

There are numerous species, hybrids, and varieties available for summer annual forage. Many of these forages can be a valuable tool when rotating a crop field into fall-seeded pasture, or as a targeted way to provide grazing during the summer slump. Additionally, livestock operations that typically ensile corn may find some of these species perform better on poor ground and are cheaper to raise than corn.

General Notes:

Sudangrass can be harvested as pasture, green chop or silage, but is best used for pasture. Yields of 3 to 4 tons/acre of dry matter or 10 to 12 tons/acre of green feed or silage are possible. It can be pastured 5 to 6 weeks after planting and may be cut or grazed multiple times (when regrowth reaches 18 to 20 in.) For best results, it should be grazed rotationally with a sufficiently heavy stocking rate to remove forage down to a 6 to 8 inch height in a few days. The pasture will grow rapidly when the cattle are removed for more total tonnage. Additionally, if the grazing period is short, cattle will be less likely to be grazing regrowth that is high in prussic acid. It can be very difficult to dry for hay- a good strategy is to harvest early when plants reach around 30 in. tall. For silage, harvest in the medium dough stage at 65-70% moisture. Nutritional quality is good when plants are immature (about 70% TDN, 17% CP) and drops with maturity to around 55% TDN, 11% CP.

Sorghum-sudangrass hybrids are taller, have larger stems and can be higher yielding than sudangrass. Sorghum-sudangrass hybrids are normally harvested for green chop or silage (medium dough stage) but may be used for pasture or hay if planted at a high seeding rate and harvested at 18 to 24 in. tall (regrowth is good but not as good as Sudangrass). The sorghum-sudangrass hybrids usually yield less than forage sorghums. Forage quality will be around 65 TDN, 16% CP in the vegetative state; as the plant matures quality will drop to around 55 TDN, 11% CP.

Forage sorghums are best harvested as silage, and should be harvested at the mid dough stage. 9%CP, 60% TDN. Most forage sorghums and forage sorghum hybrids are medium to late maturing; some long season and/or non-flowering types will need to be killed by frost to dry down enough for ensiling. Forage sorghums and sorghum hybrids can cause prussic acid poisoning under certain environmental conditions- mainly when grazed or fed as green chop. The energy value of sorghum silage is about 90% that of corn silage (60% TDN, 9% CP).

BMR

Many Sudangrass and Sorghum hybrids are BMR (brown-midrib) traited. Brown midrib is a genetic mutation that results in low lignin levels in the plant. Resulting forage quality is significantly higher in palatability and digestibility (for example, a 5 point increase in IVTD 'in vitro true digestibility'). The potential for increased lodging exists with BMR hybrids.

Millets are lower yielding and slower growing than sorghum-type plants. However, they have smaller stems and are leafier. They do not present a risk of prussic acid poisoning.

Pearl millet is the preferred species for grazing since it has the ability to regrow well from multiple tillers. Forage quality will run about 60% TDN, 12% CP prior to heading. Grazing should begin at about 20" and stop at about 9-12". Dwarf varieties of pearl millet are shorter, with a higher leaf/stem ratio.

Prussic Acid

Sorghum and sudangrass plants contain a compound called dhurrin, which can break down to release prussic acid (hydrogen cyanide, HCN). Sudangrass has low levels of this compound and rarely kills animals. Sorghum has the highest levels and sorghum-sudangrasses are intermediate. There is also considerable varietal difference in prussic acid content for all types of sorghums.

Dhurrin content is highest in young plants. Therefore, the recommendation is not to graze or cut for green chop until the plant is 18 to 20 inches tall. This also applies to young regrowth in pastures. After a drought, new shoots may appear and the grazing cattle will switch from the taller forage to the new tender shoots. In addition, do not graze or green chop for 10 days after a killing frost.

High levels of nitrogen fertilizer or manure will increase the likelihood of prussic acid poisoning as well as nitrate poisoning. Very dark green plant growth often contains higher levels of prussic acid.

Most prussic acid is lost during the curing process. Therefore, hay and silage are seldom toxic even if the original forage was. Do not leave green chop in a wagon overnight and then feed. The heat that occurs will release prussic acid and increase likelihood of toxicity in the feed.

Individual animals vary in susceptibility to prussic acid poisoning. Cattle are more susceptible than sheep. Animals receiving grain with the sorghum forage are less likely to be affected.

- *'Prussic Acid Concerns' Dan Undersander, University of Wisconsin*

Other options to consider...

Brassicas

Annual lespedeza

Corn for grazing

Crabgrass

Burmudagrass

Summer stockpiled fescue