Poisonous Plants
And How They Pertain to Livestock

Mia Cory
District Conservation Technician
Fremont Conservation District & USDA-NRCS

What are poisonous plants?

- Defined as, "*A plant that when touched or ingested in sufficient quantity can be harmful or fatal to an organism or any plant capable evoking a toxic and/or fatal reaction.*"

5 Key Points

- Can be Native & Non- Native plants
- Poisonous/toxic doesn't mean noxious
- Have a variety of effects
- Dose directly effects toxicity
- Toxic to one, doesn't mean toxic to all

Variety of Effects to Livestock

- Death
- Skin abrasions
  - Bumps, patches, blisters, etc.
- Neurological Issues
  - Acting “Loco”, muscle tremors
- Reproductive issues:
  - Still birth, deformations, suppressed estrus, decreased spermatogenesis, overall sterility, etc.
- Weight loss
- Respiratory issues

Lupine induced crooked calf syndrome
Photo from Science Direct

Photo from John Wiley & Sons library

Native Plants

- **Loco Weeds**
  - Perennial with long tap root
  - Can be purple or white with borne flowers on a leafless stalk, leaves are elliptical with silver hairs
  - Swainsonine is principal toxin - Addictive once consumed by livestock
  - Causes, Locoism: Animals acting neurotically
  - No treatment methods other than removal from access to the plant, though recovery may take months if at all but can survive


Photo Credit- CSU EXT. Small Acreage Management team

Horses, cattle, sheep, goats, and wildlife (elk, deer, antelope) are poisoned by eating locoweed.

Native Plants

- **Water Hemlock**
  - Perennial herbaceous plant
  - Distinctive small green or white flowers arranged in an umbrella shape, with palmate leaf shape
  - Cicutoxin is principal toxin, 30-60g is lethal
  - Symptoms are almost immediate, death often occurs within 2-3hrs
  - Tremors, respiratory paralysis, myocardial damage, and constant chewing or “grinding” of teeth

Poisonous to cattle, horses, swine, sheep and goats.

Native Plants

- **Lupine**
  - Perennial herbaceous plant
  - Many varieties, but flowers are blue/purple pea shaped, leaves are alternate, palmately compound
  - Principal toxin is anagyrine and alkaoloids
  - 0.5-1kg a day is enough to onset symptoms
  - Crooked calf disease, (days 40-70 in gestation period), acute fatal neurologic disease (sheep), among others

Toxic to cattle, horses, goats, sheep

Native Plants

- **Death Camas**
  - Herbaceous perennial
  - Small, greenish, white to yellow flowers with grasslike, V-shaped parallel leaves arising basally from a bulb
  - Zygacine and zygaenine are principal toxins (Steroidal alkaloids)
  - All species are toxic
  - Half pound is start of symptoms, 2-2.5lbs is lethal
  - Salvation, vomiting, weakness, convulsions, coma, death


Photo courtesy of CSU Extension

Sheep are most susceptible

Non-Native Plants

- **Russian Knapweed**
  - Perennial rhizomatous plant
  - Lavender to white flowers bunched at top of stalk, leaves are arachnoid on bottom, but the rosette leaves are oblanceolate, pinnately lobed
  - Repin is principal toxin
  - Causes chewing disease, meaning animals continually chew- giving appearance of grazing but will starve
  - Nervous system damages, similar to Parkinson's in humans
  - No cure


Photo courtesy of CSU Extension

Poisonous to horses, but cattle, goats and sheep can consume

Non-Native Plants

- **Black Henbane**
  - Biennial Herb
  - Flowers are greenish yellow or white with purple veins, five points that produces fruits. Alternate leaves that are sessile, coarsely toothed
  - Trophane Alkaloids are principal toxin (Nightshade family)
  - Takes only a tenth of a percent to 0.3% to show symptoms
  - Central nervous system excitement followed by depression with decreased heart rate, and paralysis of the digestive system

Very low palatability, rarely eaten

Non-Native Plants

- **Houndstongue**
  - Biennial – Rosettes first year
  - Flowers are regular reddish, purple in scorpioid racemes, leaves are oblong-laceolate in shape up to 18 inches long
  - Pyrrolizidine alkaloids are principal toxin
  - 15mg of dried plant over ~ 2 weeks is fatal
  - Liver Disease
  - Rarely eaten in green stage, but can be found in hay

Toxic too cattle, horses, sheep and goats

Non-Native Plants

- **Poison Hemlock**
  - Biennial herbaceous plant
  - Small white flowers with five petals. Leaves are alternate three to four times pinnately dissected
  - Coniine is principal toxin
  - 2-4% of body weight is lethal dosage with Seeds and root being most toxic
  - Death in 2-3 hours with no cure
  - Causes respiratory paralysis, muscle tremors, incoordination

Toxic to cattle, horses, sheep, goats, swine, and wildlife

Other Toxic & *Potentially Toxic Plants*

- Ponderosa Pine
- Spurges
- Yellow-Starthistle
- St. John's Wort
- Delphinium (Larkspur & Monkshood)
- Milkweeds
- White top
- Broom Snakeweed
- *Russian Thistle*
- *Canada Thistle*
- *Koshia*
- *Pigweed*
- *Curly Cup Gumweed*
- *Curly Dock*
- *Paintbrush*
  - *Variable by conditions and soil types*

OH NO! How Do I Get Rid of Poisonous Plants!?

Photo from All About Feed

Importance of Management

- Over Grazing
- Adequate forage
- Weed Management
- Pastures
- Ditches
- Rights of ways
- KNOW YOUR PLANTS ☺

How to manage? Mechanical Methods:

- PPE!!!! Wear gloves when removing poisonous plants! Also, long sleeves or making sure you have protection for arms, legs, face, etc.
- Remove seed heads, and cut at least four inches below soil to remove root crown, if not rhizomatous
- Most effective on annuals and biennials
- Remove all roots on perennial weeds to prevent regrowth

How to manage? Cultural Methods:

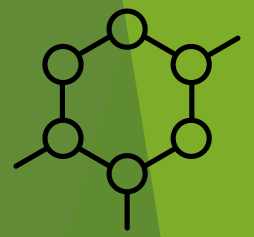
- **Cultural control will be an ongoing battle**
  - Replanting
  - Resource utilization
  - Feed weed-free forage and hay, don’t pasture animals (Kind of a null point!)

How to manage? Bio Controls?

- Will not eradicate a population of weeds
- Naturally suppresses infestations but again will not eradicate them
- Not an effective method if you are trying to remove poisonous plant populations
- Use mechanical or chemical means at perimeter to prevent spread (Some chemicals will kill the bio controls so making sure you're aware of where you are and where you released)

How to manage? Chemical Methods:

** Call your local County Weed Manager or Certified Applicator **



- **Brittany Pierce**
  - Fremont County Weed Manager
  - 719-276-7317
- **Kayla Malone**
  - Chaffee County Weed Manager
  - 719-539-3455
- **Charles Bryant**
  - Huerfano County Weed Manager
  - 719-989-1353
- **Marisa Nuezil**
  - Teller-Park Conservation District Manager (*Contracts weed sprayer*)
  - 719-472-3671

For all other County weed managers or District managers with weed programs statewide, click here

QUESTIONS?

Resources:

- A. P. Knight, R. G. Walter. A Guide to Plant Poisoning of Animals in N. America. Teton NewMedia. 2001
- A.P Knight. Plants Poisonous to Horses. CSU. Feb 2005