



Vet Call

► by **Bob Larson**, Kansas State University

Consider toxic plants

An animal health aspect related to pasture management is to recognize that some plants can be poisonous to cattle. Most pastures contain at least some toxic plants, so just because toxic plants are present does not mean a rancher will experience losses in the herd. Many poisonous plants do not taste very good to cattle, so they are present without being grazed. However, when forage is limited due to drought or overgrazing, toxic plants are more likely to be consumed. There are also poisonous plants that cattle seem to prefer over other forages, but many times these attractive toxic plants do not cause problems because they are present in small enough quantities in a pasture that cattle do not consume a toxic dose.

Toxic plants and their effects

Cattlemen throughout history have known that some plants can be toxic to their animals. Poisonous plants that cause rapid death, long-term illness, or abortions and birth defects cause losses to herds in all parts of North America. Some poisonous plants are only present in a few small areas of the United States, while others are found over a wide geographic area. Some plants are poisonous during all phases of growth, while others are only poisonous (or more dangerous) during certain stages of growth or certain times of the year (learn more at www.ansci.cornell.edu/plants/index.html and www.vth.colostate.edu/poisonous_plants/report/search.cfm).

Trees or shrubs that can be toxic to cattle include oak, Japanese yew, buckeye and ponderosa pine (abortion). Toxic weeds include pigweed, locoweed, water hemlock, poison hemlock, milkweed, larkspur and perilla mint. Fescue and ergot toxicosis are due to toxins found in fungus that can infest otherwise safe plants. Blue-green algae, which can be present on stagnant water in late summer, is highly toxic to cattle. Nitrates (Johnsongrass, Sudan-sorghum hybrids, kochia, millet, lamb's quarter) and cyanide (cherry, Johnsongrass, Sudan-sorghum hybrids, milo, arrowgrass) are components normally present in some plants that can increase to dangerous levels during certain growing conditions.

Additionally, some plants accumulate toxic levels of the mineral selenium (locoweed, goldenweed, ironweed, saltbrush).

Plants that cause

damage to the heart will generally cause a very rapid death if a large enough dose is eaten. Because these plants can act quickly, often finding one or more dead animals is the first sign of a problem. If animals are detected early, or if the amount consumed is less than a lethal dose, cattle consuming heart-toxic plants may appear weak and depressed, and if the animal is examined by a veterinarian, a rapid or irregular heart rate may be detected. Purple mint (or perilla) is a common weed in some parts of the United States (particularly the Southeast) that can cause a type of pneumonia that arises due to damage to the walls of the air sacs in the lungs. Death can occur within 12 to 24 hours after eating a lethal dose, and affected cattle struggle to get enough air into their lungs.

Plants that can be toxic to the liver or kidney seldom cause a rapid death, but instead a slow decline in health and body condition that may or may not result in death.

The liver is important for many body functions and acts to detoxify a number of chemicals normally found in the body. Consuming plants that cause damage to the liver can result in the buildup of toxins from eating grass that would normally be removed

by a healthy liver. These toxins can cause the skin to become very sensitive to sunburn and can cause other signs of liver failure, such as weight loss and poor performance.

Some plants —

particularly plants such as oak trees that accumulate tannins — are toxic to the kidney. Cattle with kidney damage may show signs of reduced appetite, rapid weight loss and increased water intake.

Some plants are toxic to the nervous system. Examples include some types of ryegrass, locoweeds and water hemlock. Cattle that eat these plants may suffer from rapid death or longer-term weight loss and

nervous system signs, depending on the specific plant and the amount consumed. Signs of nervous system problems include staggering, apparent blindness, exaggerated movements and hyperexcitability.

Abortion or the development of birth defects can occur when

pregnant cattle consume certain toxic plants. Abortions caused by toxic plants are often difficult to diagnose, and the birth defects caused by some toxic plants are the same or similar to defects caused by genetic problems or viral infection. Locoweeds, tobacco, lupine and poison hemlock are known to cause birth defects in calves in certain situations when pregnant cows consume these plants.

Talk to your vet

To diagnose suspected plant poisonings, you should work with your veterinarian and a veterinary diagnostic laboratory. Your veterinarian can help you develop an accurate history and timeline for the problem.

To identify the cause of losses due to poisonous plants, the pasture or drylot and any other feedstuffs should be inspected; both live and dead animals should be examined; and diagnostic samples of plants, blood and tissues should be properly collected and then evaluated by trained diagnostic laboratory personnel.

The presence of toxic plants in pastures or hays is not proof that cattle have been harmed by the plants. However, finding evidence of consumption of potentially toxic plants by animals, either by observing evidence of grazing of suspected plants or by

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finding parts of these plants in the digestive tract of a dead animal is highly suggestive of poisonings.

To control and prevent losses due to toxic plants, producers should be able to recognize the plants in their area that are a concern and possibly use herbicides to spot-kill known toxic plants. However, one frustration when dealing with toxic plants is that toxic agents or palatability of some plants are increased during the wilting stage of plant death, and spraying with herbicide can cause an increase in toxicity. Therefore, one of the most obvious control measures, spraying toxic plants, may temporarily make the situation

worse rather than better. Always consult with weed specialists to determine the best herbicide product and timing choices when attacking a poisonous weed problem.

Because removing all toxic plants from a range or pasture is not likely to be practical or successful, good grazing management using stocking density, fencing, water development and salt/supplement placement to maintain good pasture health will minimize the incentive for cattle to graze toxic plants.

If it appears that a toxic-plant problem is occurring, cattle should be removed from the suspected pasture immediately and a veterinarian should be contacted. It is

important to work with veterinarians, extension agents, Natural Resources Conservation Service specialists, and range specialists who can all help develop a plan to keep pastures healthy and minimize the risk of toxic-plant poisonings.



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