**Mycoplasma bovis 2017 South Island Response**

**Frequently Asked Questions**

**What is *Mycoplasma bovis***?

*Mycoplasma bovis* is a bacterium that causes disease in cattle. It has never before been found in New Zealand. The disease has productivity and animal welfare implications as it can cause untreatable mastitis, abortions, pneumonia and arthritis, and can result in significant losses to cattle and dairy producers. The disease does not infect people and it does not present any food safety concerns. *Mycoplasma bovis* is widespread internationally and other dairy and meat producing countries successfully manage it and trade in animal products. Its detection in New Zealand does not present any trade concerns.

**What animals does it affect?**

*Mycoplasma bovis* primarily affects cattle. Other animals are generally not infected by the disease. As above, it does not cause disease in humans, and is not a food-safety risk.

In pigs, there are very rare occasional reports of *Mycoplasma bovis* associated with (and possibly causing) severe conjunctivitis, nasal discharge and coughing when animals are kept with infected cattle.

There is a single report that *Mycoplasma bovis* was the cause of pneumonia in farmed white-tailed deer fawns in the USA.

There is a single report of *Mycoplasma bovis* being isolated from a woman with pneumonia, however the woman had also possibly been exposed to other pathogens, and the primary cause of the disease was not established.

North American bison develop disease similar to that in cattle.

**Where is it in New Zealand?**

On 22 July 2017 *Mycoplasma bovis* was initially identified in a South Canterbury farm, in the Oamaru area.

On 31 July *Mycoplasma bovis* was confirmed on a second farm in the same area. The farms are both part of the 16 farm Van Leeuwen Dairy Group (VLDG). All 16 farms have been under MPI movement control through Restricted Place Notices since the start of the response.

On 23 August a third farm was added to the list of infected properties. The farm had received some animals from the VLDG farm before *Mycoplasma bovis* was found in New Zealand. No animals have been moved from the property since 20 July 2017. MPI traced animals moved from this property before the response to 14 properties. Owners of these properties were contacted and given directions on what steps to take.

On 29 August 3 farms were added to the list of infected properties.

Two of the VLDG farms under Restricted Place Notices since the start of the response were added to the list. One of these was part of a larger block but managed separately and across a road from the rest of the property. The Restricted Place Notice was re-issued as two separate notices, meaning that there are 17 VLDG properties under movement control.

A trace farm that had received a small number of calves from the third infected farm was confirmed as positive for *Mycoplasma bovis*. The property is a lifestyle block near Rangiora.
Currently (30 August 2017) there are only six infected properties.

MPI is aware of persistent rumours that there are other infected properties. We are tracing all reports and at this time there are only 6 confirmed positive properties.

How did it get here?
We do not know for sure how it came to New Zealand, or how long it has been in the country. We are looking at four possible means of entry – in live animals, imported semen, embryos, and on contaminated equipment. We are tracing movements of possible risk goods onto the affected properties as part of this investigation.

How does it spread?
*Mycoplasma bovis* is mainly spread between cattle in close contact. Generally prolonged or repeated contact with infected animals is required for the disease to be transmitted.

It may also be spread through contact with mud or dung from infected animals. Although it is very rare for it to infect animals other than cattle, they may possibly transfer disease from an infected animal, therefore it is important to keep infected cattle isolated from cattle and other species if possible.

*Mycoplasma bovis* can be spread on any equipment used between farms. Because it causes mastitis, milking equipment is particularly important to clean and disinfect if the equipment is shared between properties or herds.

Wind-borne or water-borne spread is not thought to be a major risk

Refer to the [guide on the MPI website](#) for advice on good farm hygiene practices.

Can it be spread across farm borders?
Yes, repeated cattle-to-cattle contact across boundary fences can spread the infection.

There is some evidence overseas that there is a risk of spread over 1-2 metres however, so preventing fence line contact can prevent spread. Although a low risk this is why MPI is investigating neighbours of suspect properties.

Can it be spread through feed?
Feeding calves unpasteurised milk is a cause of spread in countries where this disease is established.

For adult cattle, spread through feed is not thought to be a risk.

Can an infection lie dormant or will it show immediately in every case?
Dormancy is one of the biggest problems with this disease, and is one of the issues with detection of disease. Some cattle may be sub-clinically (dormantly) infected, and never show disease. Other cattle will break with disease only late in the course of being infected.

Cattle movement of apparently-healthy but infected cattle (subclinical cattle) is the GREATEST risk factor in whether a property becomes infected, along with feeding of un-pasteurised milk to calves.

Does it pass from mothers to calves?
Cow-to-calf transfer during birth is not considered a major route of infection, surprisingly. However, calves fed unpasteurised milk from infected cows can easily contract the disease.

In calves, the disease tends to cause pneumonia that is resistant to treatment with antibiotics, and also arthritis of one or multiple joints. Ear infections (causing head tilt) can also be a sign of this disease in calves.
Can you eradicate – get rid of – this disease?
At this point in time, that’s what we’re aiming for. But there is a lot that we still don’t know. Once we know where it is in our national herd, we can make decisions around how it can be managed, and if eradication is possible. If it transpires that it’s only in a limited number of farms – there is a good chance we can get rid of it. But if we find it much wider spread, this is not likely. It needs to be noted that no other country has ever managed to eradicate it.

