



Pasture Weeds Toxic to Livestock

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When do livestock poisonings from toxic plants usually happen?

- Spring
 - Grasses are often in short supply

- Drought periods
 - Few desirable plants left



Grazing livestock will generally avoid poisonous plants IF adequate forage of more desirable species is available. Poisonings are most often happen in spring, before grass growth is adequate to meet animal needs, or during periods of drought when the good pasture fails to regenerate quickly.

What about other times?

- Poisonous weeds are not likely to be found in open areas of pastures, however.....

But poisonings can take place at other times, too...

Fencerows, pasture margins and barnyards

- Animals frequently browse here, even if good pasture is available
- The number and kinds of dangerous plants here is greater, so likelihood of poisoning is correspondingly greater



Susan Schoenian, Western Maryland
Research & Education Center

Certain areas in, or adjacent to, pastures can contain a wide variety of non-pasture plants. These areas include fencerows, barnyards and pasture field margins. They can be quite attractive to livestock, even when the good pasture is nearby.

New and unfamiliar areas...

- Poisoning is rare with experienced animals that have adequate pasture
- After shipping...
 - Animals are hungry
 - Might sample anything in a new environment
 - Should be fed before turned out to pasture



Also, when livestock are introduced to a new place, they are unfamiliar with the setting. These animals may be hungry and willing to sample plants they would normally leave alone. Feeding hay, silage, greenchop or other good feed prior to turning animals into an unfamiliar pasture is a good idea.

Poisonings also occur when...

- Animals are fed clippings from ornamental shrubs.



- This is the most common cause of plant poisonings in Michigan
 - particularly because of yew bush



It's a little hard to imagine, but people sometimes toss clippings from poisonous ornamental plants around their property to their livestock. The yew bush is very poisonous and is the most common cause of livestock poisonings in Michigan.

In Michigan...

- Plant poisoning is usually sporadic
 - Occurs as “one-at-a-time” cases

Livestock poisonings tend to be only occasional events...usually not widespread.

Poisoning should be suspected if:

- Several animals in a herd or flock show...
 - Acute disorders of central nervous system or digestive tract
 - *Without fever*
 - *But with weakness and rapid weight loss*
 - Indications:
 - *Sudden acceleration of heart rate*
 - *Stomach and intestinal irritation*
 - *General distress*
 - *Repeated attempts to void feces*

These indicators could help you determine if poisoning has taken place. Fever is not a common symptom.

Signs of plant poisoning may differ in intensity depending on:

- *Kind of plant eaten*
- *Stage of plant growth*
- *Soil in which the plant is growing*
- *Amount eaten*
- *Amount and kind of other feed eaten during the time the poisonous plant was in the animal's digestive tract*
- *Animal's tolerance to the poison*



A variety of factors will influence how sick an animal gets when it consumes a poisonous plant.

Preventative measures...

Do not overgraze pastures



Overgrazing will result in weedier pastures, and could result in the establishment of poisonous pasture weeds.

Graze pastures at the proper season



Avoid early spring grazing before the desirable plants are ready. Weeds commonly outcompete pasture plants when conditions for growth are less than optimum.

Fence in areas heavily infested with poisonous plants



Dr. Rachel Gilker,
University of Vermont Extension

Simply keeping livestock out of known problem areas can be a very practical approach. It will also give you a chance to reduce or eliminate the problem plant species and get better pasture established.

Learn to identify poisonous plants

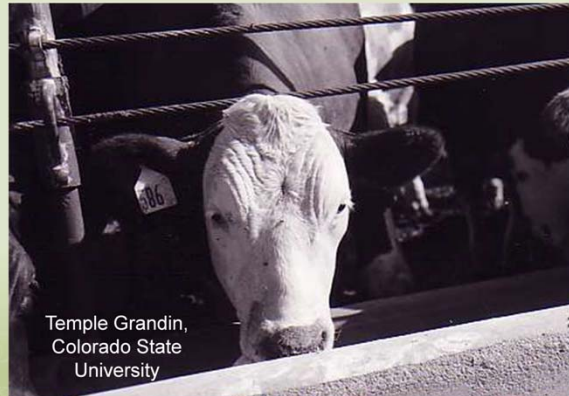


Materials are available through MSU Extension and other reliable sources of agricultural reference.

