



Cooperative Extension Service
Institute of Food and Agricultural Sciences

Control and Treatment of Anaplasmosis in Beef Cattle¹

E.J. Richey²

Control Programs for Anaplasmosis

A. Test the herd and separate carriers from non-carriers.

This program necessitates blood testing and identifying each animal in the beef herd as a carrier of the disease or as susceptible to the disease. It also requires that two separate herds be maintained during the vector season, or the disposal of one group (carrier animals or susceptible animals).

When the carrier incidence is high within a herd, it may be advantageous to maintain a 100% carrier herd. However, new additions to the herd must be protected from clinical anaplasmosis by vaccination or antibiotic medication until adequate immunity is achieved (see C or D below). In addition, there are federal regulations pertaining to the interstate movement of anaplasmosis carrier animals.

B. Test the herd and clear up the carriers with tetracycline antibiotics. (See CLEARING OF CARRIER STATE for methods available-VM 44.)

C. Anaplasmosis vaccine for a control program.

For an effective vaccination program, the herd owner should follow these recommendations: (1st) THE INITIAL VACCINATION (1st year) consists of 2 doses given 4 weeks apart, scheduled so that the second dose is given at least 2 weeks or more before the vector season

begins. (2nd) The following year, a booster should be administered two weeks or more before the next vector season. (3rd) After the first booster, additional boosters should be administered at least every other year to provide adequate protection. Identification of anaplasmosis carriers, by testing, could constitute an appreciable savings in heavily infected herds because vaccination of the carriers is unnecessary. A positive test reaction resulting from vaccination cannot be differentiated from the positive reaction caused by the natural infection.

Keep in mind that a vaccinated animal is still capable of becoming infected with *A. marginale*, and can subsequently become a carrier. The vaccine does not prevent infection, but aids in the prevention of clinical symptoms or in the reduction of the severity of clinical disease. Some researchers think that the protection achieved by vaccination is very isolate specific. That is, vaccinated animals may exhibit protection against *A. marginale* that occurs in Oklahoma and Kansas, but will not be protected against the disease that occurs in Florida. It would be advisable to discuss this point with a local veterinarian before using the anaplasmosis vaccine.

Calf losses from cows previously vaccinated against anaplasmosis have been noted. The dam can be sensitized by blood elements in the vaccine, if those elements are different than those she possesses. The antibodies formed against the foreign blood elements are concentrated in the colostrum of the cow and passed to the newborn calf during post-partum nursing. If the calf has inherited the foreign blood type (from the sire), the calf could die within

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2. E.J. Richey, extension veterinarian, College of Veterinarian Medicine, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 32611.

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1 to 5 days of age from the rapid destruction of its red blood cells by the ingested colostral antibody. This condition, in the calf, is known as NEONATAL ISOERYTHROLYSIS, NI, or the "yellow calf" syndrome. It can only occur by vaccinating the dam. When using anaplasmosis vaccine as a control method, it would be advisable to vaccinate the cows while they are open or as far from calving as possible. Vaccinating the herd sires WILL NOT cause the syndrome in calves.

D. Continuous oxytetracycline medication during the vector season.

An injection of oxytetracycline is administered every 28 days, beginning with the start of the vector season and ending 1 to 2 months after the vector season ends. The recommended dose is 3-5 mg/lb of (BW) body weight injected deep in the muscles of the rump. To insure adequate absorption of the medication, and to prevent excessive muscle inflammation, do not inject more than 10cc per injection site.

E. Continuous chlortetracycline (CTC) medication during the vector season. 0.5 mg CTC/lb Body weight/day.

For control of anaplasmosis, chlortetracycline may be administered by the following methods: (1) medicated feed (2) medicated salt/mineral mixes; (3) medicated feed blocks.

In addition to the above, chlortetracycline can be administered at the rate of 1.0 mg/lb BW every other day during the vector season. This is done by adding CTC to a milled ration or incorporating CTC into a range cube and then feeding the animals every other day.

F. Continuous chlortetracycline medication the year around.

Chlorestetracycline may be administered continuously throughout the year as medicated salt/mineral mixes with approximately 1500 grams CTC/ton (35-50% NaCl).

Oral daily doses of 0.1 to 0.25 mg/lb BW of chlorestetracycline administered continuously through the vector season can prevent clinical anaplasmosis, but will allow carrier infections to develop or prolong the incubation period, allowing clinical anaplasmosis to appear sometime after medication has been withdrawn. Therefore, it is advisable to administer CTC continuously year-around when using the drug at this low level.

It is essential that cattle receive an adequate uptake of the medicated mixes and blocks. This treatment requires placing the mix or blocks near water holes, providing sufficient protection from the sun and rain, and replenishing the mix at frequent intervals. Cattle often prefer natural salt licks over the medicated salt/mineral mixes; therefore, it is advisable to check routinely to insure that the cattle are consuming the medicated mix and adjust the palatability of the mix when necessary.

