Horse Pasture Weed Concerns and Management Options

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North Carolina State University
Topics for Discussion

**Winter Weed Control**

Optimum control timings
Fall seeded grasses / spring seeded clover
Residue and manure issues with aminopyralid
Weed identification hints / control recommendations

**Poisonous Plants**

Toxicity concerns for horses
Postemergence Weed Control in Hay Crops (Winter Annuals and Cool Season Perennials)

Best time to control (usually*) is Oct through Dec

Weeds are germinating, young, actively growing

*Germination depends on rainfall – could be dry, grass canopy, other factors

A good time to control is Feb through Apr*

Winter weeds begin their final growth spurt

* Don’t wait too late by letting weeds go to seed!
What are advantages to early weed identification?

Can control before desired crop gets thinned out

Less herbicide usually needed for control of younger plants (save money)

Herbicide may not control mature plants no matter the rate (Italian ryegrass - Roundup, goosegrass - Pastora)

Herbicides do not kill weed seeds (you may kill the parent plant, but offspring will be unaffected)
The Key to Greener Pastures, Hay Fields and Spray Fields?

Remove weed competition

both

Winter and summer weeds (if present)

knowing

Can’t be done with one herbicide at one timing
Pasture & Rangeland Weed Concerns

Grass Weeds (least concern)

Interfere when striving for pure stands
(horse owners, hog waste producers)

Interfere with hay drying

Generally not a health concern except johnsongrass

Broadleaf Weeds (most concern)

Numerous, noxious, toxic, prickly (animals will not graze)
Pasture Herbicides

Grass Herbicides
Tall fescue: none available (nutsedge species either)
Bermuda: only one at-sprigging (Direx) and one PRE herbicide (Prowl H20) and a handful of POST herbicides available for dormant or actively growing settings

Broadleaf Herbicides
Many products available for tall fescue and bermuda
**Pasture Broadleaf Herbicides**

*(Tall fescue and bermudagrass)*

- [4] 2,4-D  
  2,4-D amine or ester

- [14] Aim  
  carfentrazone

- [4] Banvel  
  dicamba amine

- [2+4] Chaparral***  
  metsulfuron + aminopyralid

- [2+2] Cimarron Plus***  
  metsulfuron + chlorsulfuron

- Cimarron Max***  
  metsulfuron + 2,4-D amine

- [2+4+4]  
  + dicamba amine

*** Tall fescue stand must be at least 2 yrs – expect injury
<table>
<thead>
<tr>
<th>Herbicide</th>
<th>(Beef – Dairy) Slaughter</th>
<th>Hay</th>
<th>Sensitive Crop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grazing</td>
<td></td>
<td>Transfer</td>
</tr>
<tr>
<td>2,4-D</td>
<td>0</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Aim</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Banvel</td>
<td>0</td>
<td>7 to 40</td>
<td>30</td>
</tr>
<tr>
<td>Chapparal</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cim. Plus</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cim. Max</td>
<td>0</td>
<td>7</td>
<td>30</td>
</tr>
</tbody>
</table>
Pasture Broadleaf Herbicides
(Tall fescue and bermudagrass)

[4+4] Crossbow  2,4-D ester + triclopyr ester
[4+4] Curtail    2,4-D amine + clopyralid amine
[4+4] Grazon P+D picloram amine + 2,4-D amine
[4+4] GrazonNext HL aminopyralid + 2,4-D amine
[19+4] Overdrive  diflufenzopyr + dicamba
<table>
<thead>
<tr>
<th>Herbicide</th>
<th>(Beef – Dairy) Slaughter</th>
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<th>Transfer</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Grazing</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Crossbow</td>
<td>0</td>
<td>14</td>
<td>3</td>
<td>7*</td>
</tr>
<tr>
<td>Curtail</td>
<td>0</td>
<td>14</td>
<td>7</td>
<td>30</td>
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<tr>
<td>Grazon P+D</td>
<td>0</td>
<td>7</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>GrazonNext HL</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Milestone</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Overdrive</td>
<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
</tbody>
</table>

* 365 day hay restriction for lactating dairy cattle
Pasture Broadleaf Herbicides
(Tall fescue and bermudagrass)

