Warm-Season Annual Forage Grasses

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Introduction

Summer annual grasses are important to many livestock producers in Louisiana because the forage quality is considered good, and they are highly productive under good growing conditions. Dairy producers frequently plant them for summer grazing by lactating cows which need a high-quality forage. Beef cattle producers sometimes graze weaned stockers or yearlings on those grasses for the same reason. Another reason to plant summer annual grasses is their rapid growth from seedlings. They can usually provide grazing within 35 to 40 days after planting if growing conditions are satisfactory. Under drought conditions, it may take longer but these grasses are still capable of providing grazing quicker than most forages. Thus, they are often referred to as "emergency" grazing crops. These crops require a prepared seedbed for optimum seedling emergence and growth. These crops can be planted any time between April 15 and Aug. 1 and should be timed according to the anticipated need for grazing or hay harvest.

Sudangrass and Sorghum-Sudangrass Hybrids

Sudangrass is a fast-growing, summer annual grass. It is adapted to a wide range of soil and climatic conditions. Sudangrass develops only fibrous roots and does not have rhizomes, but it does produce a lot of tillers. It has fine stems and grows rapidly after grazing. The variety Piper is a commonly used variety for forage. The seeding rate for sudangrass is 20 pounds per acre if drilled and 30 pounds per acre if broadcast. Sudangrass can be used for grazing or hay.

Crosses of sorghum and sudangrass have resulted in hybrids that are high yielding and high in forage quality. The forage quality of these hybrids is similar to sudangrass, but the forage yields are higher. These hybrids can be seeded at a rate of 30 pounds per acre if drilled and 35 pounds per acre if broadcast. They can be grazed when they reach a height of at least 24 inches. When the canopy is grazed to a 4-to-6-inch stubble height, cattle should be removed and the plants allowed to regrow. The plants can be grazed again once they reach a height of 18 to 24 inches.

Sorghum-sudangrass hybrids should be cut for hay at the boot maturity stage or when they reach a height of 3 feet tall. They can also be used for silage or baleage. Horses should not graze sudangrass or sorghum-sudangrass pastures or consume hay harvested from these sites. Horses consuming these forages may contract cystitis syndrome disease.

There are many commercially varieties of sorghum-sudangrass available. There are some varieties available that use the brown midrib (BMR) genetic trait that improves forage quality by lowering the lignin content in the plants. This BMR trait has also been shown to produce higher animal gains than traditional varieties. The main disadvantage of this trait is that the plants are more prone to falling over (lodging) due to having a lower lignin content.

Sorghum sudangrass hybrid. Photo by Josh Reynaud

Pearl Millet

Pearl millet is best suited to be grown on well-drained soils. It can also tolerate lower soil pH conditions better than the sorghum species. Pearl millet has a high yield potential, but growth is erratic and depends on the amount and timing of both nitrogen fertilization and rainfall. A high gain per acre is possible from pearl millet, but individual animal performance is only about the same as that obtained from summer perennial grasses such as bermudagrass. Pearl millet

Pearl Millet (cont.)

can be seeded at a rate of 25 pounds per acre if drilled and 30 pounds per acre if broadcast.

Grazing can be initiated when plant height reaches 12 to 18 inches. The plants can be grazed to a stubble height of 4 inches, and then cattle should be removed so that the plants can regrow. The plants can be grazed again once they reach a height of 12 to 18 inches. Pearl millet can be cut for hay when it reaches a height of 24 to 48 inches. There are many commercial varieties available. Some of these varieties contain the BMR trait and produce results similar to the BMR sorghum-sudangrass hybrid varieties.

Pearl millet. Photo by Dr. Angela Mayeux Hebert

Browntop Millet

Browntop millet is a leafy, fine-stemmed annual with a yellow to brown-colored seed head. It is primarily used as a hay crop. It should be cut at the heading stage and producers should expect minimal or no regrowth to occur after cutting. The production of this species is much less than that of pearl millet or sorghum-sudangrass. Browntop millet can be seeded at a rate of 15 to 20 pounds per acre if drilled and 25 to 30 pounds per acre if broadcast. It produces large quantities of seed which can be used in wildlife food plots to attract quail and doves.

Browntop millet. Photo by Bradley Pousson

Crabgrass

Crabgrass is a warm-season annual grass that is best adapted to well-drained soils such as sandy loams, loams and silty loams. Although it is most widely known as a weed, it has excellent palatability and produces high quality forage during the summer months. An advantageous characteristic of crabgrass is that it readily reseeds itself each year as long as it is allowed to produce a seedhead and mature. Crabgrass typically provides earlier growth than most other summer annual species. Grazing can be initiated at 6 to 8 inches and stopped at 3 to 4 inches. Hay should be cut at the boot maturity stage or at a height of 18 to 24 inches. Crabgrass hay typically takes longer to cure than does bermudagrass or bahiagrass hay. There are two commercially available varieties – Red River and Quick-N-Big – as well as common crabgrass. It can be seeded into a prepared seedbed at a rate of 3 to 5 pounds per acre. Crabgrass stands are prone to infestation by armyworms, so producers need to monitor their stands for the presence of this insect.

Crabgrass in a pasture. Photo by Tripp Morgan

Teff

Teff is a warm-season annual grass from Ethiopia. It has historically been grown in Africa as a grain crop, used in making a type of bread. In the United States, teff makes a better forage crop than a grain crop. It is a very leafy grass with a shallow root system. It can be planted at a rate of 3 to 5 pounds per acre and should only be planted at a shallow depth of about 1/8 to ¼ inch. Teff can be grazed or cut for hay. Since teff is shallow rooted, it should not be grazed until at least 45 days

Teff (cont.)

after planting. Hay should also not be cut until at least 45 days after planting. Teff plants regrow very quickly, so it should be possible to obtain two to three cuttings per year. The forage quality of teff is similar to or slightly higher than most other summer annual species, but its yield potential is much lower.

Potential Animal Hazards

The two most frequently reported animal health problems associated with summer annual grasses are prussic acid poisoning and nitrate poisoning. Prussic acid poisoning occurs in sorghum, sudangrass and sorghum-sudangrass hybrids after a killing frost or drought. Usually, cattle are more susceptible to prussic acid poisoning than horses. Prussic acid usually dissipates within a week after a frost. To avoid issues with prussic acid in drought conditions, it is recommended to not graze plants until the drought conditions improve. Also, if a killing frost is in the immediate forecast, it is best to remove cattle from the pasture and then return them in about seven days. There is no issue with prussic acid poisoning if the forages are cut for hay as the prussic acid will dissipate during the curing process.

Nitrate poisoning usually occurs when high rates of nitrogen fertilizer are used and drought conditions occur or exist. The high nitrate levels are especially found in the lower stems, and they do not dissipate as the hay cures, is baled and then stored. Nitrate poisoning can occur in pearl millet as well as in the sorghum-sudangrass hybrids and sudangrass. Nitrate poisoning can also occur when grazing stubble in the fall and winter, after the leaves and upper parts of the plants have been consumed by livestock, and they begin grazing the lower part of the stem.

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