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## Anaplasmosis in Cattle

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Anaplasmosis is a disease of cattle, sheep and goats resulting in anemia and sometimes death especially in adult cattle. This disease is seen worldwide and is a common disease in the southern United States. One of several microorganisms named *Anaplasma* causes this disease, which is spread from carrier cows to susceptible cows by insects such as ticks or horse flies, surgical instruments such as those, used for castration and dehorning or hypodermic needles. Affected cattle become very anemic and will lose weight, have labored breathing, develop constipation and become more aggressive. Treatment with tetracycline antibiotics is usually successful in early cases. The Tennessee State Veterinarians's Office reports an increase in the incidence in 2004.

Anaplasmosis is due to one of several microorganisms with *Anaplasma marginale* being the most common in cattle. The *Anaplasma* organism is found attached to red blood cells in the blood stream of affected animals. Carrier cattle have the organism in the blood stream and are capable of spreading the disease but do not show signs of anaplasmosis. Carrier cattle result when calves are infected before birth or during the first year of life. These animals plus older cattle that have recovered from the disease can remain carriers for years serving as a source of infection for the rest of the herd. These recovered adult cattle generally do not show signs of Anaplasmosis in the future.

The *Anaplasma* organism is spread when blood from is transferred from a carrier animal to a susceptible animal. Often, transmission occurs when insects such as *Dermacentor* ticks, horse flies, horn flies or others take blood on their mouthparts from an infected animal and then feed on another animal transferring blood. Face flies and other nonbiting insects do not spread this disease. Castration instruments, dehorning equipment, and hypodermic needles, which are not disinfected between animals, also can result in the spread of the disease. The *Anaplasma* organism multiples in the blood stream and attaches to red blood cells, causing the body to destroy the infected red blood cells. Eventually, red blood cells are destroyed faster than the body can make them and a low red blood cell count results in two to six weeks.

Clinical signs of Anaplasmosis vary with the age of the infected animal. Infected calves, less than one year of age, generally do not show signs of the disease or will show only mild signs. However, they often become carriers. Cattle, one to three years of age, do show clinical signs, which may be severe. Cattle, more than three years of age, show severe signs of disease and up to 50% may die if not treated.

Typical clinical signs include weight loss, rapid, labored breathing, weakness, constipation and increased aggression. Cattle may require two to three months to completely recover though the most severe stage of the disease lasts about four days. Other diseases may show clinical signs similar to Anaplasmosis. Diagnosis is based on clinical signs, microscopic examination of blood to identify the Anaplasma organism, and other blood tests to identify antibodies in carrier animals.

Affected animals need to be moved and handled carefully for treatment. These animals are easily stressed and can die of oxygen starvation when moved and restrained. The treatment of choice is a single injection of long-acting tetracycline antibiotic. A number of brand names are available from animal health product stores. This treatment may save the animals life and shorten the recovery period, but the recovered animals will likely remain carriers.

Prevention of Anaplasmosis is based on identifying carrier animals, eliminating the carrier state in these animals, reducing the spread of the disease to other animals and reducing the severity of clinical signs in newly infected animals. Carrier animals can be identified by blood tests of all animals best done during the winter when new carriers are less likely to occur. These animals can be culled or treated to eliminate the carrier state.

The carrier state can be eliminated with the use of long-acting Tetracycline antibiotics every three days for four treatments. The spread of the disease can be reduced by use of various methods of insect control and by sanitizing needles and instruments between individual animals. Reducing the frequency and severity of clinical signs requires monthly injections of tetracycline antibiotics or the feeding of tetracycline antibiotics during the fly season. Vaccines have been available in the past and a new one is being developed. However, it appears that there is currently no vaccine available to Tennessee producers.

Remember to consult your local veterinarian for help in disease diagnosis and treatment. All animal health products should be administered according to Tennessee Quality Assurance guidelines.