn, when soil temperature is at least 60°F

**Seeding Depth:** ½ to 1 inches

**Time to First Grazing:** 45-60 days

**Expected Yield:** Hay—2 to 5 tons DM per acre, silage—12 to 15 tons per acre at 65% moisture

**Soil pH:** Optimum growth is obtained when pH is 6.0 to 6.5

**Fertilization:** Apply phosphorus and potassium according to soil test; nitrogen, 60-80 lb/A at establishment and 40-60 lb/A after each intensive grazing or cutting.

**Seasonal Distribution:** 90% of growth in June, July, and August

**Grazing Management:** Must be at least 20-24 inches tall before grazing. Graze to a height of 6 to 10 inches. Manage regrowth in the same manner.

**Hay or Wilted Silage Management:** Cut when forage is 30-40 inches. Use mower-conditioner to crush stems. Use wider mower swaths to increase surface area for drying.

**Forage Related Disorders:** *Prussic acid (cyanide) poisoning.* To reduce the chances of prussic acid poisoning, do not graze young, drought-stressed, frosted, or damaged plants. Nitrate poisoning. To avoid nitrate poisoning, do not apply excessive amounts of nitrogen fertilizer. Do not graze drought-stressed or slow-growing plants. For more information on nitrates and prussic acid, see [ID-217: "Forage-related Cattle Disorders—Nitrate Poisoning"](#) and [ID-220: "Cyanide Poisoning in Ruminants."](#)