[4+4] PastureGard HL  triclopyr ester + fluroxypyr ester
[4+14] Rage D-Tech  carfentrazone + 2,4-D ester
[4] Remedy Ultra  triclopyr ester
[4+4] Surmount  picloram amine + fluroxypyr ester
[2] Telar XP***  chlorsulfuron
[4+4] Weedmaster  2,4-D amine + dicamba amine

*** Use only 0.25 to 0.5 oz on tall fescue – expect injury
<table>
<thead>
<tr>
<th>Herbicide (Beef – Dairy) Slaughter Hay Sensitive Crop</th>
<th>Grazing</th>
<th>Transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>PastureGard HL</td>
<td>0</td>
<td>365</td>
</tr>
<tr>
<td>Rage D-Tech</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Remedy Ultra</td>
<td>0</td>
<td>1 season</td>
</tr>
<tr>
<td>Surmount</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Telar XP</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Weedmaster</td>
<td>0</td>
<td>7</td>
</tr>
</tbody>
</table>
Fall Seeded / Overseeded Grasses

If spraying before seeding…
Wait 3 to 4 weeks before seeding

If spraying after seeding…
Wait until seedlings tiller with secondary root system and vigorous growth – which means usually spring

Check individual labels for accuracy of statements
Herbicides Labeled for Grass Seedlings (tall fescue, ryegrass)

Banvel [4]  Up to 1 pint/A for new seedlings

Weedmaster [4+4]  Up to 2 pint/A for new seedlings

Broadleaf weed control only

2 to 4 pint/A for new stolons
Herbicides Labeled for Well Established Pastures

All other herbicides listed in previous charts must be applied to “well established” grass. Most labels don’t define what “well established” means.

Exceptions

Crossbow and Curtail can be applied after tillering. Cimarron (Max and Plus) can be applied to 2 month bermuda or 24 month tall fescue.
Legume Tolerance

Many forage producers like their stands to consist of a grass / clover mixture.

Because of the clover, the only herbicides labeled for this mixture are 2,4-D [4] (1 to 2 pt/A) and Aim [14] (2 fl oz/A).

There are lots of common broadleaf weeds not controlled by these two herbicides.
<table>
<thead>
<tr>
<th>Product</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grazon P+D</td>
<td>Yes – if 2 to 3 pt/A no later than Sep 15</td>
</tr>
<tr>
<td>Surmount</td>
<td>No – at least 1 year</td>
</tr>
<tr>
<td>Milestone</td>
<td>No – at least 1 year</td>
</tr>
<tr>
<td>GrazonNext</td>
<td>No – at least 1 year</td>
</tr>
<tr>
<td>Chaparral</td>
<td>No – at least 1 year</td>
</tr>
<tr>
<td>Curtail</td>
<td>No – 10.5 to 18 months</td>
</tr>
</tbody>
</table>

Soil bioassay (plant test rows) before seeding entire field
Spring Seeded Clover Following Fall Trt

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Availability</th>
<th>Time After Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>PastureGard HL</td>
<td>Yes</td>
<td>1 month</td>
</tr>
<tr>
<td>Weedar (2,4-D)</td>
<td>Yes</td>
<td>1 month</td>
</tr>
<tr>
<td>Weedmaster</td>
<td>Yes</td>
<td>4 months</td>
</tr>
<tr>
<td>Cimarron</td>
<td>Yes</td>
<td>4 months</td>
</tr>
<tr>
<td>Aim</td>
<td>Yes</td>
<td>Anytime</td>
</tr>
<tr>
<td>Overdrive</td>
<td>Yes</td>
<td>1 month</td>
</tr>
<tr>
<td>Product</td>
<td>Note</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Crossbow</td>
<td>Yes – no reference on label (3 months)</td>
<td></td>
</tr>
<tr>
<td>Remedy Ultra</td>
<td>Yes – no reference on label (3 months)</td>
<td></td>
</tr>
<tr>
<td>Telar XP</td>
<td>No reference - do soil bioassay</td>
<td></td>
</tr>
<tr>
<td>Rage D-Tech</td>
<td>Yes – no reference on label (3 months)</td>
<td></td>
</tr>
<tr>
<td>Banvel</td>
<td>Yes – 4 months after treatment</td>
<td></td>
</tr>
</tbody>
</table>
Excellent broadleaf weed herbicides labeled for pastures

