

Poisonous Plant

With pastures in much of the country recovering from drought, cattlemen need to be especially cautious of cattle consuming poisonous plants.

by Troy Smith, field editor

The obvious difficulty drought delivers is a shortage of forage for grazing and, in the absence of irrigation, to harvest as hay. A less obvious problem is the proliferation of undesirable plants that seems to occur. Weeds, including the poisonous kinds, just seem to do better during and after a drought.

According to John Jennings, a University of Arkansas professor and forage specialist, undesirable plants frequently gain ground in drought-stricken pastures and fields. That's often followed by an increase in reports of cattle illnesses and deaths due to the consumption of poisonous weeds. It happened last year in Jennings' part of the country.

He says it is likely to happen again this year.

"Toxic plants can be a real problem during drought — plants like perilla mint, for example. There were several reports last year of cattle deaths due to perilla mint," says Jennings. "It's fairly common here, usually growing in stands of trees and other shady places. It's showing up more in pastures where desirable plants have been grazed short. Under those conditions, cattle may eat things they normally wouldn't."

Jennings says that's particularly true when cattle are moved from farm to farm — from an environment of low forage availability to one where standing herbage is available, but includes toxic plants.

"When they're hungry," adds Jennings, "cattle will graze just about anything that's green."

A competitive advantage

It's really not that weeds are so much more drought-hardy than desirable forage species. What usually happens is that undesirable plants gain a competitive advantage during drought. Desirable forage plants experience the stress of insufficient moisture, but grazing creates stress, too, especially overgrazing. Longer periods of rest, as well as rain, are needed for these forages to recover and regrow. Without the needed relief, desirable species may go dormant. Some plants suffering severe cumulative stress may even die.

That puts the cursed weeds in a better position to compete for available moisture and other nutrients.

They experience less, if any,

stress from grazing, since cattle usually find weeds much less palatable. When options are limited, however, cattle are more apt to graze those normally undesirable plants, including the toxic species. Even when the drought breaks, desirable forage grasses and forbs that

were severely stressed may be slow to respond. The undesirables may have the opportunity to exercise their competitive advantage. Weeds could comprise a significant portion of new plant growth.

Many undesirable plant species are potentially toxic if cattle consume sufficient quantities, and every region has its list of leading offenders. In the southwestern United States, species like filaree and peavine rank high, but the top spot goes to locoweed.

"Loco has always been an issue for our producers," says range nutritionist and New Mexico State University Extension Livestock Specialist Manny Encinias. "A cool-season legume, loco often is the first plant to green up and the last to go dormant. During

drought, it may be the only thing on the range that's green."

Lacking experience, nutrients

The reasons why cattle choose to graze loco or other toxic plants aren't always clear. It's not always because choice is severely

limited. Sometimes, explains Encinias, it may be that cattle are naïve to the environment and its flora. He notes how large numbers of stocker cattle procured from various states are grazed in New Mexico. Such cattle may have never been previously exposed to certain plant species growing on their new range.

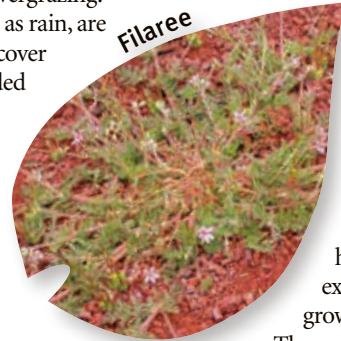
They may be more inclined to sample toxic plants than are native cattle. "Toxic plants also might be grazed because cattle are looking for something that's lacking in their diet," adds Encinias. "Cows calving in late winter and early spring have high

nutrient requirements, but feed quality may be low. If their protein requirements are not being met, cattle might select plants [that] are high in protein, such as loco. So, management of cattle diet may influence grazing selectivity."

Drought, combined with the conversion of more acreage to row-crop production, has left many regions short of forage. As a result, copious amounts of hay and baled crop residues are trucked across the country. Jennings says some cattle producers whose forage supplies have run out have shown a willingness to buy just about anything with

twine around it. They should be aware of the potential for these feedstuffs to contain toxic weeds.

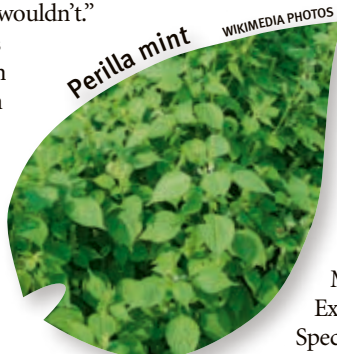
"For their own use or to sell, people are more likely to cut and bale whatever is available. That includes weedy areas that might contain poison hemlock, hemp dogbane and many other



Filaree

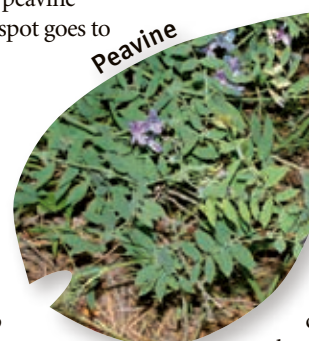


Johnsongrass



Perilla mint

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Peavine

Problems

plants that are poisonous,” states Jennings. “Cattle might sort them out when the hay is fed, but if the cattle are hungry, they might not.”

