USDA United States Department of Agriculture

Illinois Grazing Manual Fact Sheet

SPECIES • POISONOUS PLANTS

Horsetails and Scouring Rushes

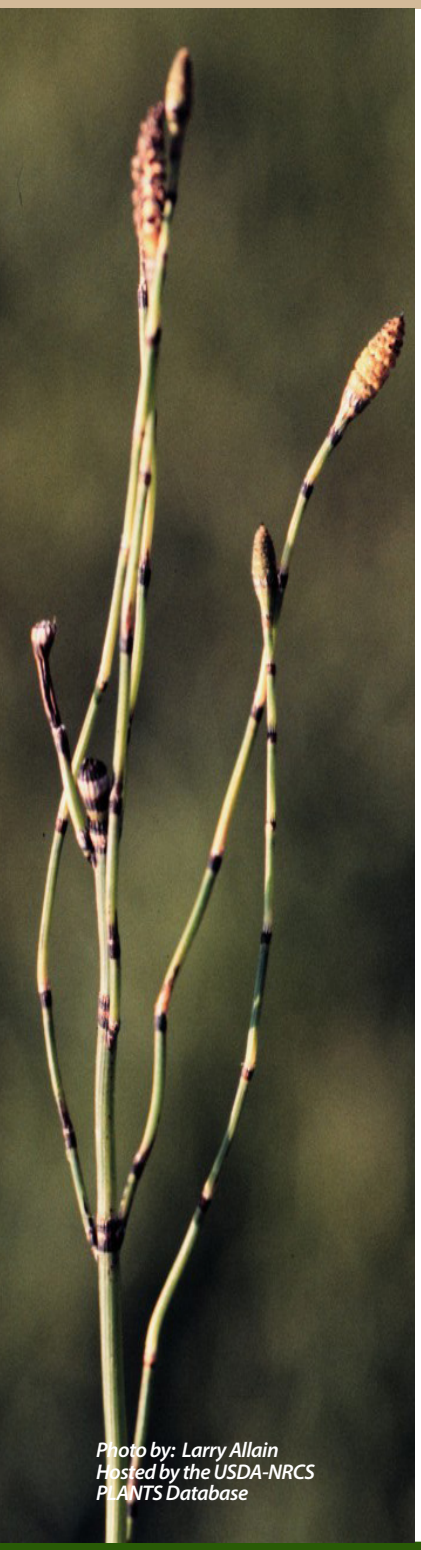

Photo by: Larry Allain
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Usually found in moist, open pastures and meadows.

Description

Equisetum species: Horsetails are small rush-like plants with jointed stems and whorled branches. The aerial stems, usually less than 3 feet tall, arise from much-branched under-ground stems called rhizomes. Aerial stems may be evergreen and perennial, or they may be annual and die at the frosts of autumn. Although the stems appear to be leafless, tiny leaves are found at the nodes or joints. They are fused on the margins but have free tips, and soon become blackish and scale-like. The number of leaves is the same as the number of ridges on the stem. Cones are borne at the tips of the stems. In the common horsetail (Equisetum arvense L.), there are two kinds of stems, sterile and fertile. The sterile stems are green and much-branched. Fertile stems, which appear in early spring, are brownish and support a single cone at the apex of each stem. These stems die after the spores are shed from the cones.

Occurrence

Horsetails grow in damp and wet places. The common horsetail also often grows in railroad ballast. It is a cosmopolitan plant found throughout most of the United States and Canada. Three other species occurring in the Midwest are reported to be poisonous. These are the tall scouring rush (Equisetum hyemale L.), smooth scouring rush (Equisetum laevigatum A. Br.), and marsh horsetail (Equisetum palustre L.). The tall scouring rush and smooth scouring rush are widespread in the Midwest. The marsh horsetail ranges from Quebec, Ontario, and Minnesota, south to Maine, Vermont, and Illinois. It also occurs from Alaska south to Montana and California. Some equisetums are called scouring rush because the stems contain silica and were used by the pioneer women as a scouring material for cleaning pots and pans.