Super sensitive to beans, peas, lentils, potatoes, various other legumes, ornamental and orchard plants in very low amounts
Mulch under bean plants containing a pyridine herbicide
<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Animal Transfer Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clopyralid [4]</td>
<td>Curtail</td>
</tr>
</tbody>
</table>

**Animal transfer requirements for manure**

- Clopyralid: 7 days
- Aminopyralid: 3 days
- Picloram: 7 days

Do not use or spread manure to broadleaf crops if animal has grazed or been fed treated hay.
Picloram  Grazon P+D, Surmount

Some forage legumes can be seeded <1 yr after treatment but most have to be seeded >1 yr after treatment
Do not plant broadleaf crop until field bioassay conducted
Field bioassay: plant short test rows in treated area and observe symptoms – if none present, then plant
Do not use treated hay, straw or manure in compost or mulch
Aminopyralid Milestone, GrazonNext, Chaparral

Cereals and corn can be planted 1 yr after treatment; most broadleaf crops at least 2 yrs after treatment.

Do not plant broadleaf crop until field bioassay conducted.

Field bioassay: plant short test rows in treated area and observe symptoms – if none present, then plant.

Do not use treated hay or straw in compost or mulch.

Treated hay must remain on farm for 18 months and can’t be used for silage, haylage, baylage or green chop.
Henbit
Winter annual broadleaf

Square stem, purple flowers

Milestone - 0.375 pt/acre
Banvel – 1 pt/acre
Weedmaster
1.5 pt/acre preflower
3 pt/acre flower
GrazonNext HL
1.5 pt/acre
Crossbow – 3 qt/acre
Cim. Plus – 0.125 oz/acre
Cimarron Max
0.25 oz + 1 pt/acre
Telar XP – 0.5 oz/acre
Chaparral – 2.25 oz/acre
Overdrive – 6 oz/acre
Common chickweed: winter annual broadleaf

Banvel, PastureGard HL (1 pt/acre)
Grazon P+D, Surmount, Weedmaster, GrazonNext HL (1.5 pt/acre)
Crossbow – 2 qt/acre
Cim. Plus – 0.125 oz/acre; Cim. Max - 0.25 oz + 1 pt/acre
Telar XP – 0.5 oz/A; Chaparral – 3 oz/A
Overdrive – 6 oz/A

Hairless, glossy leaves
Resemble mouse ears

5 deeply notched petals
Mouseear chickweed: winter annual broadleaf

Banvel, PastureGard HL (1 pt/acre)
Grazon P+D, Surmount, Weedmaster (1.5 pt/acre)
Crossbow – 3 qt/acre
Cimarron Plus – 0.125 oz/acre
Cimarron Max – 0.25 oz + 1 pt/acre
Birdseye (persian) speedwell – Veronica species winter annual broadleaf

No labels specifically address birdseye speedwell

Aim – 2 oz/acre (ivyleaf speedwell)
GrazerNext HL – 1.5 pt/acre (corn speedwell)
Cimarron – 0.5 oz/acre (corn speedwell)

Light blue flower, heart-shaped seedpods on long stalks
Wild mustard
*Brassica kaber*

Winter annual broadleaf

**Fibrous root system**

Yellow flowers

Banvel, PastureGard HL, Rage D-Tech (1 pt/acre)
2,4-D amine, Crossbow, Remedy Ultra, Weedmaster (2 pt/acre)
Curtail – 3 qt/acre
Cim. Plus – 0.125 oz/acre; Cim. Max – 0.25 oz + 1 pt/acre
Telar XP – 0.5 oz/acre
Chaparral – 1.75 oz/acre
Overdrive – 6 oz/acre
Mustards

(*Brassica sp.*)
Wild radish: *raphanus raphanistrum*; winter annual

- Banvel – 1 pt/acre
- 2,4-D amine, Weedmaster (2 pt/acre)
- Crossbow – 2 qt/acre; Curtail – 3 qt/acre
- Cim. Plus – 0.125 oz/acre; Cim. Max – 0.25 oz + 1 pt/acre
- Chaparral – 1.75 oz/acre
- Overdrive – 6 oz/acre

