

VETERINARY CALL

by Bob Larson, Steve Ensley and Scott Fritz

Lead Poisoning

Learn the dangers of lead poisoning and how to spot symptoms in the herd.

It is important for producers to recognize poisons that can cause rapid death and severe illness in cattle. Lead is among the most common sources of poisoning.

Cattle, especially young calves, can be very curious about unusual items found in their environment. Sometimes cattle will find and consume broken batteries or electrical transformers; improperly disposed of farm chemicals; used crankcase oil; grease from machinery; construction materials such as putty, lead plumbing, and old paint; and ash from fires where lead-contaminated construction materials were burned. If you ranch in an area with lead mines, the soil and water can be high in lead because of contamination.

The target organ of lead is the brain, where it will cause abnormal signaling between nerve cells. High levels of lead will also affect red blood cells, bone marrow and small blood vessels and severely damage the kidneys and other organs.

Cattle are sensitive to lead and don't have to consume very much to have sudden and severe problems. Many times the first sign a rancher notices is one or more dead calves within a day or two. Other calves (and occasionally older cattle) in the group may appear to be blind, or

they may circle or press their heads against solid objects, have muscle tremors, grind their teeth, froth at the mouth, show signs of colic, or rhythmic ear twitching. Cattle with any of these symptoms can die rapidly.

These signs can be very similar to other diseases such as grass tetany, polio, nervous coccidiosis, listeriosis or rabies, so a veterinarian should be called to investigate the problem. The samples to collect to diagnose lead poisoning are whole blood if the animal is still alive, and liver or kidney samples from dead cattle.

What to do?

If lead poisoning is suspected, immediately remove all cattle from the pasture. Treatment begun before signs of disease are noticed may be helpful. There are treatments given by stomach tube to try to flush the lead out of the digestive tract (magnesium sulfate — Epsom salts), and there is an antidote for lead poisoning, but whether it can be used has to be determined on a case-by-case basis. The treatment of lead poisoning usually requires several treatments over several days of therapy.

Cattle with lead toxicity are not fit for human consumption. Cattle exposed to lead may recover from

the poisoning, but may not be able to be sold because lead deposited in bones is slowly released and can cause high levels in meat. In fact, up to a year or longer after a confirmed lead exposure, cattle should have a blood sample tested before they are sold into marketing channels because they may be carrying high levels of the dangerous mineral and every attempt must be made to keep lead out of the food chain.

This serious problem can be prevented by making sure your cattle cannot come into contact with old cars or farm equipment, batteries, construction materials, lead paint, or old burn piles. Many times old equipment or trash piles have been present in a pasture for many years with no problems, but then cattle can suddenly die of lead poisoning if something disturbs the trash, a fence is moved, or younger cattle are placed in the pasture. **AJ**

Editor's note: Robert L. Larson is a professor of production medicine and executive director of Veterinary Medicine Continuing Education at Kansas State University in Manhattan, Kan.