

## Equine Toxicity Series: Problematic Plants to Horses

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The United States is home to numerous poisonous plants to horses. Some are rare, but most are common weeds and trees. The toxicity of the plant generally depends on soil, climate and life stage of the plant as well as the horse's age, weight and tolerance. Normally, a horse must ingest a large amount of the plant before toxicity occurs, while others require only a slight nibble or repeated grazing to be deadly. Most poisonous plants have low palatability, and horses tend to avoid them. However, when they are hungry, horses will eat anything they can access. The most common cause of ingestion is hunger when a horse is on an overgrazed pasture or its nutrition is not balanced. In addition to pasture plants, toxins can also be found in hay, contaminated grain, ornamentals and clippings.

### Buttercup (*Ranunculus* spp.)

Buttercups are highly invasive species that tend to grow in pastures with little grass due to overgrazing and poor soil. Buttercup toxicity is not life-threatening, but it still poses a risk. The plants contain glycoside ranunculin, which is a contact toxin that causes irritation. The flowers contain the greatest amount of toxin, making the plant most toxic during flowering. The irritating effects of the toxin are heightened by water, so after rain, horses are more susceptible. When it contacts sensitive skin such as the lips, muzzle and lower limbs, contact dermatitis occurs. The lower legs are also susceptible to irritation. Horses rarely ingest buttercups as they are not highly palatable, but when grass is short, the plants become tempting. Signs of buttercup toxicity from ingestion include increased salivation, colic and diarrhea.

### Prevention

Buttercup poisoning is easily treatable by removing the horse from the source. Dermatitis caused by the toxin should be treated with an antibiotic cream. Contact your veterinarian to create a treatment plan. Pastures can be sprayed for buttercups when they are actively growing before they flower. If buttercups are not able to be removed from the pasture, make sure adequate hay is provided to reduce temptation to graze on buttercups.



Figure 1. Buttercup (*Ranunculus* spp.)

## Tall Fescue Grass (*Festuca arundinacea*)

Tall fescue is a cool-season perennial grass that grows across the United States. Broodmares are the only class of horses susceptible to tall fescue toxicosis. Non-pregnant horses can graze on endophyte-infected tall fescue with no side effects. When fescue becomes infected with an endophyte fungus, it affects pregnant mares. The fungus can lower conception rates, prolong gestation times leading to large foals, cause abortions or stillbirths, and thicken placentas. Additionally, the endophyte causes decreased prolactin levels, in turn decreasing colostrum and milk production.

### Treatment/Prevention

Treatment is available for broodmares who have ingested tall fescue. Domperidone can be given and improves milk production. It also stimulates prolactin production. This drug should be given two weeks before foaling and continued two weeks after foaling. A veterinarian should be consulted before administering medication. Although consumption of fescue is not lethal, the best practice is to keep pregnant mares off the grass. Pregnant mares should be taken off fescue grass or hay 30 days prior to breeding and at least 60-90 days before foaling. Mare and foal should be kept off fescue until the foal is weaned.



Figure 2: Tall Fescue Grass (*Festuca arundinacea*)

## Foxtail (*Setaria* spp.)

Foxtail seed heads have yellow-brown bristles and can be contained within hay. They do not produce a chemical toxin but cause severe physical damage when ingested. The microscopic barbs on the seed head can cause ulcers (commonly called hay blisters). These barbs can also cause irritation in the gastrointestinal tract and can occasionally damage the skin.

### Prevention

If ulcers are observed on a horse's mouth or gums, the horse should be taken off that hay immediately and the rest of the bale should be inspected. The ulcers will heal if the horse is removed from the source. If consumed over a long period of time, weight loss can occur. Hay should be inspected for foxtail before being fed. Foxtail is difficult to control, but keeping pastures mowed will help reduce growth.

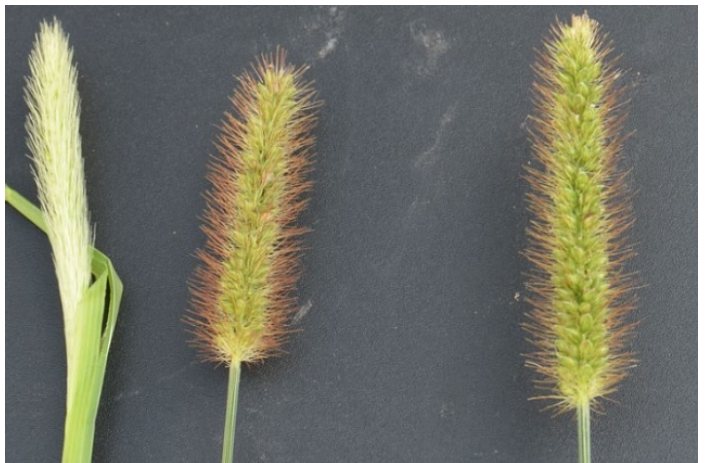


Figure 3: Foxtail seed heads (*Setaria* spp.). Photo courtesy of N. Rhodes, University of Tennessee Institute of Agriculture.

## Clover (*Trifolium pretense* and *Trifolium repens*)

Red and white clover tend to flourish during cooler, moist weather. The plants themselves are nontoxic; however, a fungus that commonly grows on them contains the toxin slaframine. Slaframine stimulates the salivary glands in horses and causes excessive drooling. This condition in horses is known as “slobbers.” It is not life-threatening; only unpleasant.

### Prevention

Slaframine toxin can cause problems in the pasture or in hay. The easiest solution is to remove the horse from the source. If pasture clover is the offender, the pasture can be treated with a broad leaf herbicide to eliminate any clover.

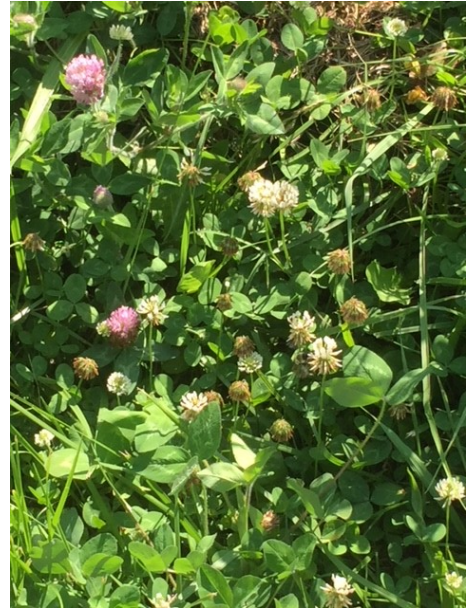


Figure 4: Red and White Clover (*Trifolium pretense* and *Trifolium repens*)

### What to Do?

If you suspect any toxicity, remove the horse from the source and immediately call your veterinarian. Attempt to determine how much was ingested as this will help the veterinarian create a treatment plan. Some toxins have antidotes specific to the plant while others are treated symptomatically. Do not attempt to treat your horse without consulting your veterinarian. Some general signs of poisoning include difficulty swallowing or breathing, colic, laminitis, incoordination and weakness, stocking up, photosensitivity, and sudden death. To help prevent accidental poisoning, ensure your horse has access to an adequate amount of forage to discourage grazing weeds. Make sure pastures are not overgrazed so that weeds do not invade and begin to look appetizing to the horse. Only buy hay and grain from reputable sources and inspect the hay and grain before feeding. It is important as a horse owner to have a general idea of poisonous plants. Resources to help identify toxic plants include your veterinarian, local extension agent, local universities, as well as florists and botanists.

### References

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