

Mycoplasma

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(Adapted from Wohler, 2000, Rosenbusch, 1998, Thomas, & Hale, 1962)

What is it?

Mycoplasmosis is a disease in cattle primarily caused by the *Mycoplasma bovis* organism that infects the respiratory tract, initially causing pneumonia and eventually migrating to the blood infecting the joints and tendons causing lameness.

What causes a Mycoplasma infection?

Mycoplasma organisms are almost always present in cattle, certain conditions bring out the disease. Highly stressed situations, such as confined cattle, transport, salebarns, improper vaccination programs, bad water, and improper nutrition bring out the disease. The disease is typically secondary to a primary infection such as BVD, *Pasteurella (Mannheimia) haemolytica*, or others.

What are symptoms of cattle with the Mycoplasma, different than other respiratory infections?

- Harsh, hacking cough
- Elevated body temperatures, but will not get over 105 oF
- Up to 10% of the cattle infected with *Mycoplasma* may become lame, but not all
- Ear infections, characterized by drooped ears and cheesy wax in the ear may occur
- Pinkeye-like infection can occur
- Muzzle does not become dry and cracked
- Cattle stay bright and alert longer
- Drippy nose with clear or nearly-clear thin mucous similar to normal drainage
- Lack of response to antibiotic treatment

What do I use to treat Mycoplasma?

Early treatment is essential

Minimal success with antibiotic treatment, but some success has been found with lincomycin, spectinomycin, tetracycline (Ex. LA-200®), tylosin (Ex. Tylan®), tilmicosin (Ex. Micotil®) and florfenicol (Ex. Nuflor®). Draxxin® is now approved for treatment of *Mycoplasma bovis*.

Does mass antibiotic treatment help?

Mass treatment has shown little success and may give the *Mycoplasma* organism a competitive advantage by killing other microorganisms that cause pneumonia (Baynard and Dopta, 2002).

Is a vaccine available?

Yes, but mixed results and typically has shown little success.

How is the disease spread?

- Confined animals with nose to nose contact
- Via milk
- Contact with contaminated feedbunks, waterers, etc.
- Air
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How long does the organism survive in the environment?

It likes moist and warm conditions

- 37 days in manure
- 2 days on wood or steel
- 7 days on rubber or glass

Why is Mycoplasma difficult to treat?

The Mycoplasma organism is “bacteria like”, but lacks a true cell wall. Many antibiotics work by attacking the cell wall, if the organisms do not have a cell wall the antibiotic will not work. Antibiotics listed previously do not act on the cell wall, so they have a better chance of destroying the organism.

The immune system of the animal has a difficult time destroying the mycoplasma organism, because the animal host immune system attaches to the structures on the cell surface to destroy it. If the organism does not have a true cell wall, the structures on the cell are constantly changing, thus the immune system is unable to attach to the cell surface and destroy the cell.