

VETERINARY CALL

by Bob Larson, Kansas State University

Listeriosis

A disease that can be prevented with proper management and producer awareness.

Listeriosis is a disease caused by a bacterial organism (*Listeria monocytogenes*) that is very common in soil and the intestine of cattle and other animals.

Even though this organism is common on plants and soil, it usually needs a low-oxygen environment to multiply to dangerous levels. Therefore, it occurs most commonly in animals fed improperly fermented silage or baleage.

The two most common problems *Listeria* causes in cattle are a nervous system problem (often called circling disease) and late-term abortions. *Listeria* from contaminated silage or other feed can invade through small cuts in a cow's mouth and travel up the nerves into the brain.

Affected cattle will often be uncoordinated and prefer to lean against objects, and some will circle in one direction. Many affected cattle will have paralysis of facial muscles so that the ear, eyelid or mouth on one side of the head will droop. As the paralysis progresses, the animal will fall and be unable to rise. Cattle that cannot rise will almost always proceed to death.

Although many, if not all, cattle fed *Listeria*-contaminated feed will become infected, very few will show signs of disease. Some individuals may have a poor immune response to

the organism and allow the bacteria to invade through the digestive tract into the bloodstream, which can then expose the reproductive tract. All pregnant animals are susceptible to *Listeria* and infection can result in abortions, stillbirths and the birth of weak calves. *Listeria* abortions in cattle are sporadic and usually occur in the last third of pregnancy.

Listeriosis is suspected when a herd has one or more animals with nervous system disease and is being fed a silage- or baleage-based diet. Examination of a spinal fluid sample can aid diagnosis, but a final determination of whether the herd's problem is listeriosis or another nervous system disease is done by laboratory examination of the brains of animals that die.

Testing blood samples for antibodies to *Listeria* is not helpful, because many healthy animals have been exposed to the organism and would test positive without the organism being the cause of the current problem.

Animals with listeriosis should be treated for several days with an appropriate antibiotic as directed by your veterinarian. If treated early enough in the disease process (before nervous system signs are severe), some animals will recover. If an animal is down and unable to

rise, treatment is not likely to be beneficial, and humane euthanasia is necessary.

During an outbreak of listeriosis, any affected animal should be quickly isolated and treated. Because no vaccine is available, prevention is dependent on the proper production of silage by paying attention to moisture and packing when filling the silo. The addition of silage inoculants may help reduce the risk of listeriosis by speeding the fermentation process. Hay bales that are used for baleage must be wrapped tightly to exclude oxygen.

Listeria is important not only because of its effect on cattle, but also because it can be passed to humans. For cattlemen and veterinarians, handling aborted fetuses or necropsying cattle that die due to *Listeria* present the greatest hazard. Pregnant women should be particularly careful to avoid contact with potentially affected cattle because of danger for *Listeria* to result in abortion or stillbirth. **A**

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