

**Poisonous Plant Class
ADVS and FRWS 5860**

Quiz #1; January 31, 2008

Name (1pt) _____

Score _____ of 20 pts

1) (5 pts) Paracelsus (1493-1541) said:

“All substances are **POISONS**; there is none which is not a **POISON**. The right **DOSE** differentiates a **POISON** from a **REMEDY**.”

2) (2 pts) In 1949 Stoddart said:

“Livestock **POISONING** is nature’s sign of a **SICK RANGE**.”

3) (8 Pts) List 4 scientific disciplines that might be involved in providing a diagnosis and solution to a poisonous plant toxicosis in cattle? For each discipline describe what role they may have.

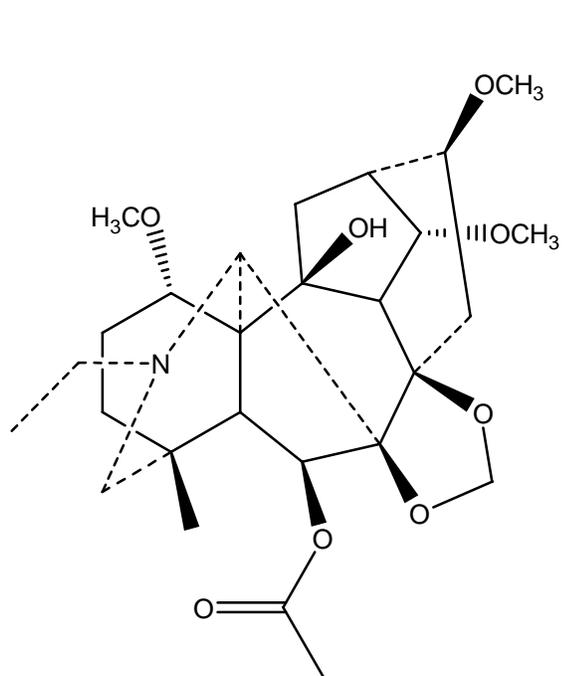
- **CHEMIST- is the toxin present in plant or animal tissues. How much toxin is in plant and animal tissues.**
- **TAXONOMIST- Plant identification.**
- **RANGE SCIENTIST – When, where, why and how much do animals eat poisonous plants. Provides management strategies to avoid poisoning.**
- **VETERINARIAN – Observes clinical signs of poisonings. Diagnosis poisoning. Recommends treatment for poisoned animals.**
- **TOXICOLOGIST – Determines dose that causes clinical signs of poisoning or death. Fate of toxins in the animal.**
- **RANCHER – observes poisoning. Implements management strategies.**
- **PATHOLOGIST – Studies the progression/pathogenesis of the poisoning/disease. Determines which organs are affected and how they are affected. This information is critical in prognosis and developing antidotes for the poisoning/disease.**
- **EXTENTION AGENT- Plant identification. Communicates management strategies. Contact between scientists and producers.**

4) (4 Pts) List 4 “real” components that assist in the diagnosis of plant poisonings.

- **Availability of the plant**
- **Clinical signs that are compatible with the intoxication of a specific plant**
- **Pathologic lesions that are compatible with the intoxication of a specific plant**
- **Direct evidence of plant ingestion**
 - **Field observations of plant consumption**
 - **Plant identified in digestive tract**
- **Indirect evidence of plant ingestion**
 - **Toxicologic analyses to identify toxic plant components**

5) Extra Credit (2 pt). Shown below are two common larkspur alkaloids. Indicate which structure is an MSAL-type alkaloid and which is an MDL-type alkaloid. Which class of alkaloid is more toxic?

MDL-type alkaloid



MSAL-type alkaloid (more toxic)

