University of Minnesota
EXTENSION
Horse Program

Plants Poisonous or Harmful to Horses

Field Horsetail and Brakenfern

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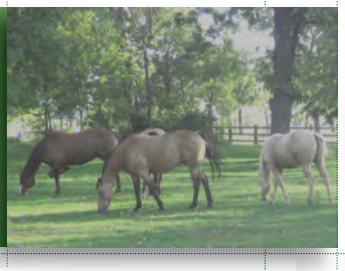

Providing research-based information to Minnesota horse owners

Field horsetail

Field Horsetail

Scientific Name: *Equisetum arvense.*

Also Known As: Scouring Rush.

Origin: Native to North America.

Lifecycle: Perennial (lasting 3 or more years); reproduces by creeping rhizomes (underground stems) and spores (reproductive structures).

Identification: Hollow, wiry, jointed stems, with 8 to 12 small, scale-like, whorled leaves. No flower is produced; instead, a cone-like structure is borne at the top of the stem. This cone-like structure houses millions of spores. Plants are 2 to 4 inches in height.

Distribution: Found throughout most of the United States, with the exception of the southeastern United States.

Habitat: Found in moist to wet soils, usually sandy or gravely in texture.

Control: Horsetail is a relativity slow-spreading, non-competitive weed but, once established, field horsetail is very difficult to control. Very few herbicides provide adequate control and tillage may actually increase plant density by spreading the rhizomes. Correcting drainage problems or fencing horses out of wet areas populated with horsetail may be the best control measures.

Brakenfern

Scientific Name: *Pteridium acquilinum.*

Origin: Native to North America.

Lifecycle: Perennial, reproduces by rhizomes and spores.

Identification: Fern-like leaf with plants reaching 1 to 4 feet in height. Spores are borne on the underside of each leaf in brownish bands.

Distribution: Found throughout the United States.

Brakenfern

Habitat: Found in open pastures and woodlands, particularly on acid soils.

Control: Some herbicides exist for suppression and control of brakenfern but multiple treatments may be required. When using a herbicide, be sure to carefully follow all grazing restrictions and other pertinent information stated on the herbicide label.

Both Plants

Toxin: Brackenfern has several toxic syndromes in different species. This fact sheet focuses on the neurological syndrome in horses. Brackenfern contains a type I thiaminase enzyme. This enzyme both destroys thiamine and creates a thiamine analog. The analog appears to be absorbed and then interferes with a number of thiamine-requiring physiological processes. Field horsetail also contains thiaminase activity.

When Toxic: In both plants, the thiaminase enzyme activity is found in the plant tissues and is toxic when eaten fresh (in pasture) or dried in hay.

Toxicity: A diet comprised of 20 to 25% bracken fern or field horsetail consumed for approximately three weeks is associated with neurological signs in horses. Clinical signs may develop after a week to ten days in horses ingesting a diet of nearly 100% bracken or horsetail.

Signs and Effects of Toxicosis: Horses develop depression, constipation, and an unsteady gait usually in one to two days. Clinical signs progress to an unsteady gait, muscle twitching, going down, paddling, and seizing for a period of a week or more.

Treatment: Thiamine at 0.5 to 1 gram initially, then decreasing daily doses for three to five days.

Thanks to the following fact sheet reviewers: Ron Genrick, Assurance Feeds and Harlan Anderson, DVM.
Photos provided by Krishona Martinson, PhD, University of Minnesota Extension and the University of Minnesota Strand Memorial Herbarium.

In Partnership...

This fact sheet was funded by the Minnesota Racing Commission

University of Minnesota Extension

Minnesota Equine Research Center
College of Veterinary Medicine
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