



Cowboy Corner

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July-August 2018

Testing Forages for Toxicity

July has brought heat and drought that has impacted forages grown for hay and grazing for beef cattle. When these plants are stressed, forages such as Johnsongrass and forage sorghums are prone to accumulate dangerous concentrations of nitrates or prussic acid, both toxic to the cattle that ingest them.

High nitrate plants, either standing in the field, or fed as hay later in winter, can cause abortion in pregnant cattle, or potentially death to all cattle if consumed in great enough quantities. Prussic acid, while a hazard to grazing cattle, is volatile and dissipates if plants are cut for hay and poses no problem when the hay is fed later. Producers should test hay fields for nitrates and prussic acid before turning cattle in for grazing. Testing the forage gives the producer an additional option of waiting and allowing for the nitrate or prussic acid concentrations to drop before grazing or harvesting the hay.

The primary sources of forage nitrate toxicity and prussic acid in Oklahoma will be summer annual sorghum type plants, including sudan hybrids, sorgo-sudans, sorghum-sudans, millets, and Johnsongrass. Also, weeds such as pigweed, kochia, mustard, nightshade and lamb's quarters accumulate nitrates as well. If they become drought stressed or are heavily fertilized, they are at greater risk to accumulate these toxins.

Nitrates are normally taken up by the plant roots to be used in the production of plant protein. When the plant is stressed, however, that process is impeded and byproducts are accumulated that inhibit the ability of the animals' blood hemoglobin to carry oxygen. Prussic acid, also known as hydrocyanic acid, quickly blocks cellular respiration, the conversion of nutrients to energy.

Cattle producers should contact the OSU Extension office for information on testing, feeding and haying potentially dangerous forages. Forages can be tested at the Extension office, however, some samples may require more extensive lab analysis before being harvested or grazed. Nitrate and prussic acid risks cannot be eliminated, but they can be reduced. It is recommended that the crop be tested before harvest. Also, raising the height of the cutter bar when harvesting can reduce concentrations since nitrate accumulation is higher in the lower stem. Tonnage may be less, but high nitrate forage has little to no value.

Different classes of cattle such as pregnant cows, open cows, or stocker steers have different susceptibility to nitrates, so knowing the nitrate concentration can provide options as to how it can be fed, whether as-is or diluted with other feed and hay. Regardless, cattle should be allowed to become adapted to forage with elevated nitrate levels. Testing and an OSU Fact Sheet on nitrates and prussic acid are available at the OSU Extension office.

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Transform Receives Emergency Exemptions for Cotton and Sorghum, 2018

Tom A. Royer, Extension Entomologist

The EPA has granted Oklahoma a Section 18 Emergency Exemption for Transform WG to control plant bugs in cotton, and in sorghum, to control sugarcane aphid during the 2018 growing season. In cotton, Transform can be applied at 1.5-2.25 fl. oz. per acre to control “plant bugs”, which includes several *Lygus* species (pale legume bug, tarnished plant bug, and western tarnished plant bug) as well as the rapid plant bug. EPA granted this exemption in part due to the expected increase in planted acres of cotton in Oklahoma, especially in areas where alfalfa is also grown. This Emergency Exemption will begin when the Oklahoma Department of Agriculture, Food and Forestry receives the approved label from DowDuPont, and will expire October 30, 2018. Plant bugs cause deformed bolls, square and boll shedding, stunted plant growth and small black spots on the bolls. Oklahoma does not have a treatment threshold set for plant bugs. Texas A&M suggests sampling with a sweep net or drop cloth. Sweep net is best before bloom, and drop cloth works better after peak bloom. The following table summarizes suggested thresholds:

Cotton Growth Stage	Sampling method	
	Drop Cloth	Sweep Net
1 st two weeks of squaring	1-2 bugs per 6 ft-row + unacceptable square set	8 per 100 sweeps with unacceptable square set
3 rd week of squaring to first bloom	2 bugs per 6 ft-row + unacceptable square set	15 per 100 sweeps with unacceptable square set
After peak bloom	2 bugs per 6 ft-row + unacceptable fruit set in the first 4-5 weeks	15-20 per 100 sweeps with unacceptable fruit set in the first 4-5 weeks

