

## NEWS COLUMN

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### **Frost can Increase Prussic Acid Risk to Grazing Livestock**

Sudangrass, sorghum and sorghum-sudangrass hybrids are among a group of plants that produce cyanide, which can poison livestock under certain conditions.

Prussic acid turns to cyanide in the rumen, reducing the oxygen-carrying capacity of the blood, causing asphyxia in affected animals.

The cyanide-poisoned animal shows an increase rate of respiration, increased pulse rate, gasping, muscular twitching or respiratory paralysis. HCN-poisoned animals usually die within 15 to 20 minutes after consuming the forage.

It takes only about 1 gram of HCN to poison a 1,000-pound cow. However, a 1,000-pound cow should be able to detoxify 0.5 grams of HCN an hour.

It is therefore possible for cattle and sheep to consume forage containing small amounts of HCN without ill effects or signs of cyanide poisoning.

Prussic acid levels in sorghum and sorghum-sudan can increase in periods of rapid re-growth following a period of retarded or stunted growth.

Frost injury may cause a rapid increase of prussic acid in a plant that would otherwise have been nontoxic.

Livestock owners (cattle and sheep are more at risk because of their ruminant stomachs) should use caution in grazing animals on plants that contain appreciable quantities of this poisonous substance.

- Deaths on pasture are caused partially by animals preferring to graze leaves and young shoots, plant parts that contain the most prussic acid. Immediately after frost, remove all animals until the grass has dried thoroughly, generally after 5 to 6 days.
- Greenchop forage usually is safer than the same material used for pasture because it is not selectively grazed. In the case of pasture, only the leaves may be eaten, while with green chop material, the total plant is consumed. Stems may be regarded as safety devices, since they dilute the high prussic acid content of leaves.
- Silage generally is safe for feeding. It may contain toxic levels of prussic acid while in storage, but much of the poison escapes as a gas when being moved for feeding. Do not feed new silage for at least 3 weeks after ensiling.
- The prussic acid content of sudangrass or sorghum-sudangrass hay decreases by as much as 75 percent while curing and rarely is hazardous when fed to livestock.

In summary and review:

Don't graze sorghum less than 24 to 30 inches in height, and don't graze sudangrass less than 18 to 20 inches.

Greenchop is safer than grazing, because stems dilute the prussic acid in the leaves. Prussic acid escapes as a gas from silage when being moved for feeding, making silage safer than grazing.

Uses tester animals when feeding questionable forage, rather than risk the whole herd.

After frost, don't graze sorghum or sorghum-sudangrass hybrids for 5 to 6 days until the plants have thoroughly dried out, and consider any fall regrowth dangerous.

Feed hay to hungry livestock before turning them into sudangrass or sorghum-sudangrass hybrids for the first time. Limit grazing the first day.

Cattle and sheep are more susceptible than other animals because of their ruminant stomachs.

For more information on prussic acid risks and their management, contact your county Extension office and ask for EXEX4016, Causes and Prevention: Prussic Acid Poisoning of Livestock.