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Johnsongrass Poisoning in Horses



Johnsongrass is a drought-tolerant noxious weed that can infiltrate pastures and hayfields.

Photo: University of Kentucky's College of Agriculture, Food, and Environment

Johnsongrass (*Sorghum halepense*) is a drought-tolerant noxious weed that can infiltrate pastures and hayfields. Especially in pastures that are not mowed and maintained, drought conditions can cause many grass species to die off while Johnsongrass survives and flourishes. Horses grazing in such fields could ingest large amounts of Johnsongrass if supplemental hay is not provided.

All sorghums, including Johnsongrass, are associated with four major disease syndromes:

- Neuropathy (nerve damage) and teratogenesis (damaging effects to the fetus);
- Photosensitization;
- Nitrate intoxication; and
- Acute cyanide poisoning.

For cattle, nitrate and cyanide poisoning are the major concerns associated with Johnsongrass. However, for horses, neuropathy and teratogenesis are the most important risks; rarely, if ever, do photosensitization, nitrate, or acute cyanide poisoning occur due to Johnsongrass ingestion in horses.

In horses, clinical signs of toxicity can occur after a few weeks to months of continuously grazing Johnsongrass or other sorghums at any growth stage. Hay containing sorghums has also been incriminated. Horses gradually develop ataxia (incoordination), difficulty backing, and dribbling urine, progressing to flaccid paralysis of the tail and hind legs. Mares repeatedly open and close the vulva as if in heat and have continuous urine dribbling and hind leg scalding. Abortions and fetal malformations such as arthrogryposis (fused joints) can occur during any stage of pregnancy. And males exhibit an extended and relaxed penis and urinary incontinence in addition to ataxia.

The mechanism by which sorghums cause these problems is not well understood, but involves damage to the spinal cord and problems with innervations to the bladder and hind end. Inflammation of the bladder and sometimes the kidneys occurs. The condition is sporadic, and not all horses eating sorghums are affected. The amount of sorghum that needs to be ingested for clinical signs to occur has not been determined, but poisoning generally requires continuous exposure to large amounts of sorghum for several weeks or longer.

There is no specific treatment for the condition, but if sorghum is removed from the diet and treatment for bladder and kidney problems is initiated soon after the start of signs, some horses' conditions can improve. However, the nerve damage is permanent and once ataxia occurs, the prognosis is poor.

Prevention is important and includes minimizing exposure to Johnsongrass and other sorghums by controlling these plants in hayfields and pastures, and by not feeding hay containing sorghums.

Johnsongrass can be controlled in pastures by mowing and close grazing; control in hayfields is more problematic. Consult a weed extension specialist for more information on controlling Johnsongrass.

Cynthia Gaskill, DVM PhD, clinical veterinary toxicologist at the University of Kentucky Veterinary Diagnostic Laboratory, provided this information.