Frost and Johnsongrass Don’t Mix

Jeremy Powell, DVM, PhD

Autumn is upon us. The air is crisp, and freezing temperatures will soon be here. With temperatures dropping, remember that frost can lead to problems with cattle grazing sudangrass, sorghum-sundangrass hybrids and grain/forage sorghum. Plants that are members of the sorghum family can produce a toxin called prussic acid (cyanide) which is very toxic to animals. This toxin occurs at elevated levels when these plants have been stressed from conditions such as frost. The toxin can be found in frosted leaves and stems within a few hours after thawing and wilting occur. Johnsongrass (Figure 1) is a member of the sorghum family, and is commonly found in many grazing pastures throughout our state.

Prussic acid poisoning prevents the body’s ability to utilize oxygen in the blood. Therefore, affected cattle may show anxiety, rapid pulse and progressive weakness. It is common to find dead animals with no previous signs of illness. Other signs may include labored breathing, muscular twitching, convulsions and sudden death due to suffocation. Ruminant animals such as cattle, goats and sheep appear to be most commonly affected, while reports of poisoning in horses are rare. Sodium-thiosulfate is the preferred treatment for prussic acid poisoning. It must be injected intravenously (IV) and very slowly. Since dosage and method of administration are critical, it is recommended to consult a veterinarian to administer the proper treatment.

Under normal conditions, sorghum-type plants 18 to 24 inches tall are less likely to contain high concentrations of the toxin. Prussic acid concentration decreases as the plants become taller and more mature, and immature plants contain the highest levels of toxin. Toxic content of leaves is higher than that of stems, with upper leaves containing more than the lower ones.

Do not graze sorghum forage on a night when frost is likely. If frost is in the forecast and the pasture is questionable, producers should move cattle away from sorghum forages for several days following a frost. If the forages were safe to graze prior to a frost, then grazing can be reestablished 10 days following a frost. Sorghum forages require 28°F for a killing frost; however,
even a "light" frost may damage plants enough to increase toxin levels.

Baling or ensiling sudangrass, sorghum-sundangrass hybrids and grain sorghum immediately following a frost is safe because the prussic acid will breakdown and dissipate during the harvesting process. Do not feed the hay for a few days after harvesting to allow the toxin to dissipate.

Most perennial forages are not a concern following a frost. Generally, forage plants do not produce toxins and can be grazed and fed to livestock safely after a frost. However, remember to take precaution with sorghum forage when frost is in the forecast. For more information about grazing management and livestock production, contact your county Extension office.

Keys to Success in Stocker Production

Paul Beck, Associate Professor

There are several economic advantages to retaining raised calves or purchasing calves and selling them later in groups at heavier weights. These stocker (growing calves on pasture) or backgrounding (growing calves using mixed feeds or stored forages) programs add value to cattle for feedlots because they desire cattle that are weaned, are from a minimum of suppliers, are familiar with feed bunks and water sources and have minimal health issues.

The aforementioned desires expressed by feedlot cattle buyers explain the considerable discounts that lightweight, unweaned bull calves sold in one-head lots receive at livestock auctions. Short-term (35- to 45-day) preconditioning programs add value to calves because these programs provide evidence the calves being marketed 1) are weaned, 2) have been processed (dehorned, castrated, dewormed and vaccinated) and 3) are familiar with feed sources. By adding additional weight on calves with longer-term ownership, more value is added to the calves because heavier cattle require fewer days to finish and typically finish at more acceptable body weight.

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One advantage of growing retained calves to heavier weights to be sold directly to feed yards is the reputation of your cattle. Bull purchasing decisions, breed makeup and carcass performance all can be bid into the price of the cattle; but poor choices in breed makeup and bull selection, a bad reputation for performance and carcass quality can also be bid into the price of the cattle.

Purchase of additional calves can increase profitability of the operation, but care should be taken to purchase the types of cattle that will gain quickly, have minimal health problems and have breed makeup and color pattern that bring top dollar at sale. It is also essential to have adequate facilities to process, sort, catch, load and doctor retained and purchased stocker calves.

One common wreck that occurs is receiving purchased cattle in the same facilities as the retained calves. Calves retained from the home ranch should have virtually no health problems, but to bring in and co-mingle purchased cattle with ranch calves exposes the ranch calves to every disease that the purchased calves were exposed to, practically ensuring health problems in ranch calves as well as purchased calves.

Health is one of the primary issues defining performance and profitability. If the initial cost of a set of stocker calves is $500/calf for every 1% death loss there is a $5/head cost that must be made up when cattle are sold. An even larger problem may stem from the number of cattle that are chronic with respiratory disease. Chronics will not perform as well as healthy cattle, they are not worth as much as healthy cattle, and they use up the same amount of resources as healthy cattle, along with the cost of medicines used to “save” the animal. Because death loss and chronic morbidity is such an expensive problem, fresh or incoming cattle must be watched
carefully and treated as soon as clinical signs are identified.

The performance of stocker calves is much more sensitive to forage quality and stocking rate than other classes of livestock. Wheat forage commonly contains 25 to 30% crude protein and 75 to 85% digestibility; this level of protein and energy is adequate to meet the nutritional requirements of a stocker calf gaining over 3 pounds per day. Summer grasses often lack the digestibility to provide adequate energy for high levels of gain. In order for a calf to gain 2 pounds per day, diet digestibility should be 67% or greater. Often calves grazing summer grasses gain only 1.5 pounds per day or less without supplementation. Fertilization of warm-season grass pastures increases the crude protein content and increases forage growth by 30 pounds of forage for every pound of actual N applied. The additional forage growth must be utilized to maintain forage quality and avoid waste.

2010 Beef IQ Program Will Be Held in Booneville

The University of Arkansas Division of Agriculture is once again offering its popular Beef IQ program. This program, which has been attended by over 140 cattle producers, is now in its fourth year - and fifth location. For those who are not familiar with the program, it is an in-depth, informal educational activity for cattle producers and managers.

The program is completed in six, seven-hour sessions scheduled over the course of the year (9 a.m. on Mondays, February 22, March 15, April 12, May 17, September 20 and October 25). Each session highlights a specific management topic: Genetics, Reproduction, Herd Health, Economics, Forage Management and Nutrition.

This year’s program will be held near Booneville, Arkansas, in cooperation with the USDA, Dale Bumpers Small Farm Research Center. The deadline for signing up is January 8. The registration fee for the program is $100 per person or $150 per couple and includes meals and one set of resource materials for all six sessions.

For more information, contact your local county Extension office or sign up by calling (501) 671-2177. Registration forms can also be downloaded at http://www.aragriculture.org/livestock/beef/beef_iq.htm.

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