Bulls apparently do not consume adequate chlortetracycline and will require additional protection, such as vaccination.

Treatment for and Halting an Outbreak of Anaplasmosis.

Until an anaplasmosis problem develops, producers usually are not concerned with control. Therefore, it is necessary to describe the methods available to a producer for controlling an anaplasmosis outbreak.

A. Treatment of sick animals:

Usually by the time a cattle producer sees clinical anaplasmosis, the animal is almost over the acute infection and is suffering from anemia. Any excitement or exertion could cause the animal to collapse, resulting in death. A veterinarian should be notified immediately for the confirmation of anaplasmosis and subsequent treatment of the affected animal.

If treatment is initiated, it is recommended that a single treatment with LA-200 (200 mg/ml oxytetracycline) at the rate of 9 mg/lb BW be administered, rather than repeated treatments with a lower concentration of oxytetracycline. Blood transfusions may be indicated and should be administered by a veterinarian and on his advice.

The blood of an animal exhibiting clinical anaplasmosis is at least 20 times more infective than a healthy carrier's blood. The best thing to do is to move the healthy animals away from the sick ones (exertion could kill the clinically-ill animals), and provide adequate protection for the susceptible animals in the herd (newly-exposed animals are still in the herd).

B. Protection for the remainder of the herd:

In addition to treating the sick animals, one of the following methods should be followed to provide

protection for the remainder of the herd (halting an outbreak):

1. Use of injectable oxytetracycline.

At the first indication of anaplasmosis, gather all animals over six months-of-age and administer 3-5 mg oxytetracycline per pound of body weight. This treatment must be repeated at 28-day intervals throughout the vector season. After withdrawal of the medication, close observation should continue for symptoms of anaplasmosis that may have been only delayed, not stopped, in some cattle.

2. Use of vaccine and oxytetracycline together.

At the first indication of anaplasmosis, gather all animals over six months-of-age and (1st) give each animal the 1st dose of ANAPLAZ vaccine and 3-5 mg oxytetracycline per pound body weight, and (2nd) four weeks later, give the 2nd dose of ANAPLAZ vaccine and another dose of oxytetracycline.

3. Use of injectable oxytetracycline and oral chlortetracycline.

At the first indication of anaplasmosis, gather all animals over six months-of-age and (1st) administer a single dose of oxytetracycline at rate of 3-5 mg/lb BW and (2nd) immediately offer chlortetracycline free choice in a medicated salt/mineral mix or feed block, (0.5 mg/lb BW). Chlortetracycline-medicated mixes or blocks should be offered for at least 60 days. Regular checks should be made for adequate consumption of the medicated mixes or feed blocks.

Helpful Hints When Using Chlortetracycline in Salt/Mineral Mixes For Range Cattle

When chlortetracycline (CTC) is mixed in a free choice formula, it is important that no other source of that nutrient be available to the cattle. For example, when a salt mix is used as a vehicle for the CTC, no other source of salt should be available. When a calcium/phosphorous/mineral mix is used as a vehicle for the CTC, no other source of these minerals should be available. Under such circumstances, it is necessary that the medicated supplement provide the daily required supplemental amounts of the nutrients.

When formulations have been designed to provide only salt at the required nutritional level for range cattle,

all other required nutrients must be supplied from the pasture or other supplements.

To ENCOURAGE (increase) the consumption of the medication supplement:

- 1) Increase the level of palatable ingredients (CSM, SBM or dried molasses) as the level of the salt is decreased.
- 2) Feed the medicated supplement in feeders which also contain the Calcium/Phosphorous supplement.
- 3) Place the feeding stations through the pastures at the locations where the cattle normally gather (shade, water, etc.).

To DISCOURAGE (reduce) the consumption of the medicated supplement:

- 1) Increase the salt level at the expense of more palatable ingredients.
- 2) Reduce the number of feeding locations.

DIRECTIONS for feeding free choice medication supplements:

- 1) The range mix should provide the only source of supplement salt available.
- 2) Place the medicated supplement in several areas where cattle will congregate in the pasture (for shade, water, etc.).
- 3) Begin feeding the medicated supplements by putting out only a two (2) or three (3) day supply in the pasture. This will allow for an accurate measure of consumption, so that proper adjustments to achieve the desired medication intake can be made. Adjustments to either encourage or discourage the consumption of the medicated supplement can be made by changing the formulation of the supplement, or by changing management practices.
- 4) When the correct consumption rate has been achieved, place a one (1) week supply of the medicated supplement into the feeders. To assure the potency of the medication, it would be advisable to place no more than one (1) week's supply of the supplement in the feeders.

When using chlortetracycline (CTC) as an aid in the control of anaplasmosis, feeding supplements containing CTC should begin before and continue through, the vector season.