

# **Diagnosis of Poisonous Plant Intoxications**

**ADVS 5860/RLR 5860**

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# Inaccurate Field Methods

- “The plant is there so it must be killing ‘em”
- “The animals looked like they were poisoned so it must be plants”
- “I’ve never lost stock to anything but plants”

# Real Aids in Diagnosis

- Diagnosis of any disease condition is like putting together a 500 piece jigsaw puzzle with some of the pieces missing. Even though you will not have all the information, you may have enough to know the general appearance of the picture

# Real Aids in Diagnosis (cont.)

- Availability of the plant
  - ONLY indicates the potential for exposure
  - Many poisonous plants are avoided by animals
  - Poisonous Plants occur in relatively ALL FIELDS

# Real Aids in Diagnosis (cont.)

- Clinical Signs
  - What plant poisonings are they compatible with?
  - Allows the organization of a differential list
  - Many disease conditions have overlapping or similar clinical signs to plant poisonings
  - Diagnosis cannot be made upon clinical signs alone!

# Real Aids in Diagnosis (cont.)

- Pathologic Lesions
  - What plant poisonings are they compatible with?
  - Allows further organization of a differential list
  - Many disease conditions have overlapping or similar lesions to those caused by plant poisonings
  - Diagnosis cannot be made upon lesions alone!

# Real Aids in Diagnosis (cont.)

- Direct Evidence of Plant Ingestion
  - Evidence that plants have been grazed
  - Are the pastures over-grazed?
    - Overgrazed pastures make this difficult
  - Is there evidence of toxic plants in the hay?
  - Visual identification of plants in digestive content
  - Microscopic identification of plants in digestive content

# Real Aids in Diagnosis (cont.)

- Indirect Evidence of Plant Ingestion
  - Chemical analysis of animal organs
  - Chemical analysis of digestive contents
  - Chemical analyses of blood or urine

# Sample Collection – Dead Animals

- - Liver
- - Kidney
- - Stomach or rumen content
- - Fat
- - Urine
- - Eye
- - Brain
- - Small intestinal content
- - Large bowel content
- - Hay, water, and forages

# Sample Collection – Live Animals

- - Stomach or rumen content
- - Whole blood
- - Serum
- - Urine
- - Feces
- - Hay, water, and forages

# Sample Collection

- For any one plant, there may be one sample that is the “best” sample, but it is best to collect all sample types if possible.
- Samples for toxicological analyses should be stored frozen to minimize the breakdown of compounds, except for whole blood.

# Case Examples

- White Snakeroot
- Datura
- Thermopsis
- Adonis
- Halogeton

# Questions

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