In sorghum, Transform is labeled for application at 0.75-1.5 fl. oz. per acre to control sugarcane aphid. It has a restricted entry interval (REI) of 24 hours and should not be applied within 14 days of grain harvest, or 7 days if grazed or harvested for grain. This Emergency Exemption expires November 30, 2018. We encourage growers to inspect their sorghum fields once a week. When aphids are detected, increase sampling to two times per week. Look at three consecutive plants and examine one upper and one lower leaf on each plant. Estimate the average number of aphids found per plant. Then move 5 feet and sample three more consecutive plants. This is considered one “stop”. Next, move 50 feet from the first spot using an inverted “U” shaped pattern in the field and sample six more plants for the next stop. Collect counts for nine stops (for 54 plants) and estimate the percentage of plants that averaged at least 50-125 aphids per plant.

The current recommendation for control of sugarcane aphid is to treat if 20% of plants are infested with 50-125 aphids per leaf before panicle emergence, and if 30% of plants are infested with 50-125 aphids per leaf after panicle emergence. Do not spray until suggested thresholds are reached, but if needed; apply the spray with the highest amount of water carrier as possible (5 or more gallons/acre by air, or 10 or more gallons/acre by ground). Spraying too early and with inadequate coverage may require a second application from aphid recolonization.

In order to minimize pollinator protection, this product should be applied before 7:00 am or after 7:00 pm, or in the unlikely situation that temperatures drop below 55 degrees F at the site of the application (an extremely rare event until later in the fall). In addition, for cotton, the applicator should attempt to notify any beekeepers with hives within 1 mile of the treatment area at least 48 hours before the product is applied. In sorghum, Transform should not be applied during flowering (less than 3 days pre-bloom until after seed set).

Lawn and Garden Tips

July

- ◆ Begin making plans for fall vegetable garden plantings. Some plantings can begin in late July.
- ◆ Irrigate lawns deeply and infrequently. Early morning is ideal for irrigation to reduce losses by wind and evaporation.
- ◆ If lawns are showing signs of stress, gradually raise mowing heights.
- ◆ Watch for bagworms and fall webworms in trees. Call the Extension office for recommendations.
- ◆ Water landscape plants deeply and early in the morning to reduce disease.
- ◆ Expect some leaf fall from trees and landscape plants during drought

August

- ◆ Large, brown areas in the lawn should be checked for high numbers of white grubs. Mid to late August is the best time to control heavy grub populations.
- ◆ For lawn areas being converted to tall fescue this fall, begin spraying out bermudagrass with a product containing glyphosate in early to mid August.
- ◆ Continue irrigating lawn and landscape plants deeply.
- ◆ Watch for high populations of caterpillars, aphids, spider mites, thrips, and other insect pests on garden and other plant material and treat as needed.

WASHITA COUNTY FREE FAIR AUGUST 22nd –25th

HAY SHOW ENTRIES DUE IN EXTENSION OFFICE

MONDAY, AUGUST 6TH

AT 12:00

Washita County Fair Hay Show Expanding

The Washita County Fair Hay Show is expanding in 2018 with two classes in a non-legume division. The non-legume division will be judged separately from the alfalfa hay show. The two classes provided in the new non-legume division will be perennial grass hay and annual grass or other hay. **Three small square bales will make one entry for the non-legume division.**

The alfalfa hay division will also be provided with two classes. The classes will be brown alfalfa hay and green alfalfa hay. **Five bales will make one entry for the alfalfa hay show.** The grand champion and reserve grand champion will be exhibited at the Oklahoma State Fair alfalfa show.

All hay will become property of the Washita County Fair Board and will be auctioned on Saturday, August 25th at the fair. The auction will cover the cost of the protein analysis. The 2018 Washita County Fair runs from August 22nd thru August 25th. If you have any questions about the Washita County Fair Hay Show, call the OSU Extension Office at 580-832-3356.

Calendar of Events

July 20-21	Oklahoma Cattlemen's Association Annual Conference Norman, OK
July-24-27	2018 4-H Roundup OSU Campus-Stillwater, OK
July 31	Cattle Trails Conference Great Plains Coliseum-Lawton, OK
August 6	Washita County Fair Board Meeting
August 22-25	Washita County Free Fair Washita County Activity Center-Cordell, OK

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