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

What about other times?

- Poisonous weeds are not likely to be found in open areas of pastures, however.....
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.
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.
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.
A variety of factors will influence how sick an animal gets when it consumes a poisonous plant.
Preventative measures...
Overgrazing will result in weedier pastures, and could result in the establishment of poisonous pasture weeds.
Avoid early spring grazing before the desirable plants are ready. Weeds commonly outcompete pasture plants when conditions for growth are less than optimum.
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
Feeding stock before they enter an area known to contain poisonous plants will reduce the animals' tendency to consume them.
Improved grazing techniques will allow grasses and legumes time for regrowth between grazings. This will also improve their ability to compete with undesirable plants.
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.
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.
A veterinarian will want to know what type of problem plant an animal may have eaten.

If animals become ill...

- Consult your veterinarian
- *If a poisonous plant is involved, proper ID is essential for any corrective action*
Let’s take a look at some of Michigan’s poison pasture plants...
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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<th>Poisonous Pasture Plants</th>
<th>Non-Crop Plants</th>
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<td>Pigweed (Amaranthus retroflexus)</td>
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<tr>
<td>Black locust (Robinia pseudoacacia)</td>
<td>Pokeweed (Phytolacca spp.)</td>
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<td>St. Johnswort (Hypericum perforatum)</td>
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<td>Yews (Taxus spp.)</td>
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<td>Cocklebur (Xanthium spp.)</td>
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<td>Corn cockle (Agrostemma githago)</td>
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<td>Horsenettle (Solanum spp.)</td>
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<td>Jimsonweed (Datura stramonium)</td>
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<td>Lambsquarter (Chenopodium album)</td>
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<td>Larkspur (Delphinium spp.)</td>
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<td>Milkweeds (Asclepias spp.)</td>
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<tr>
<td>Oaks (Quercus spp.)</td>
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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 (*Solanum dulcamara*) | Pigweed (*Amaranthus retroflexus*) |
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| Corn cockle (*Agrostemma githago*) | |
| Horsenettle (*Solanum spp.*) | |
| Jimsonweed (*Datura stramonium*) | |
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.
Erect plant from 8 – 24” tall with sparsly 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
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
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
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 ½ - 1 ½ “ long on the main stem, and smaller on the shoots. Numerous black-dotted yellow flowers ½ - 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
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
These common crop plants can be a problem. Refer to MSUE bulletin E-1725 “Pasture Plants Toxic to Livestock” for more information
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