- Stout taproot
- Yellow flowers
- Leaves in segments on stem
Carolina Geranium: winter annual broadleaf

Banvel, PastureGard HL, Remedy Ultra (1 pt/acre)
2,4-D amine, Rage D-Tech, Surmount, Weedmaster
(1.5 to 2 pt/acre)
Crossbow – 3 qt/acre
Cim. Plus – 0.125 oz/acre; Cim. Max – 0.25 oz + 1 pt/acre
Telar XP – 1 oz/A; Chaparral – 1.75 oz/A
Overdrive – 6 oz/A

Storkbill seedpods
Shepherd’s-purse: winter annual broadleaf

Aim – 2 oz/acre; Banvel, Weedmaster (1 pt/acre)
2,4-D amine, Rage D-Tech (1.5 pt/acre)
Crossbow – 2 qt/acre; Curtail 3 qt/acre
Cim. Plus – 0.125 oz/acre; Cim. Max – 0.25 oz + 1 pt/acre
Telar XP – 0.5 oz/acre; Chaparral – 1.75 pt/acre
Overdrive – 6 oz/acre

Linear, notched leaves similar to dandelion; taproot

Heart-shaped seedpods
Hairy bittercress: winter annual broadleaf
Aim – 2 oz/acre
Chaparral or Opensight – 2.25 oz/acre
Cim. Max – 0.5 oz + 2 pt/acre; Cim. Plus – 0.5 oz/acre
2,4-D amine, Weedmaster (1 pt/acre)
Spiny sowthistle: winter annual broadleaf

Aim – 2 oz/acre
Banvel, GrazonNext HL, Rage D-Tech (1.5 pt/acre)
2,4-D amine, Weedmaster (2 pt/acre)
Grazon P+D – 3 pt/acre; Crossbow, Curtail (3 qt/acre)
Cimarron Plus – rate?; Cimarron Max – 0.5 oz + 2 pt/acre
Telar XP – 0.5 oz/acre; Chaparral - 2 oz/acre
Overdrive – 6 oz/acre
White clover: perennial broadleaf

GrazonNext HL, PastureGard HL, Surmount, Weedmaster (1.5 pt/acre)
Banvel, Remedy Ultra (1 qt/acre)
Grazon P+D – 3 pt/acre; Curtail – 2 qt/acre;
Crossbow – 3 qt/acre; Chaparral - 1.75 oz/acre
Cimarron Plus – 0.375 to 0.625 oz/acre; Overdrive – 8 oz/A
Cimarron Max – 0.5 oz + 2 pt/acre

Trifoliate leaves with white water markings usually
Curly dock: perennial broadleaf

Crossbow, Curtail (3 qt/acre)

**2,4-D amine (expect regrowth)**, Grazon P+D, Weedmaster (3 pt/acre)
GrazonNext HL, PastureGard HL, Weedmaster, Banvel, Remedy Ultra (2 pt/acre)
Surmount, Weedmaster before bolt (1.5 pt/acre)
Milestone – 0.375 pt/acre; Redeem – 1 pt/acre
Overdrive – 8 oz/acre; Cimarron Plus - 0.125 oz/A; Cimarron Max
Chaparral – 2.25 oz/acre
Common dandelion: perennial broadleaf

Banvel, Rage D-Tech, GrazonNext HL (1.5 pt/acre)
Weedmaster (2 pt/acre)
2,4-D amine – 3 pt/acre
Crossbow, Curtail (3 qt/acre)
Cim. Plus – 0.125 oz/acre; Cim. Max – 0.25 oz + 1 pt/acre
Chaparral – 1.75 oz/acre; Overdrive – 8 oz/acre
Ribbed or ridged veins on lower leaf surface

Buckhorn plantain: perennial broadleaf

Banvel, Remedy Ultra, Weedmaster (2 pt/acre)
GrazonNext HL, PastureGard HL, Rage D-Tech (1.5 pt/acre)
2,4-D amine, Grazon P+D (3 pt/acre)
Crossbow, Curtail (3 qt/acre)
Cim. Plus – 0.125 oz/acre; Cim. Max – 0.25 oz + 1 pt/acre
Chaparral - 2.25 oz/acre; Overdrive – 8 oz/acre
Buttercup species: annual / perennial broadleaf

