

# Prussic Acid



**Major crops affected:** Sorghums, johnsongrass, white clover, vetch seed, chokecherry, and leaves of cherry trees. Plants have more potential for producing prussic acid if the soil is high in Nitrogen and deficient in phosphate and potassium.

**Susceptible Animals:** Ruminants (cattle, sheep, and goats). Reports of poisoning in swine and horses are rare.

**Conditions favoring production:** Plant cell damage caused by wilting, frosting, heat, drought, cool and cloudy weather, or herbicides can result in elevated levels of Prussic acid.

**Symptoms:** Prussic Acid is very potent and fast-acting. By interfering with oxygen use at a cellular level, it can cause asphyxiation and death in just a few minutes. Clinical signs occur rapidly and include excitement and muscle tremors, difficult breathing, and convulsions. The characteristic sign of Prussic Acid toxicity is bright red color of the blood which can persist for several hours after death.

Treatment of Prussic Acid poisoning is possible if done very quickly. Consult a veterinarian for diagnosis and drug treatment because Prussic Acid poisoning is often confused with nitrate poisoning and other toxins of plant origin.

## Sampling

To take a good sample for prussic acid testing:

- Obtain fresh samples during the late morning or early afternoon. Glycoside levels typically increase in the morning and decrease in the afternoon and evening.
- Collect random samples of several locations in a pasture or cores from several bales.
- Seal in a plastic bag and store the sample in a dark and cold but not frozen container.
- Deliver to the laboratory as soon as possible. Do not ship samples that will take multiple days to reach the lab.

**Toxicity Level:** The level of prussic acid required to cause toxicity varies depending on the rate of intake and individual animal tolerance.

HCN, ppm (DM basis)	Effect on Livestock
0 – 500	Generally Safe
600 – 1000	Potentially toxic, should not be the sole source of feed
> 1000	Dangerous to cattle, do not feed

## Sources

Jennings, John, and Shane Gadberry. Prussic Acid. Little Rock: University of Arkansas Research and Extension, n.d. PDF.FSA3069

Rusche, Warren and Sara Bauder. Prussic Acid Poisoning. <https://extension.sdstate.edu/prussic-acid-poisoning>

Stichler, Charles, and John C. Reagor. Nitrate and Prussic Acid Poisoning. College Station, Texas: Texas Agricultural Extension Service, n.d. PDF. L-5231 06-01

Whittier, J. C. Prussic Acid Poisoning. N.p.: Colorado State University Extension, July 2011. PDF. Fact Sheet No. 1.612

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