

TIMELY INFORMATION

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High Horse Fly Populations Related to Sporadic Outbreaks of Anaplasmosis in Cattle

Anaplasmosis is a blood disease in cattle caused by an organism that destroys red blood cells resulting in severe and profound anemia which often results in death of mature cattle. Anaplasmosis is transmitted from an infected or carrier animal by anything that can transmit blood from the infected animal to susceptible animals. Anaplasmosis is more easily transmitted from animals showing clinical signs of the disease to susceptible animals than from anaplasmosis carrier animals. The usual incubation period for anaplasmosis is 21 to 28 days. During the first 21 days the red blood cells of the cow are being infected and destroyed while the animal is able to make new red blood cells as fast as they are being destroyed. However, after a 3 or 4 week period the anaplasmosis organism multiplies faster than the cow can produce red blood cells. At this point the cow becomes profoundly anemic and often will die because she does not have enough red blood cells to carry oxygen to the body tissues. Clinical signs of the disease are not seen until about 50% of the red blood cells are destroyed. Early clinical signs are drooping ears, lost of weight, lying down separately from the herd, weakness and cattle may be found in a pond standing in the water too weak to get out of the pond. After 50% of the red blood cells are destroyed the organism multiplies rapidly and destroys another 40 to 60% of the remaining red blood cells often causing death of the cow. If the disease is caught early and treated at the beginning of clinical signs, cattle usually respond rather quickly and recover from the disease. Cows showing clinical signs of anaplasmosis will have very dark yellow urine. Additionally, when the eyelid is pulled back or other mucous membrane is exposed the tissue will be white or very pale when compared to the pink or reddish color found when the eyelid or other mucous membrane is exposed on disease free cattle. This is often referred to as jaundice.

Calves are able to generate red blood cells much faster than mature cattle and when infected with anaplasmosis rarely show clinical signs of an infection. They are able to build immunity and overcome the disease, however, they are usually carriers for life and the disease may be transmitted from them to other cattle.

Anaplasmosis is often undiagnosed or misdiagnosed by cattle producers that find their animals sick. Tetracycline and a number of other antibiotics are effective in treating anaplasmosis if treated early at the onset of clinical signs. More recently, an effective vaccine has been developed and is recommended in areas where the disease occurs. Usually in areas that have high populations of horse flies there are enough carrier cows to keep anaplasmosis going with sporadic outbreaks of this disease each summer. Outbreaks of the disease lag behind the beginning of large populations of horse flies by 4 to 6 weeks due to the incubation period of the disease.

Horse fly populations are highest in low-lying swampy areas near streams and other locations with standing water. Horse flies and deer flies make up a large group of flies (more than a hundred species commonly found in the southern U. S.) called tabanids. Male flies feed on nectar and do not bite or feed on blood. The female fly requires a blood meal in order to produce eggs. They have sharp razor like mouth parts (mandibles) that literally slice through the skin in getting to the blood of an animal. They inject an anticoagulant to prevent blood clotting and sponge up the blood. They feed until they are replete with blood (usually taking 3 to 5 minutes). If the fly is interrupted during the feeding process they find either another spot on the animal or another animal and feed until they are replete with blood. Anaplasmosis may be transmitted from an infected or carrier cow to a susceptible cow by bloody mouth parts if a female fly is interrupted during feeding.

While high populations of horse and deer flies cause extreme annoyance in cattle in addition to blood lost and disease transmission they are the most difficult pest on cattle to control. They may be killed with insecticides but are usually able to take a blood meal and die after their exposure to the insecticide. Since horse flies emerge with high populations from vast low-lying areas no treatment has been developed that is effective in reducing the overall population in an area where they are prevalent. Some insecticides (synthetic pyrethroids) are also repellent when the animals are sprayed. These insecticides may give total control for several days (3 to 5) and reduce horse fly landing rates for 10 to 14 days. However, for most cattle herds frequent penning and spraying for horse fly control is not seriously considered. Other methods for control of horse flies are either not effective, practical or economical feasible due to the biology and habits of horse flies. Their entire life cycle (except for the taking of a blood meal by the female) is not connected to cattle or other animals. They may fly as much as 20 miles for a blood meal and near that far to deposit eggs in a wet swampy area after the blood meal.

Vaccination may be the most effective way to control anaplasmosis in cattle. Death in cattle from anaplasmosis may be more common than most cattle producers realize because of misdiagnosis. Vaccinations are regularly used for a number of diseases in cattle that cause much less death loss than the death loss caused by anaplasmosis in areas where the disease commonly occurs.