

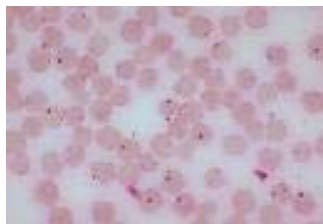
Anaplasmosis in Oregon Cattle Herds

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What is it?

Anaplasmosis is an infectious disease of cattle (sometimes goats and sheep) caused by a small blood parasite called *Anaplasma marginale*. Infection with the blood parasite results in destruction of the oxygen-carrying red blood cells. Although the disease is classified as infections, it is not contagious. This means that the disease is caused by a microbial organism but is not directly transmitted from an infected animal to a non-infected animal. In order for infection to occur, there must be a transfer of blood from the infected animal to the susceptible animal.



Anaplasma-infected blood

What are the signs of Anaplasmosis?

Once an animal becomes infected with *Anaplasma* there are four stages in the disease progression, each with its own set of clinical signs.

- **Incubation stage** – this stage typically lasts 3-8 weeks while the blood parasite attacks increasingly more red blood cells with each passing day. Young animals (<1 year old) often show no signs or only mild signs because their bone marrow makes new red blood cells nearly as fast as they are destroyed. During the incubation phase the animal usually does not show any signs.
- **Developmental stage** – as the animal's own body destroys infected red blood cells the animal becomes anemic. The signs of anemia may first be noticed as paleness or yellowing of the muzzle, vulva, and membranes around the eyes. The affected animal may be listless and lag behind the rest of the herd and refuse to eat or drink. As the anemia becomes more severe the animal may become

belligerent (crazy) due to lack of oxygen delivery to the brain. These animals can be dangerous to handle and even the stress of putting them in a chute can result in death. Other signs commonly seen include fever, reduction on milk production (hungry calves), loss of condition, severe weakness (can't get up), difficulty breathing, abortion, and constipation. This stage generally last about a week after which the animal slowly recovers or may die. Cattle older than 3 years are much more likely to die than are younger cattle.

- **Convalescent stage** – Cattle that survive the developmental phase begin a slow recovery over a 2-3 month period. During this stage the animal's immune system holds multiplication of the parasite at bay and the red blood cell count returns to normal or near normal. If left untreated, recovered animals will become chronic carriers and be a source if infection for susceptible animals. Recovered animals will be immune to *Anaplasma* but immunity may only last about 30 months and then re-infection may occur.

How does infection occur?

In order for a susceptible animal to become infected there must be a transfer of red cells in blood. In many cases, ticks (Pacific Coast tick in Oregon) are the culprits involved in transmission. The *Anaplasma* organism can survive in ticks through their developmental stages and molts. Insects such as biting flies (horse flies, stable flies) and mosquitoes can also transmit the disease but there can only be a very short period (< 5 min.) of time between when the insect bites an infected animal and a susceptible animal. This type of transmission is most likely when cattle are crowded together such as when they gather under shade trees to escape summer heat.



Pacific Coast tick

Unfortunately, on many farms and ranches humans are a major factor in transmitting Anaplasmosis from animal to animal. The use of blood-contaminated needles, castrating knives, tattoo instruments, and dehorning instruments may mechanically transfer infectious organisms from one animal to another.

Can infected animals be treated?

If found in the **early stages** of disease your veterinarian may be able to successfully treat infected animals. Because several diseases may resemble Anaplasmosis it is imperative that you consult your veterinarian to establish a definite diagnosis through blood testing.

Drugs in the tetracycline class are most effective in clearing an animal of infection. In extreme cases, blood transfusion may be warranted.

How can Anaplasmosis be prevented or controlled?

- **Control the insects** that transmit the disease. While all insects cannot be eliminated from the cattle's environment, selective pesticide use during the peak season may be advantageous. Elimination of stagnant water where mosquitoes multiply will help as will reduced stocking density and discouraging cattle from congregating.
- **Practice strict sanitation** when performing routine procedures such as vaccinating, castrating and dehorning. Using a new needle on each animal for every injection is a must. Disinfection of surgical instruments and tattoo instruments will help reduce transmission.
- **Treat carrier animals** as directed by your veterinarian. Separate infected animals from non-infected animals.
- If infection is very prevalent and losses are historically high, consult your veterinarian about feeding antibiotics during the insect and tick season.

Can I protect my herd through vaccination?

Maybe! There is a non-licensed vaccine that can be given to cattle in Oregon. It is called Plazvax and is made and marketed by a group in Louisiana (UNIVERSITY PRODUCTS, L.L.C., DR. D. GENE LUTHER, 425 Woodstone Drive, Baton Rouge, LA 70808, 1-800-308-5242, 225-769-4146, docndoc@aol.com). Permission to use the vaccine in Oregon may be granted by the state veterinarian. In some instances the vaccine works well and in others it fails to protect susceptible animals. Success of the vaccine depends on which strain of *Anaplasma* is infecting your animals. The vaccine is made using a Mississippi strain of *Anaplasma* organisms. I have used the vaccine in cattle in Mississippi and did not see a significant benefit from its use.

Overall, Anaplasmosis is relatively uncommon in Oregon so many producers may be caught off guard because they are not familiar with the typical signs associated with infection in cattle. If you suspect you may have one or more animals infected with Anaplasmosis or have questions regarding diagnosis or treatment consult your veterinarian.