Learn the conditions under which
these plants can be dangerous to
your livestock



Do not allow animals that have been under stress or are overly hungry to graze in areas infested with poisonous plants



Feeding stock before they enter an area know to contain poisonous plants will reduce the animals tendency to consume them.

Develop a good grazing plan

- Rotational or strip grazing rather than continuous grazing allows desirable plants time for regrowth



Improved grazing techniques will allow grasses and legumes time for regrowth between grazings. This will also improve their ability to compete with undesirable plants.

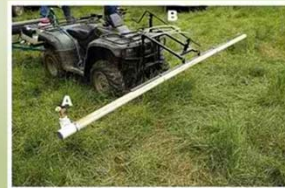
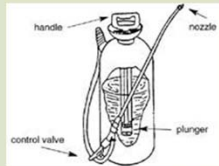
Provide adequate clean water



Lack of water will make it more difficult for animals to metabolize and excrete any poisons they may ingest while grazing. If intestinal irritation due to poisonous plant ingestion takes place, dehydration can result. A good, fresh water supply can help minimize these problems.

Control poisonous plants where feasible

- *2,4-D may increase palatability of some poisonous plants*

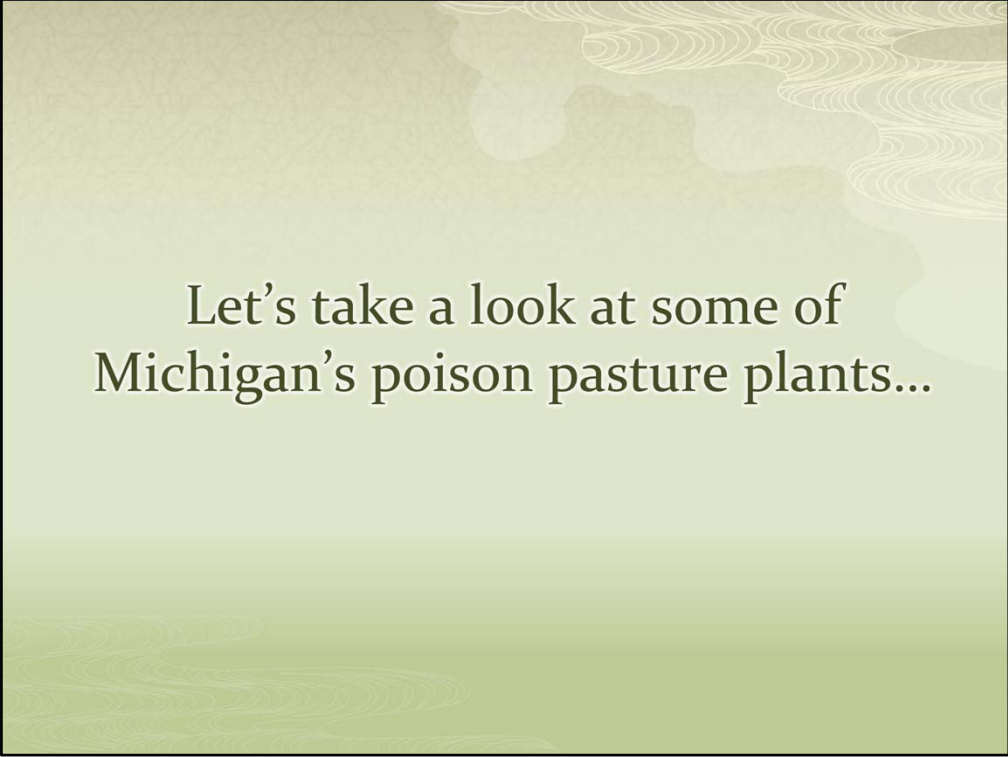


Spot spraying or wiping with an effective applicator, such as those pictured, can be a practical way to control poisonous plants. 2,4-D, a common selective broadleaf herbicide, may actually make treated plants more palatable to livestock before the plant dies and withers. Glyphosate is usually a good choice for spot treatment.

