

## Mycoplasma bovis – FAQ

### What is Mycoplasma bovis?

M bovis is a bacterium that lives in cattle. Until recently, we have not had M bovis in NZ although other mycoplasma species are recorded in cattle and other farmed animals.

Mycoplasma bovis is a fragile bacterium, which does not withstand heat, UV rays or drying and is killed by most disinfectants. However, because it does not have a cell wall, it is resistant to a lot of commonly used antibiotics.

### What symptoms does Mycoplasma bovis cause in cattle?

Infection with M bovis in cattle can be without symptoms or cause a range of diseases including:

- In Dairy and Beef Cattle
  - Untreatable mastitis – often in multiple quarters
  - Abortion
  - Swollen joints & lameness
- In Calves
  - Severe pneumonia, starting as a hacking cough
  - Ear infections; typically seen first as one droopy ear, progressing to ear discharges and in some cases head tilt.
  - Conjunctivitis

Because mycoplasma does not respond to commonly used antibiotics, treatment is commonly noted to be ineffective.

### How did Mycoplasma bovis get into NZ?

Potential pathways include through the importation of live cattle or other livestock, the importation of biologicals such as semen and embryos, veterinary medicines, feeds and used farm equipment. MPI is investigating these avenues and will be in a position to comment once investigations are complete.

### How could Mycoplasma bovis be introduced to my farm?

In NZ currently, **the highest risk** of introducing M bovis to your herd is by:

- Introducing animals from outside your own herd (see “How can I keep M bovis off my farm?”)
- Bringing in milk from other farms for feeding calves
- Bringing in used animal management equipment from other farms that has not been thoroughly disinfected. E.g. milking, A.I., calf feeding equipment etc.

**Lower risk** areas of introducing M bovis to your herd include:

- Clothing used on other properties which has been in contact with animals
- Vehicles which have driven on other farms’ paddocks and laneways
- Vehicles which have been used for the transportation of stock

### How is *Mycoplasma bovis* spread?

Once *M bovis* is on a farm, the ways it spreads depend on the class of animal infected. It can spread through bodily fluids including blood, milk, mucous and vaginal secretions and by the following methods in order of importance:

- Ingestion of contaminated unpasteurised milk by calves. This is the most likely way that infection will spread naturally on farm.
- Contact between infected and non-infected animals. Contact that is close, repeated or occurs in confined spaces increases the risk of “nose-to-nose” transmission.
- Transmission during milking on the cups.
- Transmission on clothing worn or equipment used on infected animals.

It is not thought to be transmitted in urine or faeces. It is not windborne or spread in waterways. It is a relatively slow-moving disease.

### How can I keep *Mycoplasma bovis* off my farm?

Recommended biosecurity protection measures include:

High priority measures:

- Limit cattle movements onto your farm. Movements to be managed include;
  - Leasing/borrowing milking cows
  - Bulls for mating the herd and heifers
  - Bought-in beef calves to rear on farm
  - Grazing heifers or sending calves off farm for rearing
- Do not feed unpasteurised milk from other farms to your calves – use powdered milk if required
- Do not import any used animal equipment onto your farm unless it has been thoroughly cleaned and disinfected **prior** to arriving on farm
- Avoid “nose-to-nose” contact between your animals and your neighbour’s animals. Use electric fencing or arrange rotation with neighbours to suit.

Medium priority measures

- Ensure visitors/contractors/professionals coming into direct contact with your stock have clean attire and equipment
- Have footbaths with disinfectant and scrubbing brushes available for visitors to disinfect on and off your property
- Keep tanker tracks as animal free zones
- Leave visitor vehicles on the tanker track and transport visitors around the farm in your own vehicle

### Is *Mycoplasma bovis* a risk to human health?

No. Meat and dairy products from infected animals can be consumed safely as usual. Pasteurisation of milk products, while not necessary to control *M bovis*, is recommended to prevent risks associated with other bacteria of concern to human health including TB.