Conditions of Poisoning

Horsetails are troublesome as poisonous plants, especially when they are abundant in hay. There is some evidence that horses are less susceptible than sheep and cattle to the toxic principle in green plants. Equisetum palustre may be lethal to cattle, but Equisetum arvense is rarely if ever lethal. Horsetail poisoning in horses may be distinguished from bracken poisoning because animals poisoned with horsetails maintain their appetites even after clinical signs appear.

Toxic Principles

Extracts of equisetum possess thiaminase activity. Some authorities believe that the toxic principle in these plants also has other actions.

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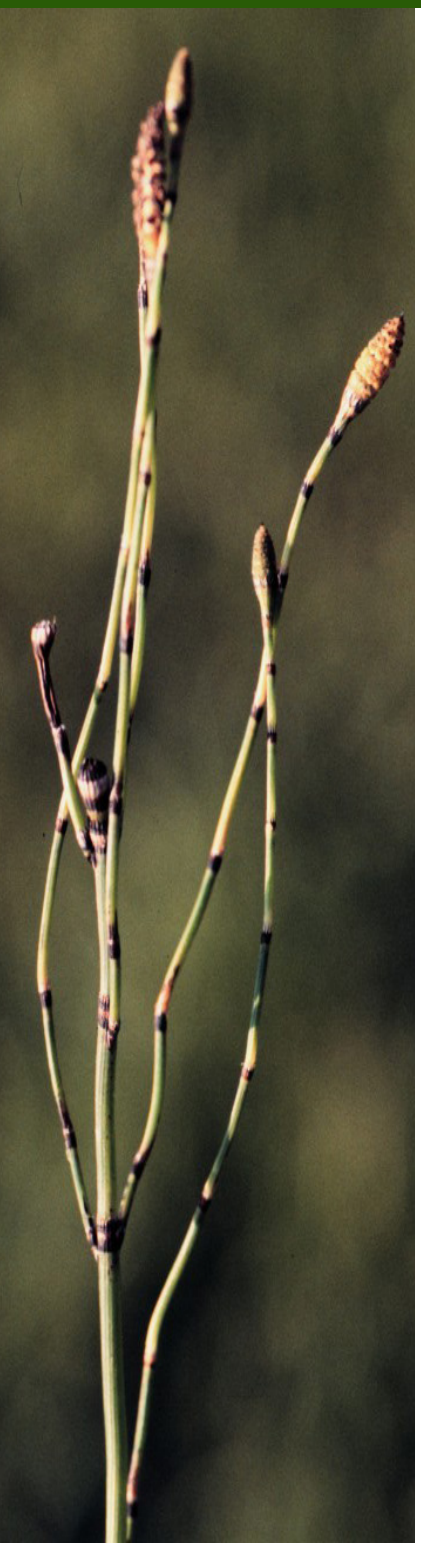

Clinical Signs

Animals poisoned by eating horsetails may die within a few hours after signs of poisoning appear, but they usually live several days or even weeks. Unthriftiness, excitability, loss of condition, staggering gait, rapid pulse, difficult breathing, diarrhea, and emaciation may be noted. Death is preceded by convulsions and coma. Lowered milk production in cows and trembling in sheep have also been observed.

Necropsy

Specific lesions caused by the toxic principle have never been reported.

Treatment

If horsetail poisoning is suspected, a change to uncontaminated hay should be made at once. Thiamine hydrochloride (0.25 to 0.5 milligram per kilogram of body weight) pro-duces dramatic improvement in horses but is less successful in relieving clinical signs in ruminants.

References

Evers, Robert A., and Roger P. Link. Poisonous Plants of the Midwest and Their Effects on Livestock, 1972. Special Publication 24, College of Agriculture, University of Illinois at Urbana-Champaign.

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