Plants Toxic to Cattle and Horses and How to Control Them

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Source

Guide to Toxic Plants in Forages
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Source – On The Web

http://ohioline.osu.edu/b762/b762_24.html - Ohio

http://www.vet.purdue.edu/toxic/cover1.htm - Purdue

http://www.ansci.cornell.edu/plants/index.html - Cornell

This is a growing reference that includes plant images, pictures of affected animals and presentations concerning the botany, chemistry, toxicology, diagnosis and prevention of poisoning of animals by plants and other natural flora (fungi, etc.).
Why Know Your Toxic Weeds

- Decrease in productivity – thriftiness
- Can lead to death of an animal
  - Several cases are reported each year and more suspected
- Personal loss of treasured animal(s)
- Toxicity can carry through drying process and into hay
A Few Things To Know Upfront

- Many are not palatable
- Most are moderate to low toxicity
- Some normally non-toxic weeds build up nitrates when stressed
- Herbicide applications can induce stress

Photo source: http://i50.photobucket.com/albums/f325/threewayrico/mr-yuk.gif
Toxic Weeds To Livestock

- English, Japanese Yew
- Black Locus
- Black Walnut
- Ragwort, (Packera), groundsels
- Horsetail
- Rhubarb
- Castorbean
- Spurges
- Jimsonweed

- Some Clover
- White snakeroot
- Ohio buckeye
- Milkweed
- Poison hemlock
- Buttercups
- Common cocklebur
- Horsenettle/ Nightshade family
- Pokeweed
- Redroot pigweed
Plants With High Toxicity
Poison-hemlock (*Conium maculata*)

- Biennial with rosette first year and branched stem the next.
- Dark glossy fern-like leaves.
- Base of lower leave encircle stem.

* Photo Credit: University of Pennsylvania
Poison-hemlock (*Conium maculata*)

**Dangerous Parts** – All parts, especially young leaves and roots.

**Symptoms** – usually appear within an hour.
- Young animals more susceptible
- Bloating, incoordination, intestinal irritation, dilation of pupils, weak pulse
- Respiratory paralysis
- Coma and death from paralysis
Water Hemlock

• One of most poisonous plants in Ohio
• All parts of plant, toxic
• Symptoms, colic and convulsions, respiratory failure, within 30 minutes
• Death within hour
• Low doses cause skeletal deformities
Groundsel, Ragwort (*Packera* spp.)

- Spoon shaped basal leaves
- Yellow daisy-like flowers
- Golden ragwort (perennial)
- Cress-leaf groundsel (annual)
- Hollow stem

*Photo source: Flowering plants of Missouri*
Groundsel, Ragwort

**Dangerous Parts** – Seeds, flowers and leaves

**Symptoms** - weeks or months after ingestion, “seneciosis” or “pictou disease”
- Nervous, “sleepy staggers” or “walking disease”
- Skin problems, sunscald
- Diarrhea
- Weakness

**First aid** – Treatments have a low rate of success once clinical signs appear.
English and Japanese yew
*(Taxus spp.)*

Ornamental shrubs and hedges
Woody perennials

Red fleshy berry (aril)

Flat ½ - 1 inch long evergreen leaves

Canada Yew

* Photo Credit: University of Pennsylvania
English and Japanese yew

**Dangerous Parts** – All parts, especially the seed.

**Symptoms** (appear around 2 days after ingestion)
- Breathing problems
- Trembling and muscular weakness
- Paralysis and heart failure
- Stomach and digestive upset.

**First aid** – Atropine and supportive care as indicated. See a veterinarian for dosages.
White Snakeroot \textit{(Ageratina altissima)}

1 to 3 ft tall
Leaves opposite, egg shaped and pointed
Petioles approx $\frac{3}{4}$ inch long
Bright white flowers in July/August

Can cause Milk Sickness in humans
White Snakeroot

**Dangerous Parts** – Leaves and stems, roots lesser so (plant is palatable)

**Symptoms** – (show in 2 days to 3 weeks)
- Trembling
- Sweating
- Depression
- Stiff gait
- heart failure and jaundice

**First aid** – permanent damage can occur, supportive care
Wild Black Cherry, Choke Cherry & Peach

Characterized by alternate finely toothed leaves, white or pink flowers and fleshy fruits (cherries or peaches)
Wild Black Cherry, Choke Cherry & Peach

**Dangerous Parts** – Leaves, seeds, twigs and bark contain glycoside

**Symptoms** – may appear within a few minutes following consumption of plant material
- exhibit excitement
- incoordination
- convulsions
- rapid and labored breathing
- bloating and coma