### Which disinfectants kill *Mycoplasma bovis*?

Most disinfectants used properly will be effective in killing *M bovis*. Proper use of disinfectants includes:

1. Cleaning:
  - a. Disinfectants don't work where there is dirt.
  - b. Physically remove visible dirt and organic matter from equipment and vehicles that have been in contact with animals by scrubbing and hosing.
  - c. Do this in an area where debris can be washed into an appropriate location away from animal contact. The tanker track is usually appropriate.
2. Disinfection:
  - a. Spray disinfectant prepared as per label over clean surfaces, wet weather gear or equipment.
  - b. Leave in contact for 10 mins.
  - c. Recommended disinfectants include; 1% Virkon S (50g sachet/5 litres water); Vetpak Antiseptic and Disinfectant 50mls/10L water; 0.2% citric acid (1tsp/litre of water); alkaline wash detergents.

### Can I test my herd or animals I introduce for *M. bovis*?

Yes, tests are available. MPI has a full suite of tests that are used to test farms under investigation. Used correctly these give reliable results but take some time to complete. For various reasons, these are not all available to the public through commercial testing.

Commercial PCR tests are available through your local vet. These are reasonably accurate in animals showing symptoms to diagnose mycoplasma disease. If you are concerned about disease in your herd being due to *Mycoplasma bovis* then contact your vet to arrange appropriate testing.

For screening healthy animals however, the available tests are more problematic. They are not sensitive enough to detect every infected animal. If a cow is positive she is infected; if a cow is negative she is not necessarily free of *M bovis*. All screening testing should be discussed in depth with your vet.

### Can *Mycoplasma bovis* be cured?

No. *M bovis* infections can be managed with antibiotics and expression of clinical symptoms sometimes controlled, but culling is required to remove *M bovis* from a herd.

### Why not just live with *Mycoplasma bovis*?

The decision to eradicate *M bovis* has been made because the cost to eradicate it now is about ½ the cost of living with the disease over a 10year period with ongoing costs beyond this timeframe. In the short term, spread of the disease in a naïve population would see high levels of incurable mastitis, pneumonia, lameness and reproductive failure. Longer term, culling rates will increase to manage the disease, herd improvement will slow markedly as selection ability is reduced and the cost of replacements will increase as higher replacement rates are required.

## M bovis - To test or not?

With all the attention directed at M bovis currently, you may be wondering whether to jump in and get your animals “tested-free” of M bovis now rather than waiting for MPI to get around to your farm. If so, you need to be aware of the following.

Tests available currently for commercial testing (Real time PCR tests) are different from the MPI screening test (ELISA) and have:

- High specificity; uninfected cows are not likely to test positive
- Low sensitivity; some infected cows will be missed and test negative

The tests perform best when animals are clinically affected with M bovis. When animals are not infected or not clinically affected with M bovis, such as is the situation when we want to screen animals, the tests are much less sensitive and will miss more animals infected with M bovis. The implication: “A positive result means M bovis infection. A negative result does not mean M bovis free.” Consequently, testing for M bovis with the commercial tests available to us presently will not enable mobs of cattle to be declared disease free.

Testing large numbers of animals (130 or the whole mob) or repeatedly testing the same animals will improve the tests, but any given animal with a negative result may still be infected. Consequently, the tests are not useful to declare individual animals free of M bovis.

It is highly likely that another round of dairy herd testing will be conducted by MPI in conjunction with processors in the early spring of 2018 with a test that has better accuracy as a screening test than what is currently available. When compared with the tests completed at the end of last season, this will be the most reliable indicator of a farm’s M bovis infection status. Dairy clients are encouraged to reduce stock movements and defer any specific testing until following the spring MPI test unless animals present with clinical symptoms attributable to M bovis in the meantime.

Beef and drystock farms will obviously fall outside of this umbrella. If you have concerns about the M bovis status of your herd, we strongly encourage farmers to contact us to discuss testing options based on your risk profile.

New Zealand validation of better screening tests is progressing rapidly, and we expect newly validated tests to be available later in the spring. This will increase our options and further advice will be provided as it becomes relevant.