



Veterinary Link

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***M. bovis* — a different kind of bacteria**

Mycoplasma organisms are a group of bacteria that are different from most other types of bacteria. These differences make many antibiotics ineffective against them and increase the difficulty in producing effective vaccines.

Infection with *Mycoplasma bovis* (*M. bovis*) is associated with a number of problems in beef cattle. It can be associated with pneumonia, joint infections, infection of the tendon sheaths, eye infections and middle ear infections.

Pneumonia and arthritis. Although it is possible for *M. bovis* to cause pneumonia in cattle by itself, it almost always follows typical pneumonia caused by a chain reaction of stress, viral infection and bacterial infection. Most cases are in cattle that have been chronically sick.

In many cases affected cattle have both arthritis and pneumonia. These cases are likely to have a very poor outcome. Many of the antibiotics used to treat pneumonia in cattle will not kill Mycoplasma, and since the organism tends to appear in chronically affected

animals, even if antibiotics killed the organism, it is not likely that the animal would be highly productive.

M. bovis and other Mycoplasma can be cultured from most cattle, but very few have the disease; therefore, it is important to realize that infection does not equal disease. This is important to remember when you culture *M. bovis* from a sick or dead animal — other evidence must also point toward Mycoplasma before it can be incriminated as contributing to the death.

Eye, ear infections. In cow-calf operations, Mycoplasma is most often associated with eye and ear infections in calves and arthritis in calves or adults. In the feedlot, pneumonia and arthritis are the most common problems. Eye infections caused by *M. bovis* and other Mycoplasma species look similar to typical pinkeye caused by the bacteria *Moraxella bovis* and can range from mild to severe. When one of the Mycoplasma species is involved in an eye infection, treatment response is often poor compared to typical pinkeye.

Another syndrome that has been associated with Mycoplasma is ear

infection. *M. bovis* has been isolated from fluid from the ears of calves with ear infections that showed droopy ears and a head tilt. In some cases, a high percentage of calves in a group are affected, and response to treatment is slow and sometimes poor.

Joint infections. Joint infections, or arthritis in one to multiple joints, is also associated with Mycoplasma. Affected cattle may show stiffness, lameness, difficulty in getting up, or refusal to bear weight on one or more legs. The affected joints are usually hot, painful and swollen, and the cattle may have a fever and be off feed and losing weight — especially when multiple joints are involved. Treatment in cases of joint infection is often unsuccessful. In the case of joint infection, it is likely that the infection started in the lungs, moved to the bloodstream and settled out in the joints.

Bacteria spread

Mycoplasma organisms are most likely to spread through a group of cattle when they are crowded together, such as in a truck or small pen like

those encountered during marketing. Remember that many antibiotics will not kill Mycoplasma, and treatment is often unsuccessful. A number of researchers link bovine viral diarrhea (BVD) infection and *M. bovis* infections. They observe that BVD virus can be isolated from many (but not all) cattle with disease associated with *M. bovis*. BVD suppresses the immune system and may allow *M. bovis* to invade the lung or spread in the bloodstream — situations that are less likely to occur in animals with a normal immune system.

***M. bovis* control**

Because *M. bovis* frequently appears to follow infection with BVD or other viruses, controlling it starts with an aggressive vaccination program with modified-live virus (MLV) vaccines containing at least BVD and infectious bovine rhinotracheitis (IBR) protection.

Control also focuses on the purchase of low-risk cattle, isolation of sick cattle from the rest of the herd or group, good animal care, and rapid treatment of pneumonia with appropriate antibiotics. A few commercial Mycoplasma vaccines are available, and some companies produce autogenous vaccines. Although some companies will provide testimonials as to the benefit of vaccination, controlled trials have shown either no beneficial effect or a detrimental effect of vaccination.

