

Toxic Plants

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Toxic plants are a major “pest” of the range livestock industry in much of the Southwest. A plant that has harmful biochemical or physiological effects on grazing animals is considered poisonous or toxic. More than 200 species of plants in Texas are toxic to grazing animals. About 80 species are thought to cause economically important loss.

All classes of livestock are affected by toxic range plants, including cattle, sheep, goats and horses. The Texas Veterinary Medical Diagnostic Lab at Texas A&M University diagnoses hundreds of toxic plant poisonings each year, especially during droughts.

Losses to the livestock industry vary from year to year, but average \$50 million to \$100 million annually in Texas. Broom snakeweed (*Gutierrezia sarothrae*) alone has been estimated to cause more than \$30 million in losses annually; it occurs on 35 percent of Texas’ rangelands.

What Risks Are Associated with Poisonous Plants?

- **Mild sickness to death in livestock.**
The consequences of toxic plant consumption by livestock range from mild sickness to death. The diagnosis of toxic plant poisoning is often difficult because of delayed responses and the fact that diseases and malnutrition can cause similar symptoms. The first symptom a livestock manager sees may be a dead animal.
- **Lower reproduction efficiency and loss of calf crop.**
Poisonous plants can cause reproductive problems in livestock. Symptoms include retained placentas, abortions, increased calving/lambing difficulties, and reduced reproductive efficiency. Knowing the poisonous plants that can cause these symptoms and closely inspecting your pastures to see if these plants are present can help you determine whether these symptoms are caused by toxic plants.
- **Reduction in animal gains.**
Many toxic plants cause animals to eat less and lose weight because physical abnormalities the plants cause make it difficult for animals to eat. Other plants affect internal physiological processes.

- **Increased livestock maintenance requirements.**
Animals may need to be removed from areas infested with toxic plants. Or, they may need extra supplemental feed because of their poor condition. In either case, production costs may increase.
- **Increased health costs.**
It is possible to treat some conditions caused by toxic plants, but treatment is costly. The rancher usually has much higher animal health costs when toxic plants are being consumed.

How Can I Reduce the Risks of Toxic Plants?

- **Know the plants that may poison your livestock.**
This is the first step in preventing poisonings. Some toxic plants are not present every year and thus do not pose annual threats. Some plants are not equally toxic to all species of livestock. Pictures and description books are helpful references in learning your plants.

Most poisonous plants are lethal only if animals eat relatively large amounts over a short time period. Because livestock normally eat a variety of plants, rangelands that are in good condition and have a variety of forages are generally safer than ranges in poor condition.

The toxicity of some plants depends on the plants’ growth phase, the season of the year, the growing conditions, and even the soil they are growing in.

Certain conditions can make some plants toxic that otherwise would not be, or increase the toxicity of other plants. Examples are drought-stressed plants, frost-damaged plants, and plants treated with herbicides or fertilizers.

- **Recognize problems early.**
If you can recognize toxic plants at different growth stages, and know how they affect livestock, you should be able to identify potential problems before they occur. Toxic plants may grow in colonies, as individual plants scattered throughout the pasture, or heavily throughout the pasture. The pattern may vary

from year to year. Once problem areas are recognized you'll be able to develop the proper management strategies.

- **Use good grazing management practices.**

Proper stocking rate is the key to good grazing management. Where there are plants that produce toxicity when eaten in small amounts, decrease grazing pressure by reducing the number of animals per area of land. This allows the animals to selectively graze around toxic plants. With plants that are not toxic unless eaten in large amounts, increase grazing pressure for short periods so no one animal consumes a toxic dose. Do not graze pastures infested with toxic plants when environmental conditions are extreme. If you must, watch animals closely.

Excessively rainy periods or small showers during a drought can cause toxic weeds to sprout rapidly and become abnormally abundant. Many toxic plants are more drought-resistant or respond to moisture sooner than desirable forage species, and may be the only source of "green" forage available for a period of time. Do not graze pastures infested with toxic plants until adequate desirable forage is available.

Several toxic plants are among the first to "green-up" in spring and may remain green longer in the fall. Use pastures infested with these plants during the correct time of year when other forage is available.

Maintain a few "toxic plant-free" pastures that can be used when other pastures are unsafe. You may need to control toxic plants to create such pastures, but often they already exist and all that is required is the redesigning of fencelines or grazing rotations.

- **Use good livestock management practices.**

Hungry animals should never be kept on, driven through, bedded in, or released into areas known to have toxic plants. Hungry animals are much less selective of forages and can consume large quantities of toxic plants in a short time.

Graze infested areas with the proper livestock species—that is, the species that will be least affected by the plants present.

Feed adequate amounts of protein, energy, minerals and vitamins when needed. Deficiencies may cause livestock to ingest toxic plants that would not normally be eaten. In general, supplemental feeding is most important during winter and early spring when forage quality is lower. Deficiencies in phosphorus or Vitamin A may cause abnormal appetites and increased consumption of toxic plants.

When possible, use animals that are native to the area being grazed. New animals coming in from other areas graze less selectively until they "learn" the new vegetation. The potential for livestock poisoning is higher for non-native animals than for native animals.

- **Select the proper kind of control method when needed.**

When toxic plants become a dominant part of a pasture's vegetation, it may be necessary to control them. If toxicity problems occur only seasonally, it may be smart to concentrate on controlling plants in only a few pastures. Any treatment should be followed with proper grazing management strategies.

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For additional information see the Toxic Plant database at:
<http://texnat.tamu.edu>

For additional risk management information see: <http://trmep.tamu.edu>

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