Poisonous Plants

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Objectives

- Discuss the factors that cause an animal to consume poisonous plants
- Describe the signs of oak poisoning
- List and recognize plants that contain cyanide
- Describe signs of cyanide poisoning
- List and recognize plants that contain excessive nitrate
- Describe signs of nitrate poisoning
- Discuss laboratory methods for diagnosing plant poisoning in animals
Sources of Poisonous Plants

- Pastures and ranges
  - Overgrazed pasture or range – hungry livestock
  - New pasture or range – naïve livestock
  - Piled limbs and trees – access to livestock

- Residential areas
  - Wilted, trimmed plant branches – access to animals
  - Fence line plants – access to animals

- Homes
  - Pot plants – access to pets
  - Garden plants – access to pets
Certain Plants Are Poisonous

- Certain stages of growth
  - Certain times of year
- Certain parts of plants
- Stressed plants
  - Drought, frost, trimmed, piled
- Eaten in large quantities
- Overgrazed forages force grazing toxic plants
- Wilted trimmed or piled plants
- Symptoms similar to chemical poisoning and infectious diseases
Prevention of Plant Poisoning

- Move animals
- Mowing
- Herbicide spraying
- Do not allow access to
  - Wilted trimmed plants
  - Wilted piled plants
  - Drought stressed plants
  - Frost stressed plants
Detection of Poisonous Plants

- Search pasture or range
  - Evidence of grazed unusual plants
- Examine hay
  - Evidence of unusual plants
- Test hay
  - Evidence of toxins
- Identify poisonous plant
  - Appropriate animal treatment
Laboratory Diagnosis of Plant Poisoning

- Blood tests
- Urine tests
- Post-mortem tests
  - Stomach contents
  - Liver tissue
  - Kidney tissue
Oak

- Toxic plant parts
  - Oak buds
  - Young oak leaves
  - Green acorns
- Toxic agent – gallotannin
  - Causes kidney damage
Clinical symptoms in cattle

- Thin body condition
- Nasal discharge – mucus, blood
- Diarrhea – mucus, blood
- Dehydration
- Thirsty
- Constipation
- Downer
Cyanide Plants

- Grain sorghums, Johnson grass, Sudan grass, wild cherry, plum, and peach trees
- Toxic plant parts
  - Stressed wilted leaves
    - Drought, frost, trimmed
  - New growth leaves
  - Dissipates in hay
- Toxic agent – prussic acid
  - Changes blood hemoglobin
  - Reduces tissue oxygen
Clinical symptoms in cattle

- Rapid breathing
- Suffocation signs
- Excitable
- Staggers
- Collapse
- Convulsions
- Bright red mucous membranes
- Rapid death
Wild Plum, Cherry, Peach

Flower
Wild Plum, Cherry, Peach
Leaf
Nitrate Plants

- Many grazing plants
- Toxic plant parts
  - Stressed lower stalks – drought
    - Grazing standing stressed plant
    - Grazing new growth following rain
    - Eating harvested stressed plant (hay)
- Toxic agent – nitrate converted to nitrite in rumen
  - Changes blood hemoglobin
  - Reduces blood oxygen
Clinical symptoms in cattle
- Rapid breathing
- Suffocation signs
- Excitable
- Staggers
- Collapse
- Convulsions
- Brownish blue mucous membranes
- Rapid death
Dallisgrass

- Toxic plant parts
  - Seed heads – ergot (fungus)
- Toxic agent
  - Affects nervous system
Clinical symptoms in cattle
- Excitable
- Staggers
- Collapse
- Convulsions
- Death
Dallisgrass Ergot
Ergot Body
Dallisgrass Ergot
Ergot body
Coffee Senna

- Toxic plant parts
  - Seedpods, leaves, stalks
  - Dried seedpods and dried piled plants most toxic
- Toxic agent
  - Affects muscles
Clinical symptoms in cattle

- Weakness
- Diarrhea
- Dark urine
- Downer
- Death
Oleander

- Toxic plant parts
  - Green leaves (bitter)
  - Brown leaves (palatable) – dead, trimmed
- Toxic agent
  - Causes heart damage
Clinical symptoms in livestock and pets
- Depression
- Weakness
- Tremble
- Convulsions
- Coma
- Sudden death