

Texas Dairy Matters

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Avoid Prussic Acid Poisoning

Ellen Jordan, Ph.D.
Extension Dairy Specialist
Texas A&M AgriLife Extension Service
The Texas A&M University System

In parts of the state, conditions are shaping up that we could see some prussic acid poisoning this fall. The lack of rain during September may have stressed some crops and of course there is always the chance of regrowth after a frost.

It's just these types of conditions under which prussic acid (HCN or hydrocyanic acid) accumulates in sorghum, sudangrass, johnsongrass, and sorghum-sudangrass hybrids. Feeding forages containing prussic acid to livestock can be fatal. There's been more than one instance when cattle got out or were turned out into a pasture and cattle dropped within minutes of starting consuming the forage.

After forages containing prussic acid are consumed, the cyanide ion binds to the oxygen in the blood and prevents oxygen from being released from the hemoglobin to body tissues. The bound oxygen in the blood results in bright cherry-red colored blood that is characteristic of prussic acid poisoning. Sometimes prompt veterinary intervention can save some of the animals, but the prognosis is guarded at best.

Prussic acid is produced in plants under stress conditions. Besides rapid growth after drought and frost, high rates of N fertilization can increase prussic acid accumulation in forages. Typically, the leaves accumulate more prussic acid than do stems. The greater leaf-to-stem ratios that occur during drought conditions increase the chance of prussic acid poisoning. In addition, re-growth after a rain is often associated with prussic acid poisoning.

Test forages to determine the levels of prussic acid. Prussic acid levels less than 500 ppm of CN as HCN on a dry basis are considered safe. When prussic acid levels are greater than 1000 ppm on a dry basis, the forage is considered hazardous. Do not feed forage with high levels of prussic acid

When prussic acid levels are a concern in forages, consider either ensiling or haying the

forage. The curing and ensiling processes decrease the prussic acid concentrations and make the forage safe to feed to dairy cattle.