

## Frost Creates Potential Prussic Acid Poisoning in Forages

Farmers seem to always face challenges. Those challenges are always there; they just change with the seasons. Late summer means to watch out for army worms that can take out the last cutting of hay almost overnight. I've also had several calls about white grubs in large numbers that can severely injure and kill forage species. And now, the first frost of the year raises another concern, prussic acid poisoning. Most of us that raise livestock are aware of the danger of wilted cherry leaves. The same condition is often present in frosted forage species such as Johnsongrass, Sorghum, Sudangrass, or Sorghum-Sudan hybrids.

Prussic acid can build up to dangerous levels immediately after a frost. Young, tender plants that are growing fast are more likely to be toxic than older, mature plants. I can remember this easily because of a situation that occurred when I was an agent in Green County where we had plenty of dairies and silage production. Corn had been harvested for silage and new leaves were growing back. The producer had turned cows out to graze when we got the first frost of the year. That's when I got a call about some dead cows. Of course it turned out to be prussic acid poisoning.

Prussic Acid poisoning, also called hydrocyanic acid, interferes with the oxygen-transferring ability of the red blood cells which basically causes animals to suffocate. Symptoms include excessive salivations, rapid breathing, and muscle spasms. Animals stagger, collapse, and eventually die. Unfortunately, the first symptom may be a dead animal because other symptoms can occur within just a few minutes after the animal consumes toxic plants.

The questions I get are usually dealing with hay production. Unlike nitrates, prussic acid deteriorates with time. Hay that has been dried properly enough to bale, that is 16 to 20% moisture, will not contain prussic acid. Standing plants that have been killed by frost can be grazed after waiting at least one week. Producers though should make sure the entire field has been killed. The first few light frosts can kill portions of the field leaving other areas to be killed by later frost.

In summary, producers need to be aware of the forages that have the potential to have problems with prussic acid. Grazing should be avoided until at least one week after a killing frost. If the potential is there, producers should not turn hungry cattle out. Avoid this by allowing them free choice access to hay before turning them in to graze. Finally remember too that prussic acid can build up in these plants after the end of a severe drought.

Ruminant animals such as cattle, goats, and sheep are more susceptible to prussic acid poisoning than non-ruminants. Reports of this are rare in swine or horses but there are other health issues for horses grazing sorghum or Sudan grasses.