What sort of impact is it likely to have on the New Zealand dairy and cattle farming industries?
*Mycoplasma bovis* is primarily a production and animal welfare issue. Infected animals can become significantly ill with unresponsive mastitis, pneumonia and arthritis, as well as late abortions.

It is not a trade concern as most countries with animal production industries live with it, farm meat and dairy products, and successfully trade in them.

Most affected is likely to be the dairy industry because animals are in closer and more regular contact with other animals increasing the risk of contact with a diseased animal, followed by beef production. Dairy production will be affected (if the disease is established here) and overseas experience gives us confidence about what to expect. Internationally it has shown to have an impact, however, best practice is effective in minimising losses over time i.e. good farm management and well managed animal husbandry, in conjunction with standard on-farm biosecurity behaviour, can minimise the effects on production over time.

What happens to infected animals?
Currently animals are being held on the infected farms and restrictions are in place to prevent them being allowed to come in contact with other farms/animals. Some animals have been euthanised by the farmer for welfare reasons. *As Mycoplasma bovis is not a food safety risk, infected animals that are fit for transport are being permitted to go to slaughter.*

Farmers on the Restricted Places must request a permit from MPI to move animals to other Restricted Places or direct to slaughter. Each permit includes requirements for cleaning and disinfection of the stock truck.

What happens to the meat from infected animals?
*Mycoplasma bovis* is not a food safety risk and there are no restrictions on the meat.

What is MPI doing?
A full biosecurity response is underway. Response HQ is at the Animal Health Laboratory in Wallaceville, and Field HQ is in Oamaru, where MPI and AsureQuality staff are now based.

We are working closely with the affected farmers and their veterinarians, as well as with industry stakeholders, including DairyNZ, DCANZ, Beef+Lamb, NZVA, Dairy Vets, and Federated Farmers.

MPI has a 3 pronged strategy to managing this outbreak

**Contain –** Minimise any further spread of the disease.

The 19 farms are under Restricted Place Notices that require permits to move cattle between the other farms in the group and transport cattle direct to slaughter at agreed premises. The meat processor has procedures in place to clean and disinfect the transport trucks before they leave the processor.

Each farm has farm hygiene measures in place to clean and disinfect equipment and vehicles that may have come into contact with cattle or effluent.

1 September 2017
Survey – How widespread is *Mycoplasma bovis*?

Before we can make decisions we need to understand the extent of the disease. MPI has a multi-layered survey that is taking samples from the 19 farms, farms that border those farms, movement traces of stock that have moved to and from farms in the previous 6 months, and a series of regional and nationwide surveys.

MPI is working with NAIT to trace the movements of cattle to and from the Restricted Places over the past 6 months.

Assess the feasibility of eradication – is it possible to cost-effectively eradicate this disease?

MPI is working with industry and Australian experts to understand the impacts of the disease and the potential costs of eradication. Based on the information from the surveys we will assess the feasibility of eradication.

What legal directions are issued under the Biosecurity Act 1993?

**Restricted Place Notice (RPN) issued under section 130 of the Biosecurity Act 1993.**

- RPNs are issued to properties that are believed to, or suspected of having *Mycoplasma bovis* present.
- The RPN prohibits all unauthorised movements of stock and other risk goods onto and off the farm to minimise the likelihood of the disease spreading from the property.
- Any movement of cattle requires a permit from MPI. The transport vehicles are required to follow a cleaning and disinfection process when they leave the Restricted Place.
- AsureQuality staff are ensuring cleaning and disinfecting and permit protocols are being met.
- All incidents of non-compliance are followed up by MPI.

**Notice of Direction (NoD) issued under section 122 of the Biosecurity Act 1993.**

- NoDs are issued to farms when an inspector or authorised person considers that movement of stock and other risk goods from a property poses a risk of spreading *Mycoplasma bovis*. For example, this can be when animals from infected properties have been moved to that property but testing has not yet taken place or results of testing are pending.
- The NoD is aimed at preventing further spread and does not restrict movement of stock or goods on to the farm.
- Cattle can only move off the farm with a permit.
- Other steps such as cleaning and disinfection of vehicles may be required.
- All incidents of non-compliance are followed up by MPI.

Why can’t I know who is being contacted by MPI?

MPI is contacting individual farms where there is potential risk of the disease being present. It’s a case of no news is good news. If you don’t hear, it’s not of immediate concern to you.

MPI is not naming affected properties. This is the law under the Privacy Act.

We are encouraging farmers under controls or investigation to talk to their neighbours and customers, but we are not revealing details of individual farms.
Why aren’t you putting restrictions on all neighbouring properties to the VLDG?
We are only putting such stringent conditions on properties where we know there is a definite connection to a positive infection. There is no indication that neighbouring properties are infected – we know the disease moves slowly outside of direct contact between cattle. It’s quite a complex legal process with some very tough conditions to meet and we can’t just slap it on properties without there being justification of a significant risk. We are testing neighbours as part of our building a picture of the disease spread. But this doesn’t mean they’re highly suspect. Quite simply we don’t need to have the neighbours under controls.

