Caution with Sorghum and Sudangrass after a Frost

Prussic acid toxicity is a potential problem when feeding immature or frost damaged sorghum and sudangrass crops to livestock. Prussic acid is a compound that can be released in these plants in large amounts in a relatively short period of time when plant tissue is injured by wilting, freezing, cutting, trampling or other kinds of mechanical injury. While cutting the crop injured a few cells, a hard frost causes damage to many more cells and more prussic acid can be released. Feed testing labs can test for prussic acid content.

Bacteria in the rumen of ruminant animals convert prussic acid into cyanide type compounds that are toxic to livestock. These compounds prevent cells from absorbing oxygen from the blood. The blood can become super-loaded with oxygen. This can make mucous membranes unusually bright pink and the blood will have a bright cherry red color. Symptoms result from body functions being short of oxygen and might include excitement, rapid pulse, muscle tremors, rapid and labored breathing, staggering, and collapse. There can be foaming at the mouth, excessive tearing, and voiding of urine and feces. Animals might lie prostrate and have muscle spasms and convulsions.

Sorghum and sudangrass species can cause other serious problems for horses and these crops are NOT recommended for horses.

EVEN WHEN FROST IS NOT A PROBLEM:

1. Sorghum and sorghum-sudan hybrids growing under normal conditions should be 18 inches tall before grazing or green chopping.
2. Forage sorghums may not be safe for grazing or green chopping until they are headed.
3. All sorghums, regardless of growth stage, can be fed safely when harvested as dry hay.
4. All sorghums can be ensiled and fed safely when harvested after heading. If harvested at earlier stages, partial field drying is necessary for best ensiling, and some lowering of prussic acid potential can be expected.

AFTER A FROST: Safe use of sudangrass and sorghum crops for forage depends on whether the crop is taller or shorter than 18 inches, for forage sorghum if it has headed, and the severity of the frost.

FIRST... for sudangrass and sorghum-sudan grass that is TALLER THAN 18 INCHES, and forage sorghum that HAS HEADED – wait 3-5 days after a frost before grazing or green chopping.
This crop can be put up for HAY any time after a frost because it will likely be field cured or dried for 3-5 days to get to a moisture that is safe to bale.

It can be safe to put up as baleage or SILAGE based on the likelihood that it will need to dry in the field for 1-2 days to get dry enough for baleage or silage storage. Fermentation could further reduce the level of potentially harmful compounds. If the field drying is less than a couple of days and the crop was not much more than 18-24 inches tall, it could be useful to have a forage sample tested for prussic acid.

SECOND… for sudangrass and sorghum-sudan grass that is SHORTER THAN 18 INCHES, and forage sorghum that has NOT HEADED - wait 2 weeks after a killing frost before grazing or green chopping.

This crop can be put up for dry HAY with the expectation that field drying should allow time for harmful compounds to disappear or be reduce to non-harmful levels. If you’re making hay very soon after the killing frost, it could be useful to test for prussic acid compounds.

This crop could be put up as baleage or chopped for SILAGE. It would be preferred to wait 2 weeks after the frost. Moisture content may be too low for good fermentation and storage after 2 weeks. Here again, more field drying time and fermentation may reduce the level of harmful compounds. It's safer to test the crop, rather than using livestock as indicators.

AND THIRD…if NEW SHOOTS develop after a partial frost killing, don’t graze any sorghum or sudangrass crops until complete frost killing occurs and then wait 2 weeks. These new shoots are especially high in prussic acid potential AND may be preferred by livestock.

If you have questions, you’re welcome to give us call at the Extension office. For this topic you might also talk with your vet, feed rep or seed supplier. In Benton County call 968-5077 if a local call to Foley or 1-800-964-4929. In Morrison call 632-0161 if a local call to Little Falls or 1-866-401-1111. In Stearns call 255-6169 if a local call to St. Cloud or 1-800-450-6171.

Please make SAFETY a PRIORITY through the harvest season.