If animals become ill...

- *Consult your veterinarian*
- *If a poisonous plant is involved, proper ID is essential for any corrective action*

A veterinarian will want to know what type of problem plant an animal may have eaten.



Let's take a look at some of
Michigan's poison pasture plants...

Bitter nightshade (<i>Solanum dulcamara</i>)	Pigweed (<i>Amaranthus retroflexus</i>)
Black locust (<i>Robinia pseudoacacia</i>)	Pokeweed (<i>Phytolacca spp.</i>)
Black nightshade (<i>Solanum americanum</i>)	Poison hemlock (<i>Conium maculatum</i>)
Bracken fern (<i>Pteridium aquilinum</i>)	St. Johnswort (<i>Hypericum perforatum</i>)
Buckeyes (<i>Aesculus spp.</i>)	Water hemlock (<i>Cicuta spp.</i>)
Buttercup (<i>Ranunculus spp.</i>)	White snakeroot (<i>Eupatorium rugosum</i>)
Chokecherries, wild cherries (<i>Prunus spp.</i>)	Yews (<i>Taxus spp.</i>)
Cocklebur (<i>Xanthium spp.</i>)	Hoary alyssum (<i>Berteroa incana</i>)
Common horsetail (<i>Equisetum arvense</i>)	
Corn cockle (<i>Agrostemma githago</i>)	NON-CROP PLANTS
Horsenettle (<i>Solanum spp.</i>)	
Jimsonweed (<i>Datura stramonium</i>)	
Lambsquarter (<i>Chenopodium album</i>)	
Larkspur (<i>Delphinium spp.</i>)	
Milkweeds (<i>Asclepias spp.</i>)	
Oaks (<i>Quercus spp.</i>)	

This is a listing of Michigan's more common poisonous pasture plants. Many are not considered poisonous by farmers, but can become a problem if ingested under certain conditions or in large quantities.

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This is the same list. The following slides focus on the highlighted species found fairly commonly in the U.P.



Bitter nightshade

Dangerous in summer and fall.

Climbing perennial with alternately arranged leaves, pale-violet to purple flowers, small, many-seeded red or black berries.

Affects all animals

Found in fence rows, waste areas, grain and hay fields

Contains alkaloids. Effects include weakness, trembling, labored breathing, nausea, constipation or diarrhea, death



Typical fern with large fronds that grow up to 5' Usually grow in colonies. Leaves are triangular, firm, leathery, pinnate.

Dangerous in all seasons.

Found in dry, poor soil, open woods, sandy ridges, also dried in hay

Affects all grazing animals

Effects: In horses: loss of appetite, 'star-gazing'

In cattle: cumulative poisoning, at least 1 month, clots of blood in feces, or swelling of throat region in young animals, anemia



Buttercup

Erect plant from 8 – 24" tall with sparsely hairy, little-branched stems. Leaves are usually 3-cleft to below the middle, clothed with hairs. The flowers have pale-yellow, oblong petals approximately 4" long.

Dangerous in summer.

Found in wet areas in meadows and woods, low alluvial ground along streams and in ravines and valleys

Affected animals: All, but particularly cattle.

Effects: anemonal (volatile oil) – in lactating cows, there is a sharp drop in milk production and the milk is bitter and red-tinted. Severe poisoning causes abdominal pain, diarrhea, nervousness, twitching of the ears and lips, labored breathing, partial paralysis and convulsions. Sheep may collapse suddenly. Pigs may show paralysis but only minor involvement of the digestive system.



Large shrubs or small trees with oblong to obovate leaves. Crushed twigs have strong odor.
Dangerous all seasons.
Found in waste areas, fence rows, woods, orchards, prairies, dry slopes.
Affected animals: all grazing animals
Effects: prussic acid (cyanide) – slobbering, muscle tremors, increased respiration rate, rapid weak pulse, convulsions, labored breathing, death



Common horsetail

Rush-like plant with jointed stems and whorled branches. Aerial stems usually less than 3' grow from rhizomes.

