

Veterinary Link: Anaplasmosis

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Anaplasmosis is a disease of cattle that has historically been a problem in the southern parts of the United States, but has now spread north. Cattlemen in many important beef-producing areas need to be aware of this disease.

Symptoms, transmission

Anaplasmosis is caused by a tiny parasitic organism called *Anaplasma marginale* that invades and multiplies in red blood cells. Once a red blood cell is infected, the animal's body will attempt

to destroy the cell. If enough red blood cells are destroyed, anemia can result, and blood samples taken from affected animals appear to be "watery."

Other signs of infection include yellow discoloration of the mucous membranes, fever, depression, dehydration, and rapid or difficult breathing. Sometimes affected animals become excited and aggressive when not enough oxygen reaches the brain.

The anaplasma organism can multiply in ticks. Therefore, ticks are considered to be the primary source of transmission of the parasite. While it appears that most strains of the anaplasma organism are able to multiply in and be transmitted by ticks, a few strains have been shown to not infect ticks. These strains have been reported in Florida, Mississippi, California and Illinois.

**Anaplasmosis control requires
a good working relationship
with your veterinarian to
determine your level of risk
and best control strategies.**

In all strains of the anaplasma organism, methods other than tick transmission can also cause the spread of the parasite. The movement of blood from infected cattle to susceptible cattle can be accomplished by biting flies, such as horseflies, or by human activities, such as via blood-contaminated needles, dehorning instruments, tattoo pliers or palpation sleeves.

Carrier cattle

Cattle of any age can become infected, but the severity of illness is usually mild in young cattle and increases with age. In cattle that become infected when they are 3 years of age or older, 30%-50% of animals showing signs of the disease die.

If infected cattle are able to survive they are not likely to have severe clinical signs of the disease in the future, but they remain carriers for life. In some cases these carrier infections can be eliminated using antibiotic treatment.

Cattle that are obviously sick due to anaplasmosis should be kept as quiet as possible and can be treated with a blood transfusion to replace lost red blood cells and tetracycline antibiotics to kill the organism.

For carrier cattle that don't appear sick but are infected with the anaplasma organism, a veterinarian can plan a treatment protocol using tetracycline antibiotics administered for several days to clear the organism. However, treatment with tetracycline is not

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effective for all cattle, and those animals that are cleared of the organism become susceptible to reinfection.

The best plan to minimize disease loss due to anaplasmosis depends greatly on the geographic location of the farm or ranch and the number of cattle in the area that are infected. In parts of the country

where anaplasmosis infection is rare, a strategy to find and treat and/or remove any carrier animals is recommended.

In contrast, in areas of the country where many cattle are infected, an attempt to remove all carriers from a herd will result in a herd that is susceptible to reinfection, and the herd may have greater

losses than if other strategies had been used to minimize the disease effects.

Disease strategies

If infected cattle are found in a herd in a part of the country where anaplasmosis is rare, one strategy to minimize disease loss is to test the herd for anaplasmosis

infection and to treat any test-positive animals with tetracycline as directed by your veterinarian. This treatment should be at a time of year when the local tick and fly population is the lowest.

Because the treatment does not clear infection from every animal, the animals should be tested six months after the tetracycline treatment. If a positive result is found at this time, the animal should be considered a treatment failure and removed from the herd by slaughter or by being sold to a herd in an area where anaplasmosis is common.

In contrast, in herds located where anaplasmosis is common, rather than trying to avoid infection, a producer may want to allow or encourage infection, but minimize clinical signs and death loss. In some countries young animals are purposefully exposed to the organism, allowing them to build immunity at a time in their life when the disease is mild. Although they will be infected for life, they are not likely to suffer severe illness.

In some states in the U.S., veterinarians may be able to obtain an experimental anaplasmosis vaccine that does not prevent infection, but is reported to reduce the risk of clinical signs and death. Producers may also elect to feed low levels of chlortetracycline when the disease is most prevalent to control active infection and to use insecticides to control tick and fly populations.

Control options

Because the best anaplasmosis control strategy for a particular farm or ranch depends on the risk of the herd coming into contact with the organism in the near future, an important component of a control strategy is a plan to deal with replacement animals. If your herd is free of anaplasmosis and the risk of exposure is low, any replacement animal should be tested before being brought into contact with the herd. A test-positive animal should either be culled or isolated and treated with tetracycline and then retested six months after treatment.

In contrast, if your herd is infected with anaplasmosis and the organism is common in your area, a test-positive replacement animal is desired, and the greatest health risk is in replacement animals that are not infected with the organism but that will be placed in direct contact with carrier animals. In this situation, one option is purposeful exposure (or vaccination if available) with close monitoring for clinical signs of the disease and quick treatment if disease is detected.

Anaplasmosis control requires a good working relationship with your veterinarian to determine your level of risk and best control strategies. The best control strategy for your herd may be very different from that of your neighbors or cattlemen in other parts of the country.