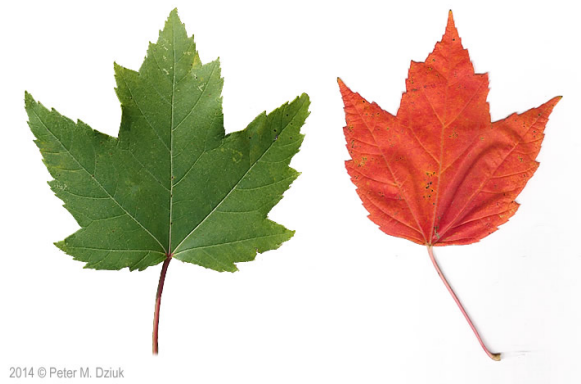


Red Maple Toxicity

Dr. Kathy Samley

Red maple leaves (*Acer rubrum*) are toxic to horses. The fresh leaves themselves are safe, but they become toxic after the leaves have wilted. The wilted leaves can remain toxic for up to 30 days. Red maple leaf toxicity is common in the fall when the leaves begin to wilt and accumulate on the ground.



Clinical signs

A 1000# horse will develop clinical signs after ingesting at least 1.5 lbs of wilted red maple leaves. A toxic component of red maple leaves damages the horse's red blood cells. The red blood cells eventually become lysed, which causes the horse's packed cell volume (percentage of red blood cells in the blood) to decrease rapidly as the red blood cells are destroyed. Hemoglobin, a component of red blood cells, is filtered out by the kidneys into the urine and causes the urine to turn a dark red color. Hemoglobin is damaging to kidneys, leading to acute renal failure. Common clinical signs of red maple toxicity in horses are depression, jaundice, fever, dark red urine, and colic.

Diagnosis

A physical exam is important to assess the status of the horse. Bloodwork and urinalysis can be used to confirm the diagnosis as well as assess how far the toxicity has progressed. Horses with hemolytic anemia due to red maple toxicity have hemoglobinemia (red-tinged serum), as well as signs of hemoglobin in their urine. Bilirubin will be elevated in the blood due to the hemolysis. Kidney values (BUN and creatinine) are often elevated depending on the amount of renal compromise.

Treatment

If you suspect your horse has ingested red maple leaves a veterinarian should be called as soon as possible. If in the acute phase, activated charcoal may be administered through a nasogastric tube in order to help absorb the toxins. In most cases, hospitalization is necessary as the horse usually requires close monitoring, IV fluids, and critical care. A blood transfusion is often necessary if the horse's packed cell volume is extremely low. Intravenous fluids are important to diurese the kidneys if they are showing signs of damage from hemoglobin. Vitamin C, vitamin E, and selenium can help treat the oxidative damage from the toxins.

Prognosis

Prognosis is guarded to poor, as horses can develop many secondary complications including acute renal failure, colic, and laminitis. Hospitalization and intensive care provide the best possibility of recovery. Early diagnosis and treatment is critical.