Common Plants Poisonous to Horses
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According to Webster’s Dictionary (1989), a poison is a substance that through direct contact with tissues or through absorption into the circulatory system can result in adverse reaction, illness or death of an animal. Many plants commonly found in pastures and on farms can be poisonous to horses. Horses are at greatest risk for plant poisoning when little forage is available, such as during the winter months, drought or when pastures are overgrazed. Poisoning can also occur when plant clippings are thrown into pastures or when hay is contaminated with poisonous plants. Although most poisonings occur when large amounts are ingested, some plants are toxic when only a mouthful is consumed, while others cause a reaction upon contact with the skin. The list below contains some of the poisonous plants with which horses most commonly come in contact.

**Alsike Clover** (*Trifolium hybridum*): small, round, 3-leaved clover with white and pink flowers. Differentiating alsike clover from white clover can be difficult, especially when looking at the flowers. Careful examination of the leaves will show alsike clover to have a completely green leaf, while white clover has small white markings (chevrons) on the upper-side of the leaf. Toxin: unknown, but possibly a mycotoxin or plant metabolites produced under wet, humid conditions. Symptoms: Swelling, blistering and lesions on thinly haired, white-skinned areas, such as the lips, nose and lower legs/feet. Sometimes termed “dew poisoning”. Occurrence: Occasionally throughout the year during wet, humid conditions. Horses typically recover quickly when conditions are dry or when removed from pastures containing alsike clover.

**Black Locust** (*Robinia pseudoacacia*): Moderate-sized tree (up to ~50 feet) with alternate, oval-shaped leaflets and a dark, rough bark. White to cream colored flower clusters are produced in the spring. A flat brown pod containing 4 to 8 kidney-shaped ‘beans’ is also produced. Trees usually form in a thicket, especially in fence rows. Toxin: robin (a phytotoxin); found in all above ground parts of the plant. Symptoms: Horses may stand splay-legged and experience an irregular heartbeat, shallow breathing, depression, dilated pupils and have yellowish mucous membranes. Often suffer from colic and diarrhea. Occurrence: Usually occurs from horses chewing bark. Symptoms have resulted when a horse consumed as little as 0.04% of its body weight in bark (0.4 pound of bark for a 1000 pounds of body weight).
**Black Walnut** (*Juglans nigra*): A large tree growing 30 to 65 feet tall. Produces edible nuts. Black walnut wood is a dark hardwood.
Toxin: unknown, but possibly juglone
Symptoms: Often arise when animals are bedded on shavings containing as little as 5 to 20% black walnut. Horses usually develop laminitis, with symptoms appearing 8 to 24 hours after initial contact. Additional symptoms can include anorexia, lethargy, depression and/or edema of lower legs. Less common symptoms are colic, respiratory distress, but rarely death.
Occurrence: Typically a low risk, but avoiding bedding containing black walnut shavings is imperative. Research has indicated that poisoning may not be a result of skin or hoof contact with the shavings and may be due to inhalation or ingestion of the toxin. Pastures containing black walnut trees may pose a risk, especially in the spring during pollen shedding and in the autumn when leaves are shed.

**Buttercups** (*Ranunculus spp.*): Flowers are bright yellow with 5 petals. Edges of the leaves are coarsely toothed. Found primarily in wet areas throughout North America.
Toxin: ranunculin (a glycoside), which forms the blistering agent protoanemonin when the plant is chewed or crushed.
Symptoms: Excessive salivation, mild colic and diarrhea in varying degrees. May cause lesions and blisters on the skin, especially the around the mouth.
Occurrence: Only the fresh plant is poisonous.
Note: Other plants contain protoanemonin and, when consumed, may result in similar symptoms. These plants include clematis (*Clematis spp.*) and anemone (*Ranunculus spp.*).

**Johnson grass** (*Sorghum halepense*) and **Sudan grass** (*Sorghum sudanense*): Johnson grass is a tall, coarse grass (3 to 6 feet tall) with long leaves (1.5 feet) long and “flowers” (seedheads) at the top. Sudan grass is similar in appearance to johnson grass, but with broader, corn-like leaves.
Toxin: hydrocyanic (prussic) acid and glycosides (drought or frost convert the glycosides to cyanide)
Symptoms: Incoordination of the hindquarters, urinary incontinence, weight loss, difficulty breathing, general weakness. Death may occur if horses are not removed from the plant.
Occurrence: Generally occurs when consumed over long periods; effects are intensified by drought or frost.