Dangerous in summer and when abundant in hay.

Found in damp, wet places, roadsides, fields and waste places.

Affected animals: Sheep, cattle, horses.

Effects: thiaminase activity, unthriftiness, excitability, loss of condition, staggering gait, rapid pulse, difficult breathing, diarrhea and emaciation. Death preceded by convulsions and coma. Lowered milk production in cows, trembling in sheep.



Lambsquarter

Erect, green plant becoming reddish toward base. Ranging in height from 1 – 3' Flowers together in small clusters.

Dangerous all seasons.

Common in all dry areas

Animals affected: all animals.

Effects: Nitrate and oxalate. Salivation, vomiting, diarrhea, labored breathing, incoordination, weak pulse, muscle tremors, prostration, death



Larkspur

Woodland perennial. Leaves mostly near base of stem. Stem terminates in a flower cluster that is 3-8" long and contains blue or white-spurred flowers.

Dangerous in spring.

Found in either cultivated or wild settings, usually in open foothills or meadows.

Animals affected: all grazing animals, mostly cattle

Effects: alkaloid – straddled stance, repeated falling, nausea, rapid pulse and respiration, constipation and bloating



Milkweed

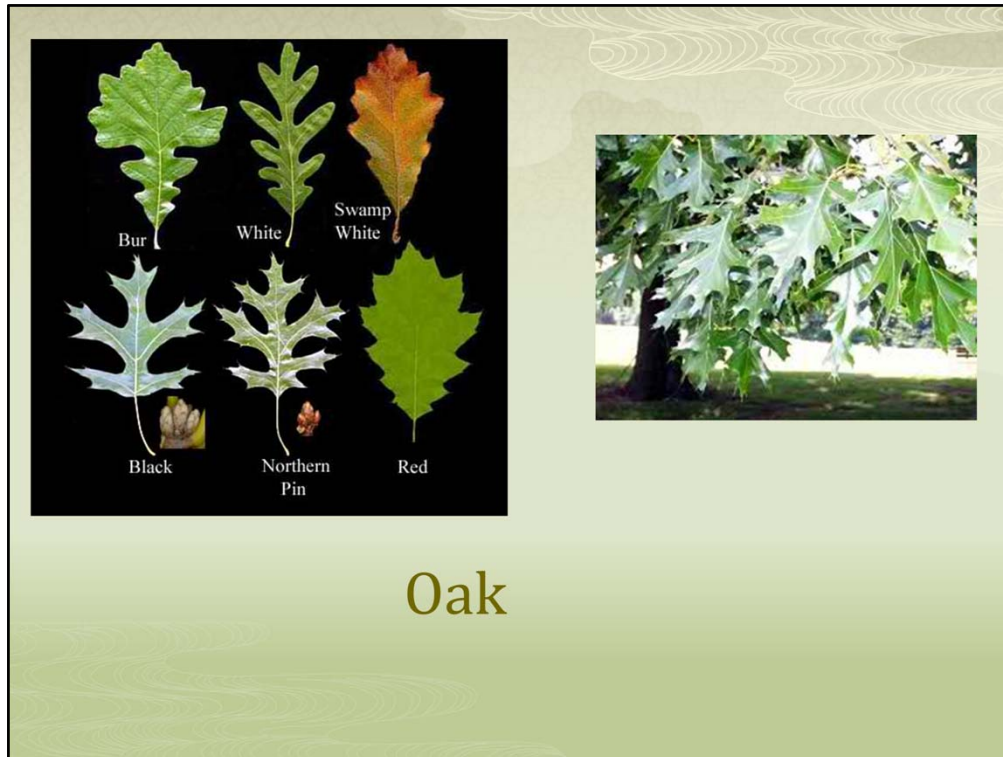
Erect, usually unbranched perennial. Flowers greenish white to white when open and give rise to narrow spindle-shaped pods from 2-3" long that stand nearly erect and produce numerous seeds. Each seed has a terminal tuft of soft hairs.

Dangerous in spring.

