



What You Should Know About Anaplasmosis

Anaplasmosis is an infectious blood disease of cattle and deer. It does not affect humans.

Anaplasmosis is caused by one-celled parasitic microorganisms, called *Anaplasma marginale*, that are in the bloodstream. The parasites attack and destroy the red blood cells, causing anemia and sometimes death.

Symptoms of the disease are similar to some other cattle diseases such as cattle tickfever, anthrax, shipping fever and leptospirosis. Since anaplasmosis may occur in cattle already infected with another disease, tests are usually needed to determine if anaplasma parasites are present.

How Does It Affect Cattle?

Adult cattle affected with anaplasmosis will go off feed and lose weight. Dairy cattle will produce less milk. Symptoms may include anemia, a yellow appearance of the skin and mucus membranes, difficulty in breathing, dehydration and constipation. Affected animals may become very excitable. Death can occur 24 hours after symptoms are first noticed.

Anaplasmosis affects susceptible cattle differently depending on their age. It is least serious in young cattle. Losses of animals less than 1½ years old are rare because they can produce red blood cells rapidly to replace destroyed ones.

The young animals may be off feed, and slightly anemic, but they usually recover rapidly. Some bred heifers will abort.

Unless adequately treated, cattle of any age that recover from the disease usually become carriers for life and can spread the disease.

How Serious Is Anaplasmosis?

Anaplasmosis is one of the most costly diseases of beef cattle in this country. Some 50,000 to 100,000 cattle die of anaplasmosis each year. Death loss where the disease is introduced into a herd will

average 10% and may reach as high as 50%. Annual loss is estimated at \$100 million due to livestock deaths and decreases in beef and milk production.

Anaplasmosis has been a disease problem in the South Atlantic and Gulf Coast States, plus southern Arkansas and southeastern Oklahoma for many years. The disease has become common in the Northwest and California and is continuing to spread. In recent years there have been some severe losses in Minnesota, Wisconsin and Michigan.

The gradual spread of anaplasmosis can be attributed largely to changes in industry practices. Modern transportation has made it possible to ship cattle thousands of miles. Replacement cattle for beef herds in areas previously free of the disease have been shipped from infested areas.

How Is the Disease Spread?

Anaplasmosis is spread by insects and ticks or by man through careless use of instruments used in dehorning, bleeding or vaccinating. For an animal to become infected, the parasites must be introduced directly into the animal's bloodstream. It is not spread by contact or by the feces or urine of sick or carrier animals.

Insects and ticks transmit the disease in two different ways. Biting insects pass the disease by picking up small droplets of blood from infected animals and depositing them in the bloodstream of healthy animals. Certain ticks become carriers themselves and may transmit the disease to any cattle they feed on.

Spread by insects — Horseflies and mosquitoes are known to spread the disease. They are responsible for transmitting the disease from animal to animal in areas east of the Rocky Mountains. For transmission to occur the insect must feed on an infected animal, be disturbed and then bite a new animal within 5 minutes.

Spread by ticks — Two important ticks transmit anaplasmosis. One is the Rocky Mountain wood tick (*Dermacentor andersoni*) which spreads the disease in the Rocky Mountains. The other is the Pacific Coast tick (*Dermacentor occidentalis*) which spreads the disease in the California area.

Spread by man — Bleeding needles, dehorning instruments and nose leads can transmit the disease because they can carry red blood cells. Additionally, vaccine needles and tattooing instruments can spread the disease. When any of these instruments is used on carrier animals and then, without sterilizing, quickly used on uninfected animals, the disease may be easily spread.

Tests for Anaplasmosis

Presently two tests can be used for anaplasmosis — the complement fixation (CF) test and the rapid card test. Both use blood samples. The CF test is accurate, but is complicated and must be done in the laboratory. The rapid card test — which is done right at the farm or ranch where the blood samples are drawn — offers several advantages over the CF test. The results are available within 10 minutes after the blood sample is taken. Over 600 cows can be tested in 1 day.

Controlling Anaplasmosis

Currently, control is up to the individual herd owner. The type of control program selected should fit the management practices in a particular area.

Test and segregate — The herd must be tested and the infected animals separated from the uninfected ones. Each year the offspring from the infected herd and any other herd additions can be tested and the negative animals added to the clean herd. As the infected animals age, they can be culled and the end result is a single clean herd.

Separation of carrier animals from healthy animals works for the herd owner who has a small turnover and the facilities to divide the herd into two groups. If these herds are separated by a fence without waterholes or trees on the fenceline where cattle from each herd congregate, the disease does not spread from infected cattle to the clean animals.

Test and treat — Adding chlortetracycline to the feed of infected animals at 5 milligrams per pound of body weight per day for 50 days is effective in cleaning up carrier herds. Herd additions must be tested to protect the resulting all-negative herd. However, problems arise when animals don't receive enough of the drug and thus remain carriers to infect the rest of the herd again. Feeding too much of the antibiotic will not improve results.

NOTE: Cattle must not be slaughtered within 10 days of completion of treatment.

Vaccination — Vaccination will reduce severity and cut death losses, but it does not prevent the disease. Vaccination is important in areas where ticks and deer act as carriers of the disease or where there are large numbers of insects. Two injections of the killed vaccine are given initially 4 to 6 weeks apart. Another injection is given each year thereafter just before the insect and tick season.

Vaccinated cattle may be positive to both the CF test and the card test after the vaccination even though they may not be infected. In rare cases, newborn calves of vaccinated cows, especially Charolais and Charolais crosses, may develop an anemic syndrome which sometimes results in the death of the calf.

Feeding antibiotics — Feeding chlortetracycline at ½ milligram per pound of body weight per day during the insect and tick season helps prevent the disease and reduces the severity of new cases. The drug can be self-fed in a palatable, inexpensive mineral, salt or protein feed supplement.

In general, this method is effective, but problems arise when some animals don't eat enough of the antibiotic. Also, this method will not clean up carriers and must be repeated each year.

NOTE: Cattle must not be slaughtered within 10 days of completion of treatment.

Anaplasmosis-free herds — In an attempt to help control the disease, USDA and State Departments of Agriculture give recognition to herd owners who have freed their herds of anaplasmosis.

An anaplasmosis-free herd is one in which no anaplasmosis-infected or reactor animals have been detected in at least two consecutive herd tests. The second test must be between 6 and 18 months after the first negative herd test. All herd additions must either be natural increases, be from anaplasmosis-free herds or be tested and found disease-free before adding to the herd. Fencing and management practices must be adequate to ensure that there will be no intermingling with other cattle.

To maintain a free herd, the owner must retest at 1-year intervals with negative results.

For more information contact your State Veterinarian, Area Veterinary Services Office, or write:

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