

Mycoplasma bovis: The Facts

The mycoplasmas are a type of bacteria that, unlike other bacteria, do not have a cell wall. *Mycoplasma bovis*, affects cattle but does not impose a human health risk.



HOW DOES MYCOPLASMA BOVIS SPREAD?

M. bovis is very effective at evading the immune system, resulting in some animals becoming carriers without showing any clinical signs for months or years. Intermittent shedding of *M. bovis* by these carrier animals is associated with stress eg. transportation, co-mingling and entry into the herd after calving.

Introducing an asymptomatic carrier animal is considered the primary route of herd infection. Delayed transmission can make it difficult to identify the source of infection and outbreaks can occur in apparently 'closed herds'. In an infected herd, *M. bovis* is transmitted at milking from udder-to-udder. Transmission via aerosols, nasal secretions, nose-to-nose contact or indirectly via feed, water and housing can also occur.

Infected milk is a major route of infection for calves. Aerosol transmission is also likely as once disease is established it is very difficult to eradicate. Calves exposed to *M. bovis* - infected milk may become asymptomatic carriers, thus continuing the cycle of infection when they calve into the herd as heifers.

SIGNS OF M. BOVIS INFECTION

There are multiple manifestations of *M. bovis*. These may feature as the sole presenting sign or occur in combination with each other.

Mastitis - Many infections are subclinical: infected cows may have apparently normal milk, an 'average' somatic cell count and milk yield. Cows of any age or stage of lactation can become infected. Clinical mastitis is non-specific but typically involves multiple quarters and a drastic reduction in milk production. Affected quarters may be swollen, usually non-painful and the changes to milk range from mildly abnormal to gritty or thick discharge and may be brownish in colour. A classic feature is a history of recurring mastitis due to resistance to treatment with antibiotics.

Pneumonia - *M. bovis* pneumonia can occur in both dairy and beef cattle at any age. Signs include fever, difficulty in breathing, coughing, nasal discharge, loss of appetite and poor weight gain. Pneumonia due to *Mycoplasma bovis* infection is often poorly responsive to treatment.

Otitis media - Infection spreads to the middle ear, often in calves. In early cases, calves remain alert but as the disease progresses they develop a fever and loss of appetite, drooping of the affected ear and signs of ear pain (eg. head shaking, scratching/ rubbing of one or both ears). A tilt of the head may be present with severely affected animals circling/drifted to the affected side.

Septic arthritis and swollen joints (joint-ill) - In calves, this may occur sporadically or in outbreaks, with sudden onset non-weight bearing lameness, joint swelling and pain. Multiple joints are frequently affected and calves often have a fever and loss of appetite. Lameness with joint swelling may also be seen in infected adult cattle. Poor response to treatment is a common feature of arthritis caused by *Mycoplasma bovis* infection.

Diagnosis is challenging due to the asymptomatic signs and intermittent shedding of *M. bovis*. A bulk milk PCR test can be performed as part of routine biosecurity measures. Early identification of the disease is critical if any form of control is to be achieved.

Speak with our vets to discuss screening tests if you are concerned about recurring cases of mastitis, respiratory disease, joint ill or otitis media.

Reference: Maunsell, F. P. and G. A. Donovan. 2009. *Mycoplasma bovis* Infections in Young Calves. *Veterinary Clinics of North America: Food Animal Practice* 25(1):139-177. Maunsell, F. P., A. R. Woolums, D. Francoz, R. F. Rosenbusch, D. L. Step, D. J. Wilson, and E. D. Janzen. 2011. *Mycoplasma bovis* Infections in Cattle. *Journal of Veterinary Internal Medicine* 25(4):772-783. Nicholas, R. A. J. and R. D. Ayling. 2003. *Mycoplasma bovis: disease, diagnosis, and control. Research in Veterinary Science* 74(2):105-112.