



FACT SHEET

Department of Animal Science, University of
Connecticut

Effective Horse Management - Horse Health Series

Red Maple Toxicity and Your Horse

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Many horse owners have concerns about red maple disease in horses. Fortunately, it is not that common and often easy to prevent. It's really not necessary to just go out and cut down all of your maple trees.

Red maple trees are common in Connecticut, across the eastern United States plus Canada and as far west as Texas and Minnesota. They can tolerate from very dry to very wet conditions. The scientific name for red maple is *Acer rubrum*. It is also known as the swamp maple, water maple or soft maple. These trees grow up to 100 feet tall and have an umbrella shaped top. The red maple has light gray bark with reddish brown wood. The leaves are green on top and whitish underneath. The veins in their leaves are red and their leaves are jagged rather than scalloped like the sugar maple. In fall the leaves will be orange, red or yellow. Tiny yellowish red flowers with 5 petals appear in spring in the red maple. All maple trees also have fruit with wings that ripen in the spring and may fall where horses can access it.

Fresh red maple leaves are NOT toxic to horses, but wilted or dried leaves and the bark are extremely toxic. Just over three pounds (1.5 kg) is a poisonous dose and consumption of this amount will cause horses to become very sick. A known case of fatal poisoning in ponies involved consumption of 3 kg (6.6 lb) of red maple leaves over 1-5 days. Remember that an average 1,000 lb horse eats about 15-20 lb of forage per day. Luckily, most horses do not want to eat the dry leaves that fall unless they are not getting enough hay or other palatable forage. If a horse is unable to eat forage due to bad teeth or old age, they will be at risk because they may crave forage and even eat bark to get it. Also, young horses are at greater risk because they tend to be more adventurous when eating.

Red maple contains three toxins that may negatively affect horses. Gallic acid, an oxidant and tannins also found in oak trees, cause destruction of red blood cells, called hemolysis.

Pyrogallol, the third toxin found in the red maple, causes methemoglobinemia, which prevents red blood cells from carrying oxygen.

The combination of loss of red blood cells due to hemolysis and dysfunctional cells due to methemoglobinemia causes symptoms of weakness, depression, colic and laminitis. Horses may also develop pale gums, rapid heart rate and flared nostrils due to insufficient oxygen in the body. They may also have red-brown urine due to the red blood cells that were hemolyzed being filtered out by the kidneys. Another sign would be muddy brown mucus membranes due to the presence of methemoglobinemia.

If you realize your horse has eaten red maple leaves, tell your veterinarian immediately. The veterinarian will likely give the horse activated charcoal or mineral oil to prevent the toxins from being absorbed into their blood. Because horses may not want to drink if they do not feel well, it will also most likely be given IV fluids to prevent dehydration. This may prevent kidney damage from the red cell remains being filtered so it will help to improve the situation. In severe cases, the horse may need a blood transfusion but that is reserved for when it is absolutely necessary since there is no perfect match for blood type in horses.

Here are some ways to prevent maple toxicity in horses:

- 🕒 Provide plenty of good quality forage that is safe and tasty to your horse. This should help to keep the horse from eating dried or wilted maple leaves or bark.
- 🕒 After a storm, check your pasture even if you don't have red maples, just in case red maple debris blew onto your land. Remove any branches or leaves.
- 🕒 Inspect your hay for leaves, if you see red maple leaves, do not feed that hay to horses.

If you are proactive and give your horse sufficient forage, it should help to prevent red maple poisoning. Stay vigilant after storms to help prevent this sometimes fatal disease from affecting your horse. You do not need to cut down all of your maple trees, just perform regular inspections and have a plan to manage fallen leaves in autumn. Stay safe! Please call (860) 486-4471 or email jenifer.nadeau@uconn.edu if you have any questions. Also, check out my web site <https://animalscience.cahnr.uconn.edu/uconn-equine-extension-program/> for more information on upcoming horse specialist events and other information. Here is a link to some fact sheets that may be of interest <https://animalscience.cahnr.uconn.edu/fact-sheets/>. Thanks, and have fun with your horses!

Sources:

1. Sandra M. Burger and the editors of Breakthrough Publications in consultation with Anthony P. Knight. Horse Owner's Field Guide to Toxic Plants. 1996. Breakthrough Publications, NY.
2. George E. Burrows and Ronald J. Tyrl. Toxic Plants of North America. 2001. Iowa State University Press, IA.
3. Anthony P. Knight and Richard G. Walter. A Guide to Plant Poisoning of Animals in North America. 2001. Teton New Media, WY.
4. Melissa Mazan. The Truth About Maple Leaf Toxicity. 2022. <https://vet.tufts.edu/news-events/news/truth-about-red-maple-leaf-toxicity> Accessed 8/8/24.

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