

## Pasture Plant Toxicity Resources

Ag Agents' Wisline Discussion, hosted by Livestock Team, April 13, 2012

Although there are a number of pasture plants that can be poisonous to grazing animals, toxicity issues are relatively uncommon with good pasture management practices in place. With the initiation of the grazing season, here are some resources and suggestions for assisting with questions that may come up.

### General information requests:

Usually, livestock will not seek out toxic plants unless there is insufficient forage available to graze or the available forage is of very low quality. Thus, proper grazing management is a primary key to minimizing livestock problems due to toxic plants. A regular inspection walk around pastures is an opportunity to fine-tune grazing management and identify potentially harmful plants that may require a control strategy. UW Extension has a number of good resources that can assist clients with learning the basics of pasture management as well as how to identify the common pasture plants and weedy species.

If landowners and/or tenants are interested in knowing more about potentially toxic plant species that might be found in their pastures, here are several resources that Dr. Mark Renz and I have both used for identification and information about toxic plants that may be found in locations that livestock may have access to<sup>1</sup>:

- Canadian [Poisonous Plants Information System](#)
- Colorado [Guide to Poisonous Plants](#)
- Cornell [Plants Poisonous to Livestock database](#)
- Penn State [Poisonous Plants Homepage](#)
- Texas A&M [Toxic Plants of Texas database](#)
- University of Illinois [School of Vet Medicine Poisonous Plants database](#)
- University of Minnesota Horse Program: [Plants Toxic or Harmful to Horses page](#)
- University of Wisconsin [Poisonous Weeds in Pastures](#) (article by Dr. Jerry Doll)
- USDA [Poisonous Plant Research Laboratory](#) (Logan, Utah)

<sup>1</sup>**Note:** these links also available at the UW Extension Grazing Resources & Research fyi site, located on the 'Weed Management' page: <http://fyi.uwex.edu/grazres/weed-management/>



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## **Assisting clients with specific toxicity situations:**

When a potential toxicity issue does come across your desk, here are a few suggestions for providing assistance to the client:

- If the client has not already contacted their veterinarian, a referral is recommended to rule out other potential causes of death or disease and to clarify symptoms of toxicity to help identify potential plant sources
- Survey the area where the animals have been recently located to identify any plants that may be a potential source of toxicity
- Use a digital camera for taking pictures of unknown plants for comparison to on-line identification databases, published references and/or for submission to the Extension Plant Doc diagnostic system to confirm identity
- If taking plant samples for identification, observe basic safety precautions: avoid direct contact with plant materials by using disposable gloves, clean sampling tools after use (pocket knife, scissors, clippers), etc. Label & refrigerate samples until they can be identified
- Question landowner/tenant on recent land management practices to discover less obvious clues.
- Observe the general environment: availability and source of water, salt, minerals, presence of other feeds or plant materials such as tree trimmings, presence of junk, old building materials or any other items within the animals' reach that might also potentially be a source of toxic compounds
- Recent weather conditions such as frost or drought may play a role in elevating toxicity concerns with some plants

## **Examples of situations that have been encountered in pastured situations:**

- Lead poisoning from old car batteries in the farm "junk" pile located in nearby woods (veterinarian suspected from blood sample results, confirmed on site visit)
- Shrub/tree trimmings and yard waste (yews, cherries)
- Toxic compounds and/or weeds in hay (fescue toxicosis; nitrates, hoary alyssum)
- Early spring grazing/browsing when other forage resources are limited: hemlock spp., black locust, oaks, etc.)

Toxic Plants of Concern in Wisconsin (M. Renz draft)						
Prunus (Choke-Cherry)	X	X	X	X	Sudden death after 1-2 hours of rapid breathing, frothing at the mouth, dilated pupils, tremors and convulsions.	Ruminants that eat 25% of body weight in green leaves are likely to die.
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 can result in death. Lesser amounts can also poison animals. Young leaves and seeds are most poisonous.
Jimson weed	X	X	X	X	Decreased respiratory and heart rate, 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.
Milk Weed	X		X	X	Depression, slowed respiratory rate, pain and inability to stand, tremors, staggering gate, weak and rapid pulse, colic, dilated pupils	.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 green 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	Listless, depressed, lethargic, hesitant to move, muscle tremors (especially in cattle)	0.5% to 1.5% of body weight in green plant. If livestock show "trembles", death is likely. Toxin secreted in milk; can poison calves and humans.
Horsetail			X	X	Diarrhea, weight loss, hind leg incoordination, decrease in milk production	Hay that is 20% horsetail can cause symptoms. Continued ingestion for 1-2 months can cause death.
Endophyte Tall Fescue	X				Shivering followed by lameness and swelling leading to necrosis and gangrene. Weight loss	Appears to be more prevalent in winter months and poisoning can occur anywhere from eight days to six months after cattle are put on fescue pasture.
Black Locust	X		X	X	Irregular heart rate, pale mucous membranes, light breathing, depression, abdominal pain, diarrhea, death is not uncommon.	As little as .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.
Nightshades	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. MORE DETAILS THAT ARE WEED SPECIFIC. Can range from 1-3 days of illness to sudden 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. MORE DETAILS THAT ARE WEED SPECIFIC. Can range from 1-3 days of illness to sudden death

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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. Livestock not as commonly poisoned. Can range from 1-3 days of illness to sudden death
Oaks	X	X	X	X	Stop eating, 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 experience defects.
St. Johnswort	X	X	X	X	Photosensitivity (blisters, edema, scabs, redness, peeling), intense itching, swollen eyelids, blindness, starvation, fever, increased heart rate and respiration, diarrhea, shade seeking.	Toxic dose not determined. All parts of the plant that bear the black dots are poisonous. Death is unlikely unless by secondary infection.
Wild Parsnip				X	Severe Sunburn (photosensitivity)	Toxic dose not yet determined, but large amounts need to be ingested to cause a response.
Pigweed spp.	X	X			Perirenal edema (kidney damage), drowsiness, weakness, muscular tremors, staggering gate, recumbancy, abortion. Sudden death (with enough nitrate present)	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.
Lambs-quarter	X	X			Perirenal edema (kidney damage), drowsiness, weakness, muscular tremors, staggering gate, recumbancy, abortion. Sudden death (with enough nitrate present)	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.
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
Buttercups	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. Cattle attracted to these. All parts poisonous.

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