**Treatment** - Death can occur in less than an hour due to internal asphyxiation.
Moderate Toxicity Rating
Black Locust *(Robinia pseudoacacia)*

- Often bear two spines at leafstalk
- Flat brown pod
- Alternate, pinnate compound leaves
- Tree with rough bark

* Photo Credit: University of Pennsylvania
Black Locust *(Robinia pseudo-acacia)*

**Dangerous Parts** – All parts.

**Symptoms** – Can appear in 1 or 1.5 hours
- Mostly in horses
- Weight loss
- Weakness
- Abnormal heart rate, pupils dilate
- Posterior paralysis
- Rarely death

**First Aid** – Treat for thiamine deficiency, see Vet. Administer digitalis and laxative via stomach tube.
Field Horsetail, Scouring rush

- Round, hollow, stiff, and jointed stems.
- Branched or unbranched.

Terminal cone like structure
Field Horsetail, Scouring rush

Dangerous Parts – All parts when dried.

Symptoms – Usually long time exposure. Rarely effected.
  – Unthriftiness
  – After a few weeks may lose muscle control
  – Difficulty breathing
  – Pale mucous membranes
  – Diarrhea

First aid – Use purgatives and stimulants. Keep quiet and feed high quality rations. Thiamine is often prescribed.
Milkweeds \((Asclepias\ spp.)\)

- Perennial with thick unbranching stems.
- Have a milky sap when broken.
- Opposite leaves oblong (sometimes whorled) to elliptic with prominent white midvein.

* Photo Credit: University of Pennsylvania
Milkweeds (*Asclepias* spp.)

**Dangerous Parts** – Stems, leaves, and roots.

**Symptoms** – May only require 2% of body weight.
- Loss of appetite
- Diarrhea, salivating
- Dilated pupils and weakness
- Loss of muscle control
- Paralysis of rear limbs, violent spasms
- Death due to respiratory failure

**First aid** – Mineral oil, laxatives, warmth, sedative, and intravenous fluids as prescribed by Vet.
Hemp Dogbane

Native perennial weed
Grow 1-4 feet tall and reproduces by root and seeds
Resembles milkweed, shoots emerge late May-June

Reddish brown stem
Hemp Dogbane

**Dangerous Parts** – Leaves and stems of green and dry plants contain a resinoid and a glucoside with cardioactivity. Less than an ounce of green or dry leaves may be enough to kill a horse, cattle seem more resistant.

**Symptoms** – poisoning include:
- increased temperature and pulse
- sweating
- dilated pupils
- discolored mouth and nostrils
- refusal to eat or drink.
Black walnut \textit{(Juglans nigra)}

- Large ornamental tree
- Alternate pinnate compound leaf
- Often no terminal leaf
- Rough nut in a clammy glandular husk, 2 to 4” in diameter

* Photo Credit: University of Pennsylvania
Black walnut *(Juglans nigra)*

**Dangerous Parts** – Pollen, leaves, wood chips/shavings.

**Symptoms**
- Mostly horses
- Acute laminitis (inflammation of the vertebrae)
- Respiratory problems

**First aid** – Toxicity not well understood.
Ohio Buckeye (*Aesculus glabra*)

- Medium sized tree
- Opposite five leaflet compound leaf
- Large yellowish flowers in June
- Glistening buds in the spring
- One to 3 brown nut-like seed in prickly fruit

* Photo Credit: University of Pennsylvania
Ohio buckeye & other buckeye species

**Dangerous Parts** – Buds, nuts, leaves, bark, seedlings/sprouts.

**Symptoms** – often occurs in the spring
  - Staggering, drunk appearance
  - Weakness
  - Over active and inflamed mucous membranes
  - Paralysis
  - Coma and death
  - Colic often reported in horses

**First Aid** – Treat with stimulants and purgatives.
Consult vet for dosages. No specific antidote known.
Other Toxic Plants

Jimsonweed
(tropane alkaloids)

Horsenettle

Black Nightshade
(solanine)

Ground Cherry
Other Toxic Plants cont’d

- **Johnsongrass**  
  (Hydrocyanic acid)

- **Redroot Pigweed**  
  (Nitrates)

- **Common Burdock**  
  (diuretic effects)

- **Pokeweed**  
  (Saponins)
Control

- Cut and remove by hand (dispose of vegetation)
- Proper mowing
- Proper forage fertility
- Proper drainage of field
- Use aggressive competitive forges

