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Anaplasmosis Of Cattle

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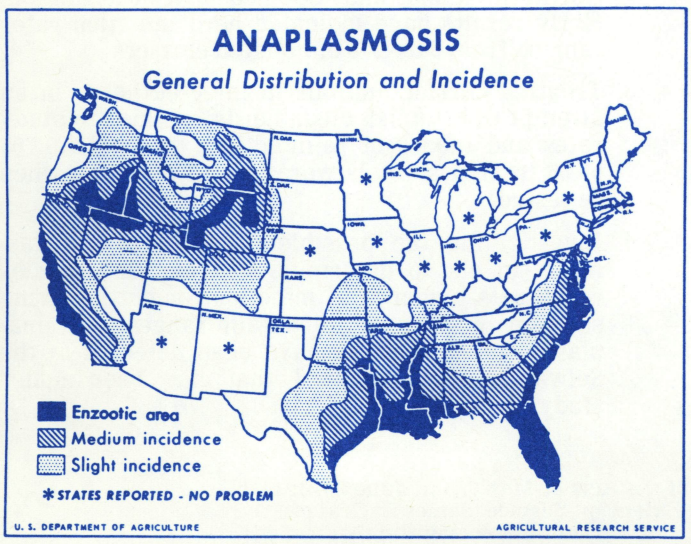
Anapalsmosis is an infectious disease of cattle caused by a microorganism, **Anaplasma marginale,** that infects red blood cells. The infection destroys the blood cells and causes severe anemia. The result may be abortions, severe loss of weight, poor gains and reproductive ability, loss of milk production and often death of the infected animals.

The American Cattlemen's Association ranks anaplasmosis as their second most important disease problem. The U.S. Animal Health Association estimates annual losses to American cattlemen are upward of $90 million. In 1968 Texas alone reported an animal loss of $10 million; Oregon and Idaho, $1 million each.

Prevalence

The disease is present to some extent in nearly all states of the United States. The most heavily infected are the southern and coastal states — where large biting flies are the important method of spread — and the western rangeland areas of Oregon, Idaho, Montana, Wyoming, Colorado, Utah and eastern California. Wood ticks are the important vector in spreading the disease in these states. The more northerly climates in the U.S. have a low incidence of infection.

In Idaho, the disease is found statewide but is most prevalent south of the Snake River.



Symptoms

Most frequently observed symptoms are fever, pale mucous membranes, loss of appetite, weakness and rapid breathing. The skin around the eyes and nose may become yellow as the animal recovers. This is why ranchers refer to anaplasmosis as "yellow bug" or "yellow skin" disease.

Age Susceptibility

Older cattle are most susceptible to anaplasmosis. Mature cattle of either sex frequently become severely ill when exposed.

Young cattle do become infected when they are exposed to the disease but they usually do not become sick or require treatment unless they are also subjected to other stress. The younger animals are able to produce large numbers of red blood cells to replace those destroyed by anaplasmosis infection. Effects of anaplasmosis infection can be severe in younger animals during stress periods such as weaning time, when they are moved into a feedlot or when they are on hot, dry ranges.

Carrier Animals and Disease Vectors

Once an animal is infected with anaplasmosis, it usually becomes a carrier harboring the disease agent in its blood stream for life. This animal then becomes a continuous source of infection in the herd.

Importing these infected carrier cattle into clean areas and clean herds is the most common method of spreading the disease from area to area or herd to herd. Once an infected animal has been introduced, the disease is spread within the herd by insect vectors, primarily the wood tick and biting flies, or by mechanical means such as castrating, ear tagging, dehorning and vaccination. Infection can be transmitted any time fresh blood is transferred from an infected to a non-infected animal.

In addition to carrier animals, there is another reservoir of anaplasmosis infection in the western range states — the wood tick. This insect is a biological vector, since the disease will overwinter in its body. For this reason, anaplasmosis will be more difficult

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to eradicate in the West than in states where only mechanical vectors — the direct blood transfers — spread the disease. Reducing the number of infected cattle by sale or treatment before the tick season begins each spring will reduce the opportunity for ticks to become infected.

