

## PLANT AND OTHER TOXICITIES IN CATTLE

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Recently, I have had several calls from producers describing certain plants growing in their pasture or hay field and then asking; “Are these plants toxic Doc?” With this in mind, this is a good time to discuss some of the more common toxic plants before we head into the dryer portion of summer. If any of you have attended one of my talks on toxic plants, I always tell you that animals are smarter than we are. They will not consume toxic plants unless we force them to. Either through inadvertently baling toxic weeds in a forage product, or penning them in a working pen that has toxic weeds growing around the edges of the enclosure without anything else to graze. Differentiating “good” vs. “bad” plants is a learned behavior, so toxicity is more likely in young animals and animals moved to a new location. A grazing management and supplemental feeding plan is essential to minimize problems. Veterinarians and producers should be familiar with which plants can cause problems in their area, and try to avoid them. The following discussion covers some of the common plants and situations to watch for on your farm (There may be plants that grow some regions not covered here.)

Pastures recently fertilized are at higher risk for nitrate toxicity. Plants that have accumulated nitrates remain toxic after baling or ensiling. Nitrate testing is available for forages to prevent poisoning. Prussic acid accumulates most often in sorghums, Sudan grass and Johnsongrasses, but these plants can accumulate nitrates also. There is no test for prussic acid, but it dissipates in baled or ensiled forages, so these are safe. Cattle poisoned by nitrates or prussic acid are usually found dead, so prevention of these toxicities is critical. Nitrate and prussic acid toxicities both interfere with oxygen carrying capacity in the blood, so cattle with nitrate toxicity have brown blood and cattle with prussic acid toxicity have bright, cherry red blood. Pregnant cattle surviving these poisonings often abort.

Two of the most toxic plants found in croplands and pastures are coffeeweed and sicklepod. Cattle will generally not graze the green plant unless other forages are scarce. The plant remains toxic when harvested in hay/balage/silage. Coffeeweed and sicklepod are toxic to muscles and cause weakness, diarrhea, dark urine, and inability to rise. There is no specific treatment or antidote, and once animals are down, they rarely recover.

Pigweed is very common in areas where cattle congregate. Cattle will readily eat the young plants, but avoid the older plants unless forced to eat them. A common pigweed-poisoning scenario is penning cattle where pigweed is the predominant plant and no alternative hay or feed is provided. Red root pigweed is more toxic than spiny root pigweed, but is less common.

Pigweed can accumulate nitrates, so sudden death is the most common outcome. It also contains oxalates, so renal failure can also occur.

Black nightshade is common in croplands, and like pigweed, is often in high traffic areas. The green fruit is most toxic, so cattle should not have access to nightshade during this stage, and nightshade remains toxic in harvested forages. Nightshade is toxic to the nervous and gastrointestinal systems, and causes weakness, depression, diarrhea, and muscle trembling among other signs. Bullnettle and horsenettle are in the same plant family as nightshade. They are also toxic, although less so, and are usually avoided by livestock unless other forages are not available.

Blue-green algae blooms in ponds can also occur in hot weather. The algae usually grows later in the summer, but I have spotted several ponds that already have blue-green algae growing on them. They are most common in ponds with high organic matter, such as ponds where cattle have access to wade, or where fertilizer runoff occurs. The blue-green algae accumulates along pond edges, especially in windy conditions, and exposes cattle when they drink. Both the live and dead algae are toxic. The toxins can affect the neurologic system causing convulsions and death, sometimes right next to the source. They can also affect the liver, causing a delayed syndrome of weight loss, and photosensitization (skin peeling in sparsely haired or white haired areas).

Perilla mint causes acute bovine pulmonary edema and emphysema (ABPE), usually in late summer. It grows in most of the central and eastern United States and is common in partial shade in sparsely wooded areas, and around barns and corrals. There is no treatment, so prevention is critical.

Cocklebur is an additional toxic plant that will grow in pastures. The two-leaf stage can cause acute liver failure, and if there is little other forage available due to prolonged drought/overgrazing, cattle may eat toxic amounts.

Now is the time to inspect areas in your pasture and along fence lines/barns for growth of any of these plants. Keeping a close watch may very well head off potential toxicities down the road. If you have any questions, contact your Extension agent, or contact me at [lstrick5@utk.edu](mailto:lstrick5@utk.edu), or 865 974 3538.