Reducing Toxic Plant Issues in Pastures

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While most plants are safe for consumption by livestock, a few plant species can sicken or even kill animals. Understanding what poisonous plants are, which plants to watch for, and under what conditions they can be toxic to livestock is essential to making pasture management decisions. There are important principles about poisonous plants and common situations that result in animals ingesting poisonous plants. Consult the local county extension agent for a list of common poisonous plants in the area. If plant poisoning is suspected, call a veterinarian or other specialist immediately, as a rapid response is often required to prevent serious injury or death.

What Makes a Plant Poisonous?

The level of poisoning is determined by the amount of the toxic plant consumed, size and species of the animal, health of the animal, and concentration of the toxin in the plant part. Symptoms may vary from a decrease in performance to more serious manifestations, or even sudden death. The level of toxicity in animals can vary over time due to irregularity in animal ingestion, but also can be due to the variability in the amount of the toxic compound present in the plant. The presence of a toxic compound can vary dramatically depending on environmental conditions, management of the pasture, and can even be dependent on the plant part that is eaten (leaves, stems, roots, fruit, and even seeds). Thus, toxicity is the result of many factors that can make diagnosis and determination of the level of seriousness difficult to determine. For simplicity, poisonous plants are separated into three categories:

1. **Highly toxic** - small amounts (<5% of feed) can result in serious injury/death.
2. **Moderately toxic** - moderate amounts (5% - 25%) can result in injury/death.
3. **Mildly toxic** - under certain environmental or management conditions, these plants can be toxic.

When Should Pasture Managers Be Cautious?

Fortunately, toxicity concerns are often a result of specific situations. Understanding what conditions may lead to plant poisoning can help reduce the risk of animal harm or death.

- **First spring grazing.** When animals are put onto pasture for the first time in spring, poisonous plant tissue is young and more palatable. Livestock may feed on these plants, especially if other desirable forage (forage grasses) has not started to grow. To avoid this scenario, control poisonous plants and/or do not allow animals into these areas until ample desirable forage is present to reduce the risk.
- **When limited desirable forage is available.** When animals are hungry, for any number of reasons, their selectivity decreases and they may eat plants they would otherwise avoid. Make sure adequate forage is available, especially when poisonous plants are present. This scenario may be common especially under drought conditions, in the fall, or when pastures are overgrazed.
- **After herbicide is applied to pastures.** Many weeds are not palatable and are normally avoided, but after a herbicide application palatability can increase dramatically. After applying a herbicide to pastures, prevent grazing for at least 14 days to avoid this occurrence. Read the product label for more specific recommendations and always follow label directions.
- **After nitrogen is applied to pastures.** Fields with an abundance of nitrate-accumulating plants including pigweeds, common lamb's quarters, and common ragweed can become toxic after fertilization or following drought conditions. These common weeds take up excessive nitrogen and convert it to nitrate. If enough of these weeds are eaten, nitrate toxicity may result. If these weeds are present and consist of at least 20% of the feed in a fertilized field, they should be controlled before allowing animals to graze.
- **When yard waste/clippings are present.** Many ornamental shrubs and plants are both highly toxic and palatable to livestock. Avoid feeding or dumping yard waste/clippings into pastures or animal holding areas, as this is one of the most common scenarios for livestock poisoning in the Upper Midwest.
- **When animals are unfamiliar to a pasture or other area.** Animals that are being boarded at a new location are often susceptible to poisoning. When grazing a new area or newly seeded pasture, introduce animals gradually and monitor for any physical changes or changes in behavior.
- **When there are toxic plants in harvested forages.** Few options exist for preventing the presence of poisonous plants in purchased hay, but toxicity is common in this situation as animals often do not avoid poisonous plants when they are dried and mixed with desirable forage. Knowledge of the source of the hay is the only realistic way to prevent this situation.

Regular scouting of pasture areas prior to each grazing event is desirable to identify emergence of various plants that may present toxicity potential.

A detailed list of common poisonous plants found in Wisconsin along with a description of the level of toxicity and resulting symptoms of ingestion: http://www.uwex.edu/ces/crops/uwforage/PoisonPlants8-12.pdf

Information on species identification and pasture weed management: http://fyi.uwex.edu/weedsci/.

Searchable databases for poisonous plants:
http://www.vth.colostate.edu/poisonous_plants/
http://www.ansci.cornell.edu/plants/