

“Cyanide for Cattle???”

Most people have heard of cyanide poisoning either from their history books in school, news reports, or from popular fictional books and TV shows. Cyanide was used in the German extermination camps during World War II, was stockpiled as a chemical weapon during the Cold War, and has been used as a means of suicide throughout history by soldiers captured by the enemy. What you may not know is that we can unknowingly expose our livestock to cyanide poisoning this time of year if we aren't careful.

Prussic acid, or more precisely, hydrocyanic acid, is a cyanide compound that can kill animals within minutes of ingestion under the right circumstances. Cyanide interferes with the oxygen-carrying function in the blood, causing animals to die of asphyxiation. Symptoms include difficult breathing, excess salivation, staggering, convulsions and collapse. Affected animals will have bright cherry red mucous membranes from the cyanide.

So how are cattle exposed to cyanide? The first few frosts of the fall bring the potential for prussic acid poisoning when feeding certain forages. Some forage species, primarily sorghums such as johnsongrass and sudex, contain cyanogenic glucosides, which are converted quickly to prussic acid in freeze-damaged plant tissue. Other plants, such as cherry trees, can also produce prussic acid and should be eliminated from pastures and fence rows.

Frost and freezing can cause a rapid change in prussic acid risk in plants of any age or size. With frost, forage tissues rupture, and cyanide gasses form. The cyanide gas can be present in dangerously high concentrations within a short time, and remain in the frosted leaves for several days. Because cyanide is a gas, it gradually dissipates as the frosted/frozen tissues dry. Thus, risks are highest when grazing frosted sorghums and sudangrasses that are still green.

A common question is “what about johnsongrass hay?” The answer is that prussic acid content decreases dramatically during the hay drying process. Hay contains very little prussic acid after it is completely dry and since most hay isn't fed right away, it is generally fine to feed. Sorghum and sudangrass forage that has undergone silage fermentation is generally safe to feed as well.

The bottom line for cattle producers is we need to be very careful about grazing johnsongrass and sudex over the next few weeks. These grasses that have been exposed to frost should not be grazed until they are completely brown, and even then it is best to wait another week just to be sure. You can bale johnsongrass after frost for hay since the cyanide will break down in 10-14 days, so by the time the hay is fed, there should be no problem. For more information, contact the University of Tennessee Extension office at 615-735-2900.