Herbicides
- Buctril
- Glyphosate (spot)
- Pursuit
- Cimarron/Ally
- Stinger
- Crossbow
- 2,4-D
- Banvel/Clarity
- Glyphosate (spot)

Always read the herbicide use label before buying or using a herbicide.
## Control

<table>
<thead>
<tr>
<th>Plant</th>
<th>Control Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poison hemlock</td>
<td>- Crossbow 1.5% v/v before bolting</td>
</tr>
<tr>
<td></td>
<td>- glyphosate 1 to 1.5% bud to flowering</td>
</tr>
<tr>
<td></td>
<td>- Cimarron Max 1 oz/A ‘A’ + 4 pt/A ‘B’</td>
</tr>
<tr>
<td>Groundsel, ragworts</td>
<td>- Glyphosate 1 to 1.5% v/v in the fall or early spring before bolting</td>
</tr>
<tr>
<td></td>
<td>- 2,4-D at 1 to 4 pt/A in the fall</td>
</tr>
<tr>
<td></td>
<td>- several others before bolting</td>
</tr>
<tr>
<td></td>
<td>- Cimarron Max at 0.25 oz/A ‘A’ + 1 pt/A B</td>
</tr>
<tr>
<td>Horsetail</td>
<td>- No herbicide does a good job</td>
</tr>
<tr>
<td>White snakeroot</td>
<td>- Banvel 2-4 pt/A spot or 2 pt/A broadcast</td>
</tr>
<tr>
<td>Milkweed</td>
<td>- Crossbow and Banvel, Fair at best. Glyphosate in late bud to flower a little better – spot spray</td>
</tr>
<tr>
<td>Trees</td>
<td>- large trees have to be cut down, treat stumps with Arsenal, Accord, Crossbow. Often foliar follow-up is required.</td>
</tr>
</tbody>
</table>
Questions?
Thank you for keeping my lunch healthy. Now if you could do something about these flies.
Fly Control for Grazing Cattle

Mark Landefeld
OSU Extension
## Insecticide Tag Features

<table>
<thead>
<tr>
<th>Tag Type</th>
<th>Manufacturer</th>
<th>Ingredients</th>
<th>Color</th>
<th>Applicator</th>
<th>Class</th>
<th>Weight</th>
<th>Tags/Pack</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patriot</strong></td>
<td>KMG</td>
<td>40% Diazinon</td>
<td>Orange</td>
<td>Allflex</td>
<td>Organophosphate</td>
<td>15 gm</td>
<td>20 or 120</td>
<td></td>
</tr>
<tr>
<td><strong>Avenger</strong></td>
<td>KMG</td>
<td>30% Endosulfan</td>
<td>Gray</td>
<td>Allflex</td>
<td>Organochlorine</td>
<td>15 gm</td>
<td>20 or 120</td>
<td></td>
</tr>
<tr>
<td><strong>Terminator II</strong></td>
<td>KMG</td>
<td>20% Diazinon</td>
<td>Red</td>
<td>Allflex</td>
<td>Organophosphate</td>
<td>10 gm</td>
<td>20 or 120</td>
<td></td>
</tr>
<tr>
<td><strong>Co-Ral Plus</strong></td>
<td>Bayer</td>
<td>20% Coumaphos - 20% Diazinon</td>
<td>White</td>
<td>Allflex</td>
<td>Organophosphate</td>
<td>13 gm</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td><strong>CyLence Ultra</strong></td>
<td>Bayer</td>
<td>Synergized Pyrethroid</td>
<td>Light Blue</td>
<td>Allflex</td>
<td>Pyrethroid</td>
<td>13 gm</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td><strong>Super Deckem</strong></td>
<td>Fearing</td>
<td>8% Fenvalerate</td>
<td>Blue</td>
<td>Any</td>
<td>Pyrethroid</td>
<td>10 gm</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td><strong>X-Terminator</strong></td>
<td>Fearing</td>
<td>20% Diazinon</td>
<td>Orange</td>
<td>Any</td>
<td>Organophosphate</td>
<td>15 gm</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td><strong>Dominator</strong></td>
<td>Schering</td>
<td>20% Pirimiphos</td>
<td>Yellow</td>
<td>Allflex</td>
<td>Organophosphate</td>
<td>9.5 gm</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td><strong>Double Barrel VP</strong></td>
<td>Schering</td>
<td>6.8% Lambdacyhalothrin - 14% Pirimiphos Methyl</td>
<td>Red</td>
<td>Allflex</td>
<td>Organophosphate &amp; Pyrethroid</td>
<td>9.5 gm</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td><strong>Saber Extra</strong></td>
<td>Schering</td>
<td>10% Lambdacyhalothrin</td>
<td>Purple</td>
<td>Allflex</td>
<td>Pyrethroid</td>
<td>9.5 gm</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td><strong>WARRIOR</strong></td>
<td>Y-TEX</td>
<td>30% Diazinon - 10% Chlorpyrifos</td>
<td>Green</td>
<td>Y-TEX</td>
<td>Organophosphate</td>
<td>15 gm</td>
<td>20 or 100</td>
<td></td>
</tr>
<tr>
<td><strong>GardStar Plus</strong></td>
<td>Y-TEX</td>
<td>10% Permethrin</td>
<td>Red</td>
<td>Y-TEX</td>
<td>Pyrethroid</td>
<td>9.5 gm</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td><strong>OPTimizer</strong></td>
<td>21.4% Diazinon</td>
<td>Y-TEX</td>
<td>Orange</td>
<td>Y-TEX</td>
<td>Organophosphate</td>
<td>15 gm</td>
<td>20 or 100</td>
<td></td>
</tr>
<tr>
<td><strong>PYthon MAGNUM</strong></td>
<td>Y-TEX</td>
<td>10% Zetacypermethrin - 20% Piperonyl Butoxide</td>
<td>Blue</td>
<td>Y-TEX</td>
<td>Pyrethroid</td>
<td>15 gm</td>
<td>20 or 100</td>
<td></td>
</tr>
<tr>
<td><strong>PYthon</strong></td>
<td>Y-TEX</td>
<td>20% Piperonyl Butoxide - 10% Zetacypermethrin</td>
<td>Lavender</td>
<td>Y-TEX</td>
<td>Pyrethroid</td>
<td>9.5 gm</td>
<td>20 or 100</td>
<td></td>
</tr>
</tbody>
</table>
Why is control important?