When good forage turns bad

It’s not just weeds that can be dangerous. Common forage crops and their residues can harbor levels of nitrate that are toxic to cattle. In a cow’s rumen, nitrate is converted to nitrite, which is absorbed into the bloodstream. Excessive nitrite absorption inhibits the blood’s ability to carry oxygen.

The accumulation of nitrate can occur when growing plants undergo stress. It can happen during drought or other weather conditions that hinder or interrupt growth. Despite their slowed growth rate, the plants continue to absorb nitrogen from the soil, storing nitrate in the lower leaves and stems. The risk of toxicity exists whether affected plants are grazed or cut for hay or silage. Nitrate accumulation can occur in a wide variety of plants, but the usual suspects include corn, sorghum, Sudan grass and Johnsongrass. The risk can be high for some millet species and cereal grains commonly harvested as hay, such as oats.

“Starting in 2011, we saw increased use of baled cornstalks and oat hay in New Mexico,” says Encinias. “Quite a bit of it had suffered heat and drought stress, and most of it probably was grown with a high fertilization rate. Many producers weren’t accustomed to feeding very much harvested feed, and especially feed with high nitrate risk. For some, it was a learning experience.”

Jennings says quite a few Arkansas producers also have learned the hard way about prussic-acid poisoning. Prussic

acid is old-time terminology for hydrocyanic acid. In the rumen, the compound is converted to cyanide. An animal’s reaction to cyanide poisoning can progress rapidly from muscle tremors to

convulsions and conclude in death from respiratory failure. It’s possible for the progression to occur within a period of 15 minutes.

“Because of prussic acid, Johnsongrass can be very dangerous during drought. It was a big problem in our area last year,” Jennings says. “In a typical summer, we might have a half-dozen cattle deaths where prussic acid poisoning is suspected. Last summer there were over 150 deaths.”

As with nitrate buildup in plants, the accumulation of prussic acid is triggered by stress. The potential for plant toxicity increases during drought or sudden changes in weather. Lush regrowth following hay cutting, grazing or frost can be particularly dangerous. Even under favorable growing conditions, young, rapidly growing plants will accumulate prussic acid. Sorghum-related species, including Sudan grass and Johnsongrass rank among high-risk forages. Unlike accumulated nitrate, though, prussic acid will dissipate from forages that are cut and properly cured for hay.

Standing forages can be sampled and tested for prussic acid. Quick delivery to a laboratory is necessary, since prussic acid levels will begin to dissipate as soon as samples are cut. If levels are dangerously high, grazing may have to be deferred or the forage may be harvested for hay.

Testing is advised for forages potentially high in nitrates, whether they are grazed or harvested, since nitrate



Locoweed



Poison hemlock

levels persist. Other high-energy feedstuffs may have to be fed along with high-nitrate forages to dilute nitrate levels in the total diet. Grinding and blending high-nitrate hay with “safe” forages is a frequently applied practice.

To wrap up

It’s nearly impossible to eliminate all risk to plant toxicity, especially for grazing cattle. However, risk may be minimized if producers avoid overgrazing of pastures and avoid introducing extremely hungry cattle to new pastures. Feeding hungry animals prior to turnout can help prevent overconsumption of potentially poisonous plants.

Producers are wise to take time to observe grazing cattle and what they are eating.

Note unusual behavior, including potential symptoms of toxicity such as diarrhea, rapid breathing, muscle spasms, lack of coordination or signs of distress ranging from depression to anxiety.

Producers are wise to become familiar with toxic species found in their respective areas. They may be surprised to find the list

includes many common plants seldom thought of as dangerous. Cocklebur, milkweed, curly dock, black cherry and oak can be toxic, as can many ornamental plants and shrubs. The list of species that may

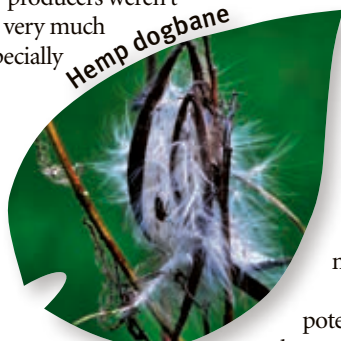
present a risk under certain circumstances at least is lengthy.

Fortunately, before their health is severely threatened, cattle usually have to consume fairly large amounts of toxic plants. That is not always the case, however. Negative consequences sometimes occur rapidly. Sometimes, they are deadly.



“Toxic plants also might be grazed because cattle are looking for something that’s lacking in their diet.”

— *Manny Encinias*



Hemp dogbane



Sudan grass



Millet

Editor’s Note: Troy Smith is a freelance writer and cattlemen located near Sargent, Neb.