Found in dry areas, waste places, roadsides, stream beds.

Animals affected: all

Effects: resinoid and others – loss of control, spasms, bloating, pulse rapid and weak, rapid breathing, coma, death



Mostly deciduous trees, rarely shrubs, with 2-4 leaves clustered at tips of all twigs. Acorns born as fruit.

Dangerous in fall (acorns).

Found in most deciduous woods.

Animals affected: All grazing animals.

Effects: gallotannins – loss of appetite, constipation, dry muzzle, black pelleted feces followed by diarrhea with blood and mucous, frequent urination, weak, rapid pulse



Erect, branched, stout-stemmed annual herb that grows up to 7'. Stems reddish, leaves ovate, margins curled, alternate, long petioles. Flowers in terminal panicles. Often confused with lambsquarters.

Dangerous all seasons.

Found in all dry areas.

Animals affected: Pigs

Effects: Nitrate and oxalate – rapid onset of weakness, trembling, and incoordination 5 – 10 days after initial access to the weed, followed by knuckling of the pastern joints and almost complete paralysis of the pelvic limbs. Affected animals usually in sternal recumbency, also show abdominal edema.



Erect, much branched perennial with woody stem from 1-3'. The oppositely arranged leaves are narrowly oblong, from $\frac{1}{2}$ - 1 $\frac{1}{2}$ " long on the main stem, and smaller on the shoots. Numerous black-dotted yellow flowers $\frac{1}{2}$ - 1 " across, in clusters at the top of the plant.

Dangerous especially during dry seasons.

Found in dry soil, roadsides, pastures, ranges.

Animals affected: sheep, cattle, horses, goats.

Effects: primary photosensitizer – skin lesions in white skin, itching, blindness, convulsions, death



Yew

Evergreen shrub with needles about 1" long, pointed, green on both sides. Needles stalked with stalks following down twigs for distance below needles. Twigs smooth. On female plants, fruits are juicy, red, berry-like, ½" in diameter

Dangerous all seasons.

Found as ornamental shrub

Affected animals: all livestock

Effects: taxine – sudden onset of bradycardia, nervousness, trembling, dyspnea, incoordination and collapse. Gastroenteritis may be present in subacute cases. Death results from cardiac failure.



Herbaceous plant with a grayish green stem and typically 1 – 4' tall. Leaves oblong and covered with hairs. Plant blooms and produces seeds throughout entire growing season. Dangerous entire growing season and in dry hay

Affected animals: Mostly horses

Effects: swelling of lower legs, fever, colic and laminitis, long-term lameness related to founder

Crop plants that may be a problem...

- Alsike clover
- Red and white clover
- White sweet clover
- Yellow sweet clover
- Sorghum
- Millet
- Nitrate accumulations in oats, barley, rye, wheat, corn, sorghum

These common crop plants can be a problem. Refer to MSUE bulletin E-1725 "Pasture Plants Toxic to Livestock" for more information

Ornamental plants toxic to horses...

- Yew
- Rhododendron
- Foxglove
- Oleander
- Hydrangea
- Delphinium (larkspur)
- Lily of the valley
- Azalea

Several common ornamental plants can be problematic to horses. See MSUE publication E3059 "Ornamental Plants Toxic to Michigan Horses" for more information

Michigan trees toxic to horses, donkeys, and mules

- Red maple
- Black locust
- Black walnut
- Oak
- Cherry

Toxic plants of concern for MI horses...

- Hoary alyssum
- Clovers (red, white and alsike)
- St. Johnswort
- Black nightshade
- Common milkweed
- Bracken fern
- Field horsetail
- White snakeroot
- Water hemlock
- Jimsonweed



Reference materials

MSUE Publications:

E1725 "Pasture Plants Toxic to Livestock in Michigan"

E3059 "Ornamental Plants Toxic to Horses in Michigan"

E3060 "Toxic Plants of Concern in Pastures and Hay for Michigan Horses"

E3062 "Michigan Trees Toxic to Horses, Donkeys and Mules"

Weeds of the Northeast Cornell University Press



Thank you