Manage Sorghum and Sudangrass

Watch Harvest Conditions, Animal Health Hazards

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After last year's drought, many producers have planted a summer-annual grass (sorghum, sudangrass, sorghum-sudan hybrid, or millet) as insurance in case this year is another cooker. As we approach harvest time for these grasses, lets take a quick look at some harvest mangement tips.

Both the grain and forage sorghums are most frequently used for silage or greenchop in a single cut system, although they can be grazed if desired. Silage should be cut when the grain is in the medium to hard dough stage. Generally, whole plant moisture should be near the desired level for ensiling at this time. In cases where maturity is delayed, a frost may be necessary to reduce whole plant moistures to an acceptable level. Digestibility of silage made from the sorghums will usually be about 90-95 percent of well preserved corn silage.

The other summer annual grasses can be used for grazing, greenchop, silage, or hay.

When used for grazing, these grasses must be grazed at the proper stage of growth to reduce herd health problems and optimize production. The best time to graze is when the plants are between 18 and 30 inches tall (six to eight weeks after planting). Grazing when the plants are less than 18 inches tall will delay regrowth and increase the chances of prussic acid poisoning in sorghum, sudangrass, and sorghum-sudangrass hybrids. Sufficient animals should be placed on the pasture area to graze the grass down in less than 10 days. Six or more animals per acre may be necessary to accomplish this rapid grazing.

After grazing, clip the residue to about 8 inches high to eliminate old stems and ensure high quality for the next grazing period. Do not graze or clip these grasses too close (less than 8 inches) because it will weaken and may kill the plants. It will normally take three to four weeks for sufficient regrowth before grazing again.

Grazing can continue on these grasses until frost, or even after frost if the plants are allowed to turn brown (one week after a killing frost) before they are grazed. Do not graze frost damaged or stunted sorghum, sudangrass, or sorghum-sudangrass hybrids until they have been killed (turn brown) by the frost. If the plants begin to grow again after being frost damaged, they should not be grazed until the regrowth is 18 inches tall or the entire plant is killed by frost and turns brown.

Summer annual grasses are ideal for greenchop. Use the same harvest precautions for greenchop as used when grazing to avoid prussic acid poisoning. Cut the plants down to about 8 inches. Greenchop harvesting should not begin until the plants are at least 18 inches tall, however, it should begin early enough to complete harvesting before the plants begin to head. Harvesting after the plants have headed will reduce dry matter intake and milk production in cows, and regrowth potential of the plants.

Sudangrass, sorghum-sudangrass hybrids, and millet should be harvested for silage when they are between 36 and 48 inches tall, or in the boot to early-head stage, whichever comes first. At this maturity, they contain excessive moisture for proper ensiling and should be wilted (mowed and allowed to partially dry in the field) before ensiling.

Greatest hay yields are obtained if the annual grasses are harvested when the seed is in the soft-dough stage. However, proper drying is difficult at this stage. Therefore, harvest for hay is recommended during the vegetative stage before the heads emerge or the plant reaches a height of 4 feet. A hay conditioner should be used to mow and crush the stems for rapid, uniform drying. It is extremely difficult to field cure these grasses adequately for safe storage as hay.

Potential Animal Health Hazards

Prussic acid poisoning is a major concern when feeding sorghum, sudangrass, or sorghum-sudangrass hybrids. These species contain varying amounts of cyanogenic glucosides. In the rumen, these compounds are converted into prussic acid which is readily absorbed into the blood stream where it interferes with respiration. If prussic acid is present in the rumen and absorbed rapidly enough, the animal will soon die from respiratory paralysis.

Forage species and varieties may be selected that contain low levels of cyanogenic glucosides. Piper sudangrass has low levels and millet is free of these compounds. The management practices described below can also reduce the risk of prussic acid poisoning from sorghum, sudangrass, and sorghum-sudangrass hybrids:

- Graze or greenchop only when they are greater than 18 inches tall.
- Don't graze plants during or immediately after a drought when growth has been reduced.
- Don't graze on nights when a frost is likely. High levels of the toxic compounds are produced within hours after a frost occurs.
- Don't graze after a killing frost until the plant is dry (the cyanogenic glucosides usually dissipate within several days).
- Don't graze after a non-killing frost until regrowth is greater than 18 inches.
- Delay feeding silage for six to eight weeks after ensiling.

Nitrate poisoning can be a problem under conditions of high nitrogen fertilization, heavy manure applications, drought, or overcast weather, when the plants can accumulate high levels of nitrates. When plants containing high levels of nitrates are eaten, the nitrates are converted into nitrites faster than they can be properly utilized by the animal. These excessive nitrites are absorbed into the bloodstream and alter the blood so that it can not carry oxygen. This causes rapid breathing, fast and weak heartbeat, muscle tremors, staggering, and ultimately death if corrective steps are not taken.

The same precautions for prussic acid poisoning will help prevent nitrate poisoning. Millet can cause nitrate poisoning but not prussic acid poisoning. High nitrate levels will persist in forages cut for hay, but will be reduced by about half if the crop is ensiled.

Poisoning of horses fed sorghum, sudangrass, or sorghum-sudangrass hybrids has also been reported. The exact cause of this poisoning is not known. Affected horses exhibit a staggering gait, urine dribbling, and aborting in pregnant mares. There is currently no treatment for this poisoning and affected horses rarely recover. Don't feed horses any of these summer-annual species.