

Livestock Health Series

Acorn Poisoning in Cattle

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Introduction

When forage is scarce, cattle will often search for alternative food sources. In Arkansas, where cattle are frequently grazed on pastures that may contain oak timber, the possibility exists for cattle to consume acorns. When cattle head to available timber ground and wooded lots around the farm in search of grazing or browsing during the fall, hungry cattle will frequently eat acorns dropped by oak trees. If these acorns are over-consumed, they have the potential for fatal poisoning.



Acorn in pasture

Many species of oaks exist in Arkansas, and most of them are considered toxic to animals. They typically affect cattle and sheep, but they also can intermittently cause toxicity in rabbits, chickens, goats and horses. Poisoning most commonly occurs when green, ripe acorns are consumed when they drop from oak trees in the fall. Occasionally, cattle consume buds and small leaves from standing or cut trees in the spring that could also lead to poisoning.

Clinical Signs

Tannins are the toxic agents found in acorns. Consumption of tannins can lead to gastrointestinal problems, severe kidney damage and death. Some cattle may consume acorns and experience no ill effects, while others suffer severe disease.

Early signs associated with acorn poisoning are related to gastrointestinal dysfunction. These include abdominal pain, poor appetite, diarrhea (often black or bloody in color) and occasional constipation. As the disease progresses, signs of kidney failure will present themselves. Affected cattle will exhibit dehydration (a dry, crusty muzzle and rough hair coat), increased thirst, general weakness, weight loss, frequent urination and a rapid, weak pulse. Edema (swelling due to fluid that has settled out into tissue) may be noted in the lower parts of the body such as the chest, legs and ventral abdomen. Some body cavities may also become filled with fluid.

Treatment

Since there is no specific antidote for acorn poisoning, treatment is limited. However, for cattle exhibiting signs of constipation, one gallon of mineral oil or a saline cathartic can be administered orally as a mild laxative. Activated charcoal can also be given to aid in absorption of the toxic agent. With these limited treatment options, emphasis should be placed on prevention.

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Prevention

The best practice for prevention of acorn poisoning is to keep cattle from coming in contact with the culprit. Fencing off an area where oaks are prevalent is the best way to prevent exposure. If that is not possible, supplementing the cattle with feed that contains 10 percent hydrated lime (calcium hydroxide) will lessen the hazard of acorn poisoning. Hydrated lime should be placed in a mixed ration because it is generally unpalatable to cattle. It can also be placed into a pelleted ration to get the desired consumption rate. If a producer is concerned about acorn poisoning in his herd, the following ration can be fed to cattle at 3-4 lb/head/day for adult cattle (1-2 lb/head/day for calves):

- 44% cottonseed or soybean meal,
- 40% dehydrated alfalfa meal, corn or cotton seed hulls,
- 6% vegetable oil or molasses and
- 10% hydrated lime.

The goal is to get cows to consume around 0.4 pound of hydrated lime per day. The use of molasses or vegetable oil is important to keep the hydrated lime from settling out of the ration and to increase palatability. Cattle that are not commonly fed grain should be slowly acclimated to consuming the full ration. In addition to the abovementioned supplementation, providing cattle with additional food sources will cause them to be less likely to search for acorns while grazing short pasture.

There appear to be fewer problems with acorn poisoning after a few hard freezes. Since freezing does not actually decrease the level of tannins found in acorns, the fewer problems are most likely due to the reduced palatability of acorns after weathering has occurred.

For more information about this disease and other diseases affecting cattle, contact your local county Extension office.

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