

## **Be on the lookout for anaplasmosis in cattle**

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*Submitted to Cattle Business Magazine, Sept. 2013*

For most of the southeastern US, this has not been an unusually hot or dry summer; however, the mild weather and moisture we have had these past couple of weeks have been great for the survival of biting flies and insects. It's during this time of the year when we need to be on the lookout for anaplasmosis, or "anaplaz" in our cattle.

Anaplasmosis is a vector borne disease, mainly spread to susceptible animals through biting insects. Certain weather conditions, such as heavy rains and flooding, can expose cattle to increased numbers of disease vectors such as ticks and deer flies. Ticks are the most important vector of anaplasmosis in the United States. Mild winters can also contribute to increased disease vectors and prevalence of infection among cattle. This explains why we see more cases during the summer and early fall, when vectors are most prevalent.

The disease occurs primarily in warm tropical and subtropical areas, and is not uncommon in southeastern US cattle populations. Of recent concern to livestock producers and veterinarians throughout the country is the fact that anaplasmosis infections are increasing in areas where the disease is not normally found, such as the midwestern and northeastern United States. This may be associated with increased livestock movements out of the Southeast, which are sure to increase as prices remain steady and drought-stricken states continue to restock.

Anaplasmosis is an infectious disease caused by the blood borne parasite *Anaplasma marginale*, which is spread by biting insects as they take their blood meals from infected animals and move on to feed on others. The parasite invades and multiplies in the animal's red blood cells, causing their destruction. As the red blood cells are destroyed, they release a pigment in the animal's body that may give the animal a yellow tinge around the eyes, udder, and inside the vulva known as jaundice. Since the red blood cells are responsible for carrying oxygen, their destruction causes the animal to have rapid or difficult breathing, dehydration, depression and lack of appetite. They may also act excited or aggressive due to the fact that the brain is not getting sufficient oxygen. Excess or unnecessary handling of these animals should be avoided when they are in this critical condition since excess exertion and stress in hot weather can kill them.

While any age of cattle may become infected with anaplasmosis, it is typically the adult animals that show the more serious clinical signs. Rapid onset and death is frequently seen in infected cattle over 3 years of age, and an estimated 30-50% of adult animals showing severe clinical signs of anaplasmosis will die from the disease. Calves under six months of age can become infected and remain carriers, but they seldom show evidence of clinical disease. Calves can become infected in utero if born to infected cows. While an animal that recovers from anaplasmosis is not likely to suffer serious disease symptoms due to anaplasmosis again, they can, however, become chronic carriers of the organism and serve as a source of infection to other animals.

Cattle showing severe clinical signs of anaplasmosis should be seen by your veterinarian as soon as possible. Your veterinarian will likely take a blood sample to confirm if an animal is infected with anaplasmosis. Examination of the blood in a syringe

or tube will show it to be very thin and watery due to anemia. Other diagnostic tests may also be indicated to confirm infection.

### ***Prevention and Treatment***

Given the fact that anaplasmosis is common in the southeastern US, it may not be feasible to completely avoid infection with the organism. In non-endemic areas, it may be possible to maintain a closed herd and test all cattle prior to purchase or entry into the herd. Outbreaks of this disease are usually associated with herds that have no preventative program, the presence of carrier animals, and the presence of external parasites.

Preventing outbreaks involves reducing exposure to contaminated blood through external parasite control and sanitation, the strategic use of tetracyclines, and clearing carrier animals of the organism. Strategic fly and tick control during the peak vector seasons such as summer to late August may also help prevent the spread of other vector-borne diseases such as pinkeye. In addition to insects, the organism can also be spread by instruments such as dehorners, ear notchers, tattoo pliers or needles when contaminated by infected blood. Good sanitation when using any of these items will also help prevent spread of anaplasmosis between animals if the disease is already present in your herd.

The anaplasmosis organism is susceptible to tetracyclines. For prevention of anaplasmosis, tetracycline may be delivered orally through a chlortetracycline (CTC) mineral mix, a medicated feed block, or a feed source. Oral dosing of tetracycline will also give the added advantage of helping with footrot control. If animals are treated only during the fly season, anaplasmosis may be prevented with an intake of 0.5 mg. / lb of body weight per day. If CTC is made available to the animals year round, then the daily dose needed to prevent clinical signs is half this amount.

In early cases of clinical disease, a single dose of a long-acting tetracycline product will often show marked improvement in the affected animal. However, once infected, the animal will remain a potential source of infection (carrier state) for the rest of the herd. As the disease progresses, tetracycline treatment becomes less effective since many of the animal red blood cells have already been destroyed. The most severely affected animals may require a blood transfusion if they are to survive the infection. It is also believed that the anaplasmosis organism can change into different antigenic variants over time, potentially affecting antibiotic susceptibility and animal immunity.

It has been demonstrated that carrier animals may be cleared by four treatments of long-acting tetracycline that are given at three day intervals. In endemic areas, year-round oral CTC treatment has also been reported to clear infection from carrier animals, however, making them susceptible to new infections. This emphasizes the need to give a complete treatment for the proper amount of time as recommended by your veterinarian. In herds with severe problems, long-acting tetracycline may have to be injected in all animals every 28 days. This would begin at the start of the fly season and continue until 30-60 days after the flies are gone.

Anaplasmosis is a common disease concern for cattle that are out on summer pasture and exposed to external parasites. During this time of the year, it is important that producers maintain their external parasite control programs into the fall months to prevent possible transmission of this deadly disease. If treatment is to be successful, it must begin in a timely fashion and be carried out long enough to prevent the establishment of the carrier state. There are multiple treatment and prevention strategies that you can discuss with your veterinarian in order to choose the best one for your operation.



It is important to keep up with fly control during the late summer and fall months to prevent the spread of diseases such as anaplasmosis and pinkeye.