



## **Common Poisonous Plants of Concern for Wisconsin's Livestock**

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While most plants are safe for consumption by livestock, a few plant species can sicken or even kill animals. This publication overviews what poisonous plants are and under what conditions they can be toxic to livestock. A detailed list of common poisonous plants found in Wisconsin along with a description of the level of toxicity and resulting symptoms of ingestion is also included as a reference. If plant poisoning is suspected contact a veterinarian or other specialist immediately, as a rapid response is often required to prevent serious injury or death.

### **What Makes a Plant Poisonous?**

The level of poisoning is determined by the amount of the toxic plant consumed, size and species of the animal, general health of the animal, and concentration of the toxin in the plant part. Symptoms may vary from the inability to perform to fullest potential to more serious manifestations, including slobbering, tremors, lack of coordination, erratic behavior, convulsions, or even sudden death. The level of toxicity in animals can vary over time due to the irregularity in animal ingestion, but also can be due to the variability in the amount of the toxic compound present in a plant. The presence of a toxic compound can vary dramatically depending on environmental conditions, management of the pasture, and even can be dependent on the plant part that is eaten (e.g. leaves, stems, roots, fruit, and even seeds). Thus toxicity is the result of many factors that can make diagnosis and determination of the level of seriousness difficult to determine. For simplicity we separate poisonous plants common to the upper Midwest into three categories:

1. Highly toxic— small amounts (<5% of feed) can result in serious injury/death.
2. Moderately toxic— moderate amounts (>5% - 25%) can result in injury/death.
3. Mildly toxic— under certain environmental or management conditions these plants can be toxic.

## When Should I Be Cautious

Fortunately the concern about toxicity is often a result of specific situations. Understanding what conditions can lead to plant poisoning can help reduce the risk of harm or death in susceptible herds. If any of these issues apply to you we recommend management practices to alleviate poisonous plants of concern.

**First grazing in the spring.** When animals are put onto pasture for the first time in spring, poisonous plant tissue is young and more palatable. Livestock can feed on these plants at this time, especially if other desirable forage (e.g. forage grasses) hasn't started to grow. To avoid this scenario we recommend controlling poisonous plants or not allowing animals into these areas until ample desirable forage is present to reduce the risk of animals feeding on poisonous plants.

**Limited desirable forage available.** When animals are hungry, for any number of reasons, their selectivity decreases and they may eat plants they'd otherwise avoid. Make sure adequate forage is available, especially when poisonous plants are present. This is common especially under drought conditions, in the fall, or when pastures are overgrazed.

**After an herbicide application.** Many weeds are not palatable and are avoided, but after an herbicide application their palatability can increase dramatically. If poisonous plants are treated with an herbicide we recommend not grazing for at least a 14-day period to avoid this occurrence. Read the product label for more specific recommendations and always follow label directions.

**After application of nitrogen.** Fields with an abundance of nitrate-accumulating plants including pigweeds, common lamb's quarters, and common ragweed can become toxic after fields are fertilized or following drought conditions. These common weeds take up excessive nitrogen and convert it to nitrate. If enough of these weeds are eaten this can result in nitrate toxicity. If these weeds are present and consist of at least 20% of the feed in a fertilized field, they should be controlled before allowing animals to graze.

**Yard waste/clippings.** Many ornamental shrubs and plants are both highly toxic and palatable to livestock. Avoid feeding or dumping yard waste/clippings into pastures or animal holding areas, as this is one of the most common scenarios for livestock poisoning in the Upper Midwest.

**Animals unfamiliar to a pasture or other area.** Animals that are being boarded at a new location are often susceptible to poisoning. When grazing a new area or newly seeded pasture, introduce animals gradually and monitor for any physical changes or change in behavior.

**Toxic plants in harvested forages.** Few options exist for preventing the presence of poisonous plants in purchased hay. To make matters worse it is difficult for animals to avoid poisonous plants when they are dried and mixed with desirable forage. Knowledge of the source of the hay is the only realistic way to prevent this situation.

## Common Poisonous Plants in Wisconsin

Prevention is always the best policy and the purpose of this paper is to point out some of the plants that are potentially harmful to livestock so that measures to avoid or at least minimize animal exposure. If control measures are needed, contact your county agricultural extension educator for assistance. If animals exhibit unusual symptoms, call a veterinarian.

