Slobbers or Slaframine Poisoning in Horses
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In the late spring, and more recently in July, veterinarians reported horses salivating profusely. Owners are often distraught by the strings of saliva hanging from the mouth and the large pool of saliva on the floor. Affected horses commonly show no abnormal clinical signs except the profuse frothy salivation, which is not life threatening. Clinical syndromes that can cause profuse salivation are: the virus disease, vesicular stomatitis; mechanical or chemical irritation of the mouth, e.g., by plant awns; or slaframine poisoning, most commonly associated with clover pasture or hay.

Vesicular stomatitis is a foreign animal disease affecting horses, cattle and swine. It causes oral vesicles marked by excessive salivation and chomping. Currently, outbreaks have occurred in Texas, New Mexico and Colorado. For more information on this outbreak, refer to http://www.aphis.usda.gov/lpa/pubs/fsheet_faq_notice/fs_ahvs.html

Mechanical or chemical irritation results from horses grazing on plants that have sharp awns, spines, burs or substances that cause irritation. The irritation can lead to excessive salivation with drooling or frothy saliva, or oral ulcers. Plants that cause mechanical irritation include burdock, foxtail barley, long-spined sandbur and raspberry canes. Foxtail barley has a sharp-pointed, bristly segment with forward pointing barbs. Since these barbs will only slide in one direction, they can easily become embedded in the tongue and gums where they act as a foreign body, stimulating excessive salivation and/or deep ulceration. Raspberry canes can cause similar lesions. This is seen occasionally when horses are fenced into woodlots with minimum access to more desirable forage. Microscopic examination of scrapings from the oral mucosa of affected horses may reveal awns in the irritated areas and provide a diagnosis. Plants that cause chemical irritation include buttercups and marsh marigolds.

Slaframine poisoning (Slobbers) (Figure 1) should be considered, especially in a cooler and wetter spring or fall. Spring and fall provide ideal environmental conditions for the proliferation of clovers in pastures. The cooler wet conditions are also ideal for the growth of the fungus Rhizoctonia leguminicola, commonly known as black patch. The fungus infects red clover (Trifolium pratense), white clover (Trifolium repens), alsike clover (Trifolium hybridum) and alfalfa. The name ‘black patch’ is derived from the bronze to black spots or rings observed on the leaves and stems. Rhizoctonia leguminicola
produces the mycotoxin slaframine or slobber factor. It can be present on both pasture and in stored dry hay. The fungus persists on infected fields from year to year. Slaframine can be active in stored hay for 10 months or more; however, its biological activity does decrease. Fresh hay can contain the equivalent of 50-100 ppm slaframine, which can decrease after 10 months by 10-fold to 7 ppm. Concentrations above 10 ppm may be associated with clinical signs (3). The analysis for slaframine (1-acetoxy-6-amino-octahydroindolizine) is not readily available.

The most common clinical signs observed in horses include: excess salivation, lacrimation, colic and diarrhea. One case reports abortion in a mare (4). Clinical signs often develop 1-3 hours after consumption of the contaminated forage and subside 48-72 hours after withdrawal from the offending forage. Atropine may provide symptomatic relief of salivation and diarrhea (3).

**Take Home Message**

• Slaframine poisoning is non life threatening.
• No treatment is necessary, except changing the feed.
• Clovers can be an excellent source of nutrients but are occasionally associated with excessive salivation, oral ulcers, laminitis, colic, photosensitization and liver failure.

**References**