From May 1 to June 30 ONE FLY can produce 1,000 adult flies and 25,000 flies in the egg, larva and pupa stages.
The most economically important external pest

Horn Fly

B. Clymer  *Haematobia irritans.*
Horn Fly

• Life cycle = egg to adult in 10-14 days.
• Spends nearly its entire life feeding on cattle.
• Sucks blood 20-40 times per day.
• The larvae develop in fresh manure piles.
• Economic loss occurs when fly populations reach 100-200 flies per animal.
How to Handle Resistance:

• Demonstrated resistance to pyrethroid impregnated ear tags.

• Rotate ear tags (pyrethroid / organophosphate)

• Rotate active ingredient every 2 years.

• Do not tag animals until fly populations reach 200/animal.

• Do not leave ear tags in beyond manufacture’s recommended time limit.
Another Product

- Elector (spinosad) by Elanco
- Pour-on or dilutable spray for horn flies and chewing and sucking lice on lactating and non-lactating dairy and beef cattle.
- Premise spray for stable flies and house flies

4ml./110lbs body wt. as pour-on or 10 oz. mixed with 5 gal. H2O
Applicator Safety
The Label Is The Law!

- Insecticide Cattle Ear Tags contain high concentrations of active ingredient – up to 40% of the tag weight can be insecticide.

  • Record all pesticide usage.
  • Read the labels and follow directions.
  • Never exceed label rates of application, prevent residues in meat and milk.
  • Never apply pesticides closer to slaughter dates than listed on the label.
  • Avoid contamination of feed & water equipment when using sprays.
Treatment Areas

How many horn flies before you treat?

- a. 25-50
- b. 50-100
- c. 100-200
Face Flies
Face Fly Damage

- Spread Pinkeye and other disease
- Annoyance and irritation to cattle
- Can reduce rate of gain

Face flies are difficult to treat.

*Can travel long distances.

*Have to use a combination of control strategies.

*Ear tags, back rubbers, fly flyps, bags and sprays near the face
2 bags / 50-60 animals

20 ft. Back rubber / 50-60 animals
Heel Fly/Cattle Grub

- Cause hide damage
- Cause carcass trim
- Reduced weight gain

- Resembles a honey bee in size and color.
- Adult flies do not bite.
- Eggs deposited on legs & abdomen of cattle
- Eggs hatch in 2-6 days
- Larvae penetrate the skin & migrate
- Larvae move to the spinal cord or gullet
- Life cycle 1 year
Keys for Grub Treatment

* Treat when heel fly activity ceases in the Fall after a killing frost

* (Sept. 1-Nov. 1), before the grub reaches the esophageal area and the spinal cord area.

* Watch for host-parasite reactions.