**Table 1:** Highly Poisonous plants common to Wisconsin (<5% of feed can result in serious injury/death).

Plant	Cattle	Pigs	Sheep	Horses	Symptoms	Amount necessary for poisoning/Comments
Choke-Cherry (Prunus spp.)	X	X	X	X	Sudden death is the most common symptom. Live animals may exhibit rapid breathing, frothing at the mouth, dilated pupils, tremors and convulsions.	0.25% of body weight consumed in green, wilted, or dead leaves will likely lead to death, in as little as 30 minutes.
Black locust	X		X	X	Irregular heart rate, pale mucous membranes, light breathing, depression, abdominal pain, diarrhea, death is not uncommon.	As little as 0.1% of body weight eaten in bark can poison horses. Cattle less susceptible. Bark and seeds are most poisonous, but all parts can be toxic.
Cocklebur	X	X	X	X	Convulsions, depression, reluctance to move, hunched back, blindness, recumbancy, death.	0.75% to 3% of body weight eaten when plants are young (seedlings) can result in death. Young leaves and seeds are most poisonous.
Jimson-weed	X	X	X	X	Decreased respiratory and heart rates, muscle weakness, dilated pupils, colic, watery diarrhea. Rupture of stomach in horses. Respiratory paralysis and death.	0.1% to 0.3% of body weight eaten in green plants results in poisoning. Larger amounts can be fatal.
Milkweed spp.	X		X	X	Depression, slowed respiratory rate, pain and inability to stand, tremors, staggering gate, weak and rapid pulse, colic, dilated pupils.	0.05% to 5% of body weight eaten in green plants can be fatal. Toxicity varies with species, but all have the potential to be fatal.
Poison hemlock	X	X	X	X	Salivation, abdominal pain, muscle tremors, incoordination, labored breathing, weak pulse, frequent evacuation, death.	As little as 0.5% of body weight of hemlock can be fatal. Can cause skeletal defects in fetal calves if grazed by pregnant cows.
Red maple				X	Weakness, increased respiratory and heart rates, red-brown colored urine, fever, death. (hemolytic anemia). Mares may abort even without symptoms of anemia.	As little as 1.5 kg of dried or wilted leaves eaten over 1-5 days can be fatal. Bark also poisonous.
White snakeroot	X		X	X	Listlessness, depression, lethargic, hesitant to move, muscle tremors (especially in cattle).	0.5% to 1.5% of body weight in green plant. If livestock exhibit "trembles", death is likely. Toxin secreted in milk; can poison calves and humans.

**Table 2:** Moderately poisonous plants common to Wisconsin (>5% - 25% of feed can result in injury/death).

Plant	Cattle	Pigs	Sheep	Horses	Symptoms	Amount necessary for poisoning/Comments
Horsetail			X	X	Diarrhea, weight loss, hind leg incoordination, decreased milk production.	Hay that is 20% horsetail can cause symptoms. Continued ingestion for 1-2 months can cause death.
Eastern black nightshade	X	X	X	X	Depression, decreased heart and respiratory rate, muscle weakness, watery diarrhea, paralysis of hind legs ("sitting dog").	Toxicity varies with plant parts, but is concentrated in berries. Immature plants considerably more poisonous with toxic alkaloids remaining active in dry hay. Can range from 1-3 days of illness to death.
Horsenettle	X	X	X	X	Depression, decreased heart and respiratory rate, muscle weakness, watery diarrhea, paralysis of hind legs ("sitting dog").	Toxicity varies with plant parts, but is concentrated in berries with unripe berries being more toxic. Can range from 1-3 days of illness to sudden death.
Climbing nightshade	X		X	X	Depression, decreased heart and respiratory rate, muscle weakness, watery diarrhea, paralysis of hind legs ("sitting dog").	Toxicity varies with plant parts, but is concentrated in green, unripe berries though vegetation is also toxic. Can range from 1-3 days of illness to sudden death.
Oaks	X	X	X	X	Lack of appetite, depression, abdominal pain (teeth grinding and hunched back), black and tarry diarrhea, liver and kidney damage, death in some cases.	Assumed that large quantities over time cause poisoning though some cases report death after only hours of ingestion. All parts of plant are toxic, young leaves and acorns primarily. Calves born to cows feeding on acorns can exhibit defects.
St. johnswort	X	X	X	X	Severe sunburn (photosensitivity), intense itching, swollen eyelids, blindness, starvation, fever, increased heart rate and respiration, diarrhea, shade seeking.	Toxic dose unknown. All parts of the plant that bear black dots are poisonous. Death is unlikely unless by secondary infection.

**Table 3:** Mildly poisonous plants common to Wisconsin (moderate amounts mildly toxic or plants toxic under certain conditions).

Plant	Cattle	Pigs	Sheep	Horses	Symptoms	Amount necessary for poisoning/Comments
Buttercup spp.	X	X	X	X	Reddening of oral mucous membrane, salivation, diarrhea. Bitter milk or blood in milk.	Variable toxicity in plants. Can be fatal in sheep.
Bracken fern	X	X	X	X	Hemorrhaging from nose, mouth, or other mucous membrane; blood in urine or feces; high temperature, cancer.	Cattle need to eat their body weight over several months. Young plants (“fiddle heads”) up to five times as poisonous as mature plants and are attractive especially to cattle. All parts poisonous.
Hoary alyssum				X	Lameness, stiffness, limb swelling, fever, diarrhea, abortion.	Not yet determined. All parts toxic, green and dried.
Horseweed				X	Mucosal and skin irritation.	Unknown.
Lambs-quarter	X	X	X		Kidney damage (Perirenal edema), drowsiness, weakness, muscular tremors, staggering gate, recumbancy, abortion. Sudden death.	Dose dependent on nitrate level. Results from ingesting plants that uptake nitrate from nitrate fertilizers or some herbicides (2, 4-D). Stems most poisonous. Most potent at night/early morning and overcast days.
Pigweed spp.	X	X	X		Kidney damage (Perirenal edema), drowsiness, weakness, muscular tremors, staggering gate, recumbancy, abortion. Sudden death.	Dose dependent on nitrate level. Results from ingesting plants that uptake nitrate from nitrate fertilizers or some herbicides (2, 4-D). Stems most poisonous. Most potent at night/early morning and overcast days.
Wild parsnip	X			X	Severe Sunburn (photosensitivity).	Toxic dose not yet determined, but large amounts need to be ingested to cause a response.