Weedmaster – 1 to 3 pt (preflower to late bloom)
2,4-D amine – 2 pt/acre; Grazon P+D – 3 pt/acre
Crossbow – 1 qt/acre annuals, 3 qt/acre perennials
Milestone – 0.375 pt/acre
GrazonNext HL, Rage D-Tech (1.5 pt/acre)
Cim. Plus – 0.125 oz/acre; Cim. Max – 0.25 oz + 1 pt/acre
Telar XP – 1 oz/A; Chaparral – 2 oz/A; Overdrive – 6 oz/A

3-lobed leaves
Bright yellow flowers
Horseweed: annual broadleaf (winter or summer?)
Banvel, GrazonNext HL, Surmount (1.5 pt/acre)
2,4-D amine, Crossbow, Weedmaster (2 pt/acre)
Grazon P+D – 3 pt/acre
Curtail – 3 qt/acre; Milestone – 0.375 pt/acre
Cim. Plus – 0.125 oz/acre; Cim. Max – 0.25 oz + 1 pt/acre
Chaparral – 1.75 oz/acre; Overdrive – 6 oz/acre

Narrow, toothed leaves with no petioles; shallow fibrous roots
Narrowleaf vetch
Winter annual

Vetch species
winter annual or perennial broadleaf

- Milestone - 0.375 pt/acre
- GrazonNext HL – 1.5 pt/acre
- Banvel, PastureGard, Remedy Ultra, Weedmaster (1 qt/A)
- Crossbow – 3 qt/acre
- Cim. Plus – 0.375 to 0.625 oz
- Cimarron Max - 0.25 oz + 1 pt/acre
- Curtail – 2 qt/acre
- Grazon P+D – 3 pt/acre
- Chapparral – 1.75 oz/acre
- Overdrive – 6 oz/acre

Tendrils, seed pods round and black when mature
Cutleaf eveningprimrose: biennial broadleaf

Banvel, GrazonNext HL, Weedmaster (2 pt/acre)
PastureGard HL, Rage D-Tech (1.5 pt/acre)
Milestone – 0.375 pt/acre
Cimarron Plus – 0.125 oz/acre (tankmix with 2,4-D helps)
Telar XP – 0.5 oz/acre; Chaparral – 1.75 oz/acre
Overdrive – 6 oz/acre
Thistle Control

- Late fall or early spring application
- Treat at rosette leaf stage
- Crossbow – 4 qt/acre; Curtail – 3 qt/acre
- 2,4-D ester - 2 qt/acre
- Grazon P+D – 1.5 qt/acre
- Banvel, GrazonNext HL, Surmount, Weedmaster (1 qt/acre)
- PastureGard HL, Rage D-Tech (1.5 pt/acre)
- Milestone – 0.375 pt/acre
- Cimarron Plus – 0.25 to 1.25 oz/acre
- Cimarron Max – 0.5 oz + 2 pt/acre
- Telar XP – 1 oz/acre (Musk thistle)
- Chaparral – 1 to 3 oz/acre; Overdrive – 8 oz/acre
Wild garlic: clump forming perennial
Feb - Mar application of...
Cimarron Plus 0.125 to 0.25 oz/acre
Cimarron Max 0.25 oz + 1 pt/acre
Chaparral – 1.75 oz/acre
2,4-D amine 3 qt/acre (add 0.25% NIS)

