

News & Info

Recent Frosts Have Producers Asking About Prussic Acid Risk in Sorghums and Johnsongrass Says MU Extension Specialist

LAMAR, Mo. — Recent frosts have producers questioning livestock safety on forages such as Johnsongrass, Sudan grass, forage sorghum and crosses of those forages.

"Right now, producers should be concerned about prussic acid poisoning. Nitrate poisoning is most commonly associated with high nitrogen applications followed by drought, so unlikely a concern with current conditions," said Jill Scheidt, University of Missouri Extension agronomy field specialist.

The environmental conditions that favor toxic levels of prussic acid are drought stress and frost damage. Following a severe frost, avoid grazing for 14 days or until the leaves turn brown, whichever is longer. According to the University of Missouri weather stations, on Oct. 12, 2019, the minimum air temperature was 28.5 degrees F and 32.7 degrees F in Mt. Vernon and Lamar, respectively.

"Death can result from prussic acid poisoning, most commonly when livestock have fed on plants that have young growth or are stunted by severe drought or frost. A potential problem with sorghum-sudangrass is prussic acid or cyanide poisoning," said Scheidt.

When sorghum-sudangrass plants are injured or under stress, enzymes that convert glycosides to sugar and prussic acid are released. Levels of cyanide greater than 2 milligrams per kilogram (2 ppm) of dry plant tissue are considered potentially dangerous. Prussic acid is readily absorbed into the bloodstream and causes toxicity by blocking normal cellular respiration in the animal.

Prussic acid levels are highest in young, leafy tissue, whether it is initial growth after planting or regrowth after clipping.

"Since it is the young, fast-growing tissue that contains dangerous levels of prussic acid, avoid grazing until the plant reaches a height of at least 24 inches to allow prussic acid to dissipate. Unlike nitrates, which are persistent, prussic acid disappears during the hay curing or ensiling process," said Scheidt.

According to Purdue University, in the sorghums, leaf blades normally contain higher prussic acid levels than leaf sheaths or stems, the heads are low in prussic acid, and the seeds contain none. Upper leaves have more prussic acid than older leaves. Tillers and branches ("suckers") have the highest levels because they are mostly leaves and not stalk material.

As plants mature, the stalks make up a greater proportion of the plant, causing prussic acid content in the total forage to decrease. The hazards associated with poisoning may decrease only slightly with age if animals selectively graze those plant parts that are high in prussic acid.

Cold weather may kill only the tops of sorghum plants, leaving the lower portion alive. The unbound prussic acid in this forage does not decline until wilting begins. The forage is usually considered safe to pasture or feed as green chop 5-6 days after a killing frost.

"New shoots emerging from unkilld portions of the plant are apt to be high in prussic acid. This forage should not be used until that new growth reaches a height of 2 feet," said Scheidt.

In most cases, grain sorghum stubble can be safely pastured because cold weather is likely to have killed the plants before they are grazed, however, the stubble should be observed for dangerous suckers that may develop after the main stalks have been killed. Sorghum that has wilted and dried 5-6 days after being killed by frost is considered safe for grazing.

"Green chop forage is usually safer because it is not selectively grazed. If livestock is turned into pasture, only the leaves may be eaten, with green chop material the total plant is consumed," said Scheidt.

Sorghum silage is generally safe for feeding. Although it could contain toxic levels of prussic acid while in storage, much of the poison escapes as a gas during fermentation and when being moved for feeding. However, as a precaution, do not feed new silage for at least three weeks after harvesting and storing.

The prussic acid content of dry sorghum hay decreases as much as 75 percent while curing and is rarely hazardous when fed to livestock.

For more information, contact an MU Extension livestock or agronomy specialists in southwest Missouri. Available livestock specialists include Eldon Cole in Lawrence County, (417) 466-3102; Andy McCorkill in Dallas County at (417) 345-7551; Elizabeth Picking in Howell County at (417) 256-2391 or Dr. Patrick Davis in Cedar County at (417) 276-3313. Available agronomy specialists in the region are Tim Schnakenberg in Stone County, (417) 357-6812; Jill Scheidt in Barton County, (417) 682-3579 and Sarah Kenyon in Howell County, (417) 256-2391.

Source: Jill Scheidt, (417) 682-3579

Events & Programs

>>> [Online Registration](#) <<<

NOVEMBER 12, 2019 6 PM

Forage Fertility & Livestock Nutrition



**Douglas County Livestock
HWY 5, Squires, MO**

SPONSORED BY
Ozark County Soil & Water Conservation
District
Douglas County Soil & Water Conservation
District

PROGRAM HIGHLIGHTS

Fall Forage Fertility Management

Tim Schnakenberg, Regional Agronomy Specialist, Stone County

Animal Nutrition for Fall and Winter Months

Elizabeth Picking, Regional Livestock Specialist, Howell County

Program Fee-\$10 includes meal

Please preregister by contacting the
Ozark County University of Missouri Extension Office at
526 3rd Street, Gainesville, MO
Call 417-679-3525 or email ozarkco@missouri.edu
by November 6th

DIRECTIONS TO THE EVENT

Douglas County Livestock is located 10 miles south of Ava (21 miles north of
Gainesville) on Hwy 5



**Ozark & Douglas County
Soil & Water Conservation Districts**



equal opportunity / ADA institution

[Pearls of Production-Women in Agriculture](#) - November 1st & 2nd in Columbia

[Timber Management and Marketing Two session class:](#)

November 5th: Timber stand management at Webster County Extension Center

November 8th: 9am-2pm Hands on management at Compton Hollow Conservation

[Training in the Artificial Insemination of Cattle](#) - November 5th-7th in Mt. Vernon

[Boost Your Brain & Memory - Brain Fitness Class](#) - Four Sessions every Tuesday beginning November 5th in Ava

[Starting a Business in Missouri: A Veterans' Event](#) - Thursday, November 7th from 4pm - 6pm in Springfield

[Women Owning Woodland-Introduction to Timber Sales](#) - Friday, November 8th from 9am to 3pm in Saint James

[Warm Season Grass Cattle Grazing Workshop](#) - November 8th in Liberal & November 19th in Butler

[Deer Jerky & More \(2 Sessions\)](#) - Tuesday, November 12th from 5:30pm to 9pm in Marshfield

[Forage Fertility & Livestock Nutrition](#) - Tuesday, November 12th at 6pm in **Squires**

[Show-Me-Select Heifer Replacement Sale](#) - Friday, November 15th at 7pm in Joplin

[Industrial Hemp Workshop](#) - Saturday, November 16th from 8:30am-4:30pm in Warrenton

[Farmers Tax Workshop](#) - Monday, November 18th from 6:15pm to 8pm in Marshfield

[Floral Design - Fall Centerpiece](#) - Monday, November 25th from 6pm to 8:30pm in Marshfield

[Winter Cattle Feeding and Health Management Workshop](#) - Monday, November 25th from 6pm to 9pm in Nevada

Master Gardener Class - November 25th - March 2nd in Mtn. Grove

For more information, contact Texas County Extension 417-967-4545 or Wright County Extension 417-349-4134

[Hay Production: How to Capture the Value of Your Investment \(Session 1 of 3\)](#) - Tuesday, December 3rd from 6pm to 9pm in Nevada