Treatment

Cattle that are acutely ill with anaplasmosis are often treated with oxytetracycline,[1] but blood transfusions remain the most effective treatment. The chronically affected carrier animal can be treated effectively by the prolonged, high level feeding of chlortetracycline[2] with feed and water.

Immunity

Once an animal has become a carrier, whether it acquires the disease as a calf (without symptoms) or as an adult (showing symptoms of the disease), it is immune to subsequent exposures to the disease agent. Carrier animals that are treated and freed of infection may become susceptible again.

Prevention

In lightly infected areas, test the herd to find infected animals. Remove the infected animals by culling for slaughter or separate them from the herd and treat them with chlortetracycline feed supplement (5mg/1b body weight daily for 45 days), retest and return the treated clean animals to the herd. Test new additions to the herd to avoid reinfection. Avoid intermingling your cattle with other herds.

In heavily infected areas where there has been a heavy rate of infection for a period of several years, the procedure, at present, is to live with the disease.

Calves raised in the area will have a high rate of infection through natural vector bites, surgical tools or vaccination needles. Young cattle suffer only mild symptoms of the disease, develop a degree of immunity and then become carriers of the disease for life.

Avoid stress on cattle in heavily infected areas. Stress on long drives and exertion may cause anaplasmosis flare-ups in chronically ill animals.

Diagnosis

The disease is diagnosed by blood tests. The most widely used test is a Complement-Fixation test performed by state and federal diagnostic laboratories. The CF test is time consuming and complicated so a simplified method called the Card test has been developed for use as a rapid, on-the-ranch test by veterinarians. The Card test is a practical means of testing large numbers of animals on the ranch.

At the time the card test blood sample is collected the animal is back-tagged. Within 20 minutes of drawing the last blood sample the test results are available and infected animals can be identified and removed from the herd for treatment or slaughter.

[1] Terramycin — Chas. Pfizer & Co., Inc. New York, N.Y.

[2] Aueromycin, American Cyanamid Co., Princeton, New Jersey.

If new stock is brought into an infected area from a non-infected area, vaccinate the new animals and keep them isolated from the herd for 30 days. Vaccination does not prevent the animals from getting the disease but it does reduce the severity of infection. Vaccination is particularly recommended for bulls.

What's Ahead in Anaplasmosis Control?

Some states now have mandatory measures to control shipment of anaplasmosis cattle, but most do not. Canada and the states of Hawaii, New York and Wisconsin will not allow breeding stock to be imported without a negative anaplasmosis test. Other countries and "have not" states are designing similar regulations to restrict imports of infected breeding and feeder cattle. Some states have stipulated that imported cattle must have a negative blood test and also originate from an anaplasmosis-free herd and area.

Regulations prohibiting imports of anaplasmosis-infected or exposed cattle may soon become an economic factor to producers in Idaho and other western states. Limiting the market for feeder and breeding cattle would impose a hardship upon both the midwestern feeder in purchasing uninfected cattle and the western producer in obtaining top market value for his cattle.

National Recommendations

The Anaplasmosis Committee of the U.S. Animal Health Association has recommended standards for anaplasmosis-free herds. This committee has also proposed a resolution asking the Animal Health Division, ARS, USDA, to recognize anaplasmosis-free herds and to encourage recognition of such herds by the states and countries that import cattle.

Anaplasmosis Research at the University of Idaho

The Department of Veterinary Science is:

1. Evaluating the effectiveness of the rapid Card test for anaplasmosis. The results of the Card tests agree well with the C. F. test. It is likely that the Card test will soon be adopted as an official test for anaplasmosis.
2. Studying the prevalence of anaplasmosis in Northern Idaho and Southeastern Washington. Early results have indicated herd infection rates ranging from 0 to 49 % of infected carriers.
3. Treating carrier animals in infected herds in an attempt to establish clean herds in which to study rates and modes of re-infection. In one trial, 63 of 66 treated animals were free of infection when re-tested.
4. Investigating the possible presence of anaplasmosis in elk to determine whether this species represents a source of infection for cattle during summer grazing on mountain ranges. No anaplasmosis-infected elk have been detected in the Selway-Lochsa elk herd that has been under study.

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