Hollow stems
underground bulbs
# Plants Poisonous to Horses

<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Poisonous to Horses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Showy crotalaria</td>
<td>Sweet clover</td>
</tr>
<tr>
<td>Black cherry</td>
<td>White snakeroot</td>
</tr>
<tr>
<td>Black nightshade</td>
<td>Horsenettle</td>
</tr>
<tr>
<td>Poison hemlock</td>
<td>Marijuana</td>
</tr>
<tr>
<td>Bracken fern</td>
<td>Red buckeye</td>
</tr>
<tr>
<td>Hemp dogbane</td>
<td>Lantana</td>
</tr>
<tr>
<td>Mustard species</td>
<td>Perilla mint</td>
</tr>
<tr>
<td></td>
<td>Groundsel</td>
</tr>
<tr>
<td></td>
<td>Black locust</td>
</tr>
<tr>
<td></td>
<td>Casterbean</td>
</tr>
<tr>
<td></td>
<td>Bitter sneezeweed</td>
</tr>
<tr>
<td></td>
<td>Butterfly milkweed</td>
</tr>
<tr>
<td></td>
<td>Red maple</td>
</tr>
<tr>
<td></td>
<td>Pokeweed</td>
</tr>
</tbody>
</table>
Conditions of Internal Poisoning

Grazing animals will not eat poisonous plants unless forced to do so by some unusual or artificial condition.
Conditions of Internal Poisoning

- Lack of good forage – drought, overgrazing, etc.
- Deficient rations – unbalanced diet
- Waste or trash – garden waste, houseplants, etc.
- Newly cultivated areas – exposed roots
- Dry or partially dry water holes
- Incidental causes
Poisonous Plants When Taken Internally

- **Bacteria and Algae**: from farm ponds and polluted streams
- **Fungi**: mushrooms
- **Vascular Plants**: herbaceous and woody plants
Black Nightshade
(Solanum nigrum)

- Dangerous
- Parts of Plant: leaves and especially unripe green fruit
- Poisonous Principle: solanine glycoalkaloids, causes death from respiratory paralysis

Horses: acute – mouth irritation and gastrointestinal lesions
chronic – unthriftiness, jaundiced mucous membranes, constipation
Horsenettle
*(Solanum carolinense)*

- **Plant Parts:** ripe berries, green berries and leaves
- **Poisonous Principle:** toxic alkaloid solanine
- **Animals Poisoned:** all livestock

**Horses:**
- acute – mouth irritation and gastrointestinal lesions
- chronic – unthriftiness, jaundiced mucous membranes, constipation
Hemp Dogbane
(*Apocynum cannabinum*)

- **Group 1 (dangerous)**
- **Parts of Plant:** green or dry leaves – 15 to 30 g of green leaves can kill horse or cow
- **Poisonous Principle:** resins and glycosides with cardioactivity
- **Animals Poisoned:** cattle, horses, and sheep

Horses: increased temperature and pulse, dilated pupils, discolored mucous membranes
Crotalaria

(Crotalaria spectabilis)

- Dangerous
- Parts of Plant: leaves, stems, roots, seeds (dry or green)
- Poisonous Principle: pyrrolizidine alkaloid monocrotaline
- Animals Poisoned: all livestock – 2 g of seed fed daily for 7 days will kill 50 lb hog, 9 lb of dried leaves will kill 300 lb steer in 4 days

Horses: chronic unthriftness, incoordination, aimlessly walking, jaundiced mucous membranes
Jimsonweed  
(*Datura stramonium*)

- Dangerous
- Parts of Plant: all parts, but particularly seeds
  0.06 to 0.09 % of animal weight is fatal to cattle

The tree *Daturas* found in South America is very toxic, and is commonly known as the borrachero or drunk tree.

Horses: rapid pulse and heartbeat, dilated pupils, dry mouth
Sweet Clover
(*Melolitus*)

- Poisonous Principle: Moldy hay may contain dicoumarin which interferes with blood clotting
- Animals Poisoned: cattle, horses, sheep
- Horses: massive blood loss, skin swelling
Butterfly Milkweed
(Asclepias tuberosa)

- Dangerous, but rarely eaten
- Parts of Plant: all parts, green or dried (toxicity decreases with maturity)
- Poisonous Principle: cardiac glycosides and resinoids
- Animals Poisoned: sheep, cattle, horses, poultry
- Horses: staggering, weakness, depression, dilated pupils
Pokeweed
(Phytolacca americana)

- Dangerous
- Parts of Plant: roots (most toxic), shoots, leaves, and berries
- Animals Poisoned: cattle, horses, hogs (roots), causes abortion in cows
- Horses: severe gastroenteritis, cramps, diarrhea, convulsions
Perilla Mint
*(Perilla frutescens)*

