

BOVINE ANAPLASMOSIS



American Dog Tick (*Dermacentor variabilis*).
LSU AgCenter Photo

INTRODUCTION

Bovine anaplasmosis is an infectious, noncontagious disease of cattle that is caused by the organism *Anaplasma marginale*. *Anaplasma marginale* is endemic across the world, and it is most prevalent in tropical and subtropical environments. Due to the environmental conditions in Louisiana, this disease is found all around the state and causes significant production losses. The *Anaplasma* organism works by destroying the red blood cells of infected cattle, which leads to anemia and other clinical signs of disease. All ages of cattle are susceptible to anaplasmosis, but mature animals are most likely to show symptoms.

TRANSMISSION

Biological

- Ticks: American dog tick (*Dermacentor variabilis*), Rocky Mountain wood tick (*Dermacentor andersoni*)

Mechanical

- Flies: Stable flies, horse flies, deer flies
- Blood containing fomites: Used needles, dehorning equipment, castration equipment, tattoo pliers, implant gun, etc.

Transplacental

- Contaminated blood crosses over the placenta in the uterus of the cow to the calf.



American Dog Tick (*Dermacentor variabilis*).
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CLINICAL SIGNS

- Fever
- Weakness
- Pale mucous membranes (mouth, nose, eyes)
- Anemia
- Anorexia
- Jaundice
- Abortion
- Respiratory distress
- Sudden death

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DIAGNOSTIC TOOLS

Enzyme-linked Immunosorbent Assay (ELISA)

- Detects the presence of antibodies to *Anaplasma marginale* that develop after infection in bovine serum samples.
- Works well four to six weeks after exposure to *Anaplasma marginale* due to the time required for the animal to mount an immune response and produce antibodies.

Blood Smears

- Can use a stained microscope slide to look for *Anaplasma marginale* organism on red blood cells.
- May miss animals with low *Anaplasma marginale* levels.

Polymerase Chain Reaction (PCR)

- Detects DNA of *Anaplasma marginale* in bovine blood samples.
- Tests for current infections and is highly accurate.

TREATMENT OPTIONS

- Oxytetracycline
- Enrofloxacin (Baytril 100-CA1, conditionally approved)

PREVENTION/CONTROL OPTIONS

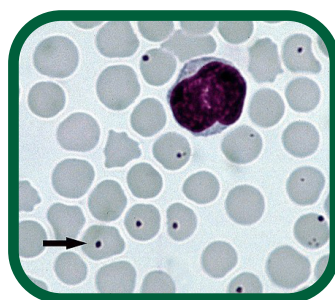
- Tetracycline products in feed or mineral (requires veterinary feed directive)
- Vaccination
 - University Products LLC (conditionally approved)
 - Vaccine does not prevent infection but may reduce clinical signs.

PRODUCTION IMPLICATIONS

- Loss of body weight
- Reduction in calf crop due to abortions
- Increase in cull rates
- Mortality in clinically infected cattle

WHAT CAN YOU DO TO MINIMIZE SPREAD?

- Change needles after every animal.
- Clean and disinfect equipment between animals.
- Use external parasite control.
- Test new additions to the herd.



Anaplasma marginale on
blood smear

CONCLUSIONS

Bovine anaplasmosis is an ongoing issue in cattle populations in Louisiana. Cattle producers should talk to their veterinarians about testing and developing control strategies, including introducing new animals that may be naive to anaplasmosis.

BOVINE

ANAPLASMOSIS

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