**Red Maple** (*Acer rubrum*): Common tree that can grow as tall as 100 feet. Leaves have 3 to 5 lobes and are shiny green on the upper side during late spring and summer. In the fall, they turn a brilliant red.
Toxin: unknown
Symptoms: Acute hemolytic anemia, weakness, rapid breathing, depression, brown urine, very dark blood and decreased hematocrit. Poisoning can also cause pregnant mares to abort without showing signs of hemolytic anemia. Death can occur within a few days after the horse ingests 3000 ppm (3 pounds per 1000 pounds of body weight).
Occurrence: Poisoning occurs when horses eat dried or wilted leaves in the fall (not green leaves). Once dried, the leaves can remain poisonous for up to 30 days. The bark is also poisonous.
St. John’s Wort (*Hypericum perforatum*): Herb growing approximately 3 feet tall with spotted leaves. The spots are translucent when held to light. Flowers are bright yellow with 5 petals and occur in clusters of 2 to 5. The flower petals also have black dots on the edges. Toxin: hypericin and hypericum (fluorescent substances) occurring in the black glandular dots on the flowers.

Symptoms: Swelling, blistering, lesions on unprotected, non-pigmented skin, hair loss and scabs. Animals seriously affected will whirl their limbs and lose their appetite, and may experience blindness, staggering, convulsions, sometimes coma and death. Symptoms may appear 2 to 14 days after ingestion.

Occurrence: Poisoning occurs in white or light colored animals (or animals with large white areas). The toxin must be exposed to ultraviolet rays. The plant is toxic at all stages of maturity, but young plants are the most palatable. Poisoning may also occur in hay containing St. John’s Wort, as the toxin is still active when the plant is dried.

Tall Fescue (*Festuca arundinacea*): A cool season bunch grass. Common pasture and hay crop. Leaves are ribbed, shiny, and dark green with serrated edges (not usually visible to the naked eye, but easily felt). Comes in several varieties, but endophyte infected fescue withstands close grazing and drought conditions.

Toxin: The plant itself is not toxic, but rather the endophyte fungus (*Acremonium coenophialum*) growing on the infected variety results in toxicosis.

Symptoms: Pregnant mares are at an increased risk for prolonged gestation (≥ 12 months), lack of udder development and milk production, thickened placenta, dystocia, retained placenta, and abortion. Placenta may prematurely separate from uterus. Foals are usually malpositioned at birth, may be stillborn or born weak, and have difficulty breathing.

Occurrence: Common in areas with pastures containing endophyte infected fescue and in hay containing endophyte infected fescue, as the endophyte remains toxic when the plant is dry. Removing pregnant mares from infected pastures at least 30 days prior to foaling can reduce the effects. A specific medication, domperidone, is available through veterinarians for administration pre- and post-foaling to help reduce the effects.

Wild Cherry (*Prunus serotina*) and Elderberry (*Sambucus canadensis*): Wild cherry trees have brown-gray bark (mature plant) producing white or pink flowers and dark red to black/purple fruit. Elderberry is a woody shrub (6-10 feet) commonly found in open areas in soils surrounding ponds, streams and ditches. Produces small, five-petal white flowers are produced in the spring and drooping clusters of dark purple or red berries form from the summer and early autumn.

Toxin: hydrocyanic (prussic) acid

Symptoms: Usually death is so quick, symptoms are not seen. Nevertheless, symptoms can include staggering, uneasiness, convulsions, agitation, and difficulty breathing.

Occurrence: Plants are poisonous when leaves are frost bitten or wilted after being cut or blown down.

Yew (*Taxus spp.*): Evergreen shrub used throughout North America as an ornamental plant. These shrubs have dark green, pointy, stiff leaves approximately 0.5 to 2.7 inches. The leaves are closely spaced and alternate. Red to yellow fruit resembling berries are produced and contain the seed.

Toxin: taxine (an alkaloid)

Symptoms: Incoordination, nervousness, difficulty breathing, diarrhea and convulsions. However, the most commonly observed sign of yew poisoning is sudden death.

Occurrence: Poisoning is rare and usually occurs when clippings are accessible to horses. Horses are extremely susceptible to yew poisoning. All parts of the plant are poisonous, with the exception of the flesh of the fruit surrounding the seed. Very little of the plant needs to be consumed for death to occur (~4 to 5 ounces for an average size riding horse).
Summary
Various plants found in and around pastures and hay fields can be poisonous to horses. Suspect plants should be positively identified by taking a plant sample, preferably with flowers and/or seeds to the local extension office or horticulturist. Once identified as a toxic plant, steps should be taken to remove all portions of the plant from horse pastures. When possible, hay should inspected to ensure that it is free of weeds and undesirable plants. If plant poisoning is suspected, a veterinarian should be called immediately for a definitive diagnosis and treatment.

References


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