- Dangerous
- Eaten during dry summers when forage is scarce
- Parts of Plant: leaves and stems
- Found along the edge of woods and streams
- Poisonous Principle: perilla ketone, egomaketone, isoegomaketone
- Animals Poisoned: cattle and horses

Horses: respiratory distress when exhaling, grunting, nasal discharge
Bracken Fern
(Pteridium aquilinum)

- Dangerous
- Parts of Plant: leaves and rhizomes, fresh or dry
- Poisonous Principle: causes thiamine deficiency
- Animals Poisoned: cattle, horses, sheep, chickens, hogs

Horses: incoordination, legs spread as if bracing against falling
Black Cherry
*(Prunus serotina)*

- **Dangerous**
- **Parts of Plant:** leaves, twigs, bark, seeds
- **Poisonous Principle:** hydrocyanic acid (prussic acid), hydrogen cyanide is released in stomach when fresh leaves are eaten
- **Animals Poisoned:** cattle, horses, sheep, goats, dogs, birds

Horses: difficulty breathing, bloat, staggering
Cherry Laurel
(*Prunus caroliniana*)

Cherry bark
Black Locust
*(Robinia pseudoacacia)*

- Dangerous
- **Parts of Plant:** inner bark, root sprouts, wilted leaves, and seeds
- **Poisonous Principle:** alkaloids and glycoside
- **Animals Poisoned:** all livestock
- **Horses:** weakness, posterior paralysis, loss of appetite
St. John’s Wort  
(*Hypericum perforatum*)

- Parts of Plant: fresh plant and dried hay
- Poisonous Principle: hypericin, a red fluorescent pigment that is a photosensitizing compound
- Animals Poisoned: cattle, sheep, horses, goats
- Horses: photosensitization (white skin peels off, itching, blindness)
Red Maple

- Wilted leaves are toxic.
- Cattle and horses have been poisoned.
- Toxic principle not known.
Red Buckeye

- Dangerous
- Parts of Plant: young leaves in spring and seeds in fall
- Poisonous Principle: glycosides, alkaloids, and neurotoxins
- Animals Poisoned: horses, cattle, pigs
Mustards

- Poisonous principle: mustard oil (isothiocyanates)
- Animals poisoned: pigs, cattle, horses
- All plant parts are toxic.
Marijuana

- Dangerous, but uncommon
- Parts of Plant: leaves and stalks (most toxic)
- Poisonous Principle: resin tetrahydrocannabinol
- Depression of central nervous system
- Animals Poisoned: cattle, horses
Poison Hemlock

- Dangerous but rarely eaten
- Parts of Plant: leaves and unripe fruit
- Poisonous Principle: alkaloids, also contains conine and coniceine which are teratogenic
- Animals Poisoned: horses, cattle, swine, poultry, goats, sheep
White Snakeroot

- Dangerous
- Parts of Plant: all parts, green or dried
- Poisonous Principle: alcohol (trematol) and glycosides
  Daily digestion necessary for toxicity
- Animals Poisoned: cattle, sheep, hogs, horses, mules, and goats
Bitter Sneezeweed

- **Group 1 (dangerous)**
- **Parts of Plant:** leaves, stems, flowers, and fruit
- **Poisonous Principle:** sesquiterpene lactone
- **Animals Poisoned:** sheep, cattle, horses
Lantana

- Parts of plant: all
- Poisonous Principle: Contains triterpenoid and other compounds that irritate the mucosa lining the gastrointestinal tract
- Animals poisoned: cattle, sheep, humans, horses
Buttercup

- Minor importance
- Parts of Plant: top leaves and stems
- Poisonous Principle: irritant oil (protoanemonin)
- Milk of cows is bitter and reddish in color
- Animals Poisoned: cattle, other animals less frequent
Castorbean

- Dangerous
- Parts of Plant: leaves and seeds (contaminated grain)
- Poisonous Principle: alkaloids, hydrogen cyanide
- Animals Poisoned: horses, cattle, sheep, pigs, poultry, and dogs
Groundsel

- Contains alkaloids
- Suspected of poisoning cattle and horses
Poison Ivy

- Toxic Principle: phenolic compound urushiol
- Mucous and membrane irritant
- No effect on livestock
- Breathing smoke may cause irritation.