Why aren’t you putting restrictions on all the trace farms and neighbouring properties?
See above. Animals on the farms traced from the infected properties are being tested urgently and the farmers given directions on what they should do. Legal restrictions will be used when required.

Why aren’t you stopping transport of stock between North and South?
Again, it’s a question of risk. We know that we have animals on high-risk properties under lock-down. To stop movement out of the South Island to the North Island we’d need to impose a larger control – creating a Controlled Area.

If we do this, there are consequences. Our markets tend to react to the imposition of controls under the Biosecurity Act; so putting in an unjustified control could affect our ability to trade and export.

Given that semen and embryos are considered to be a possible pathway, why allow them into New Zealand?
There is no documented scientific evidence from any country showing that *Mycoplasma bovis* has been transmitted to a cow in semen. Semen is considered a low risk due to a long international history of safe trade and strict hygiene requirements around collection and use. Currently we do not consider that there is the scientific justification to stop semen and embryo imports, however we are reassessing the risk.

Farmers can continue to make their own decisions around the use of AI this season, but MPI believes there is no new information to make this mating season any different to previous seasons.

To put some perspective around the current situation, the *Mycoplasma bovis* outbreak is New Zealand’s first detection, and semen has been imported for many years at the rate of around 250,000 straws a season. If semen was a significant risk factor, we could expect to see a lot more disease than we are.

What should farmers do?
*Mycoplasma bovis* is a bacterial disease and can be managed through good on-farm hygiene. Basic on-farm biosecurity is recommended, and is particularly important during disease outbreaks such as this one.

Basic farm biosecurity includes monitoring of visitors who interact with cattle, washing and disinfecting of footwear and gear worn between farms, checking and cleaning if necessary any farm vehicles prior to leaving the farm, restricting (as much as possible) movement and mixing of cattle, keeping good, up-to-date health records, and other measures. MPI has produced a cleaning and disinfection guide: [http://www.mpi.govt.nz/document-vault/19532](http://www.mpi.govt.nz/document-vault/19532)

All farmers should take the time to update NAIT movement data online. MPI was able to rapidly trace the animals moved from the infected properties because the farms kept their NAIT movement records up to date and accurate. NAIT is one of the most important tools used by MPI disease investigators when exotic disease is suspected, and it allows investigators to determine where they should search for disease next.
How do I get more information?
Information is on the MPI website: http://www.mpi.govt.nz/protection-and-response/responding/alerts/mycoplasma-bovis/. A regular update is emailed by the response team. To subscribe to this update please contact mbovis2017_liaison@mpi.govt.nz.

Who do I contact if I have any questions?
Please contact your local vet, or MPI through the Info line: 0800 00 83 33 or the Response Liaison email address – Mbovis2017_Liaison@mpi.govt.nz

I think I may have infected animals - who should I contact?
Contact your vet in the first instance, otherwise contact the Ministry for Primary Industries on 0800 80 99 66.

Can I move animals off my farm?
Yes, unless your farm has tested positive for infection, its business as usual.

However, if you have cattle infected with Mycoplasma bovis on your property, you will have been given full instructions about what to do. Infected farms are put under legal restrictions and cannot move stock without permission from MPI. Permits may be given to move animals to slaughter or to other infected properties (for animal welfare issues), but these will be considered on a case-by-case basis.

Can I eat the meat/drink the milk of cattle from infected farms?
Mycoplasma bovis is not a food safety risk, so there is no issue with eating beef or drinking milk from infected herds.

How should lease bulls be managed once they are returned to their home farm?
Farmers should ensure that they know the health status of the farm that they leased their bull to. If they are concerned then they should not return the bull to their property or keep the bull separate from other cattle. Your veterinarian can provide more animal health advice.

DairyNZ has worked with MPI and industry to produce advice on “Managing service bulls” that is available for download from the MPI website – http://mpi.govt.nz/protection-and-response/responding/alerts/mycoplasma-bovis/

What can farm service providers do to protect their business and customers?
Farms should be using routine on-farm biosecurity practices to minimise risk to their animals. Service providers can help minimise risk by complying with the farm’s cleaning and disinfection requirements.

- Don’t arrive unannounced. Let the farmer know you plan to visit their farm and ask their requirements.
- Work with the farmer to comply with any farm biosecurity requirements.
- Clean and disinfect footwear, protective clothing and equipment before coming on farm.
- Be proactive, assure farmers of your hygiene practices.

What should trucking companies be doing?
As above, trucking companies should work with the farmers to meet their hygiene requirements.

All the properties under Restricted Place Notice require permits to move animals between properties in the VLDG and to slaughter. The permits requires that the truck is cleaned and disinfected at the end of each movement.
**How do you test for *Mycoplasma bovis***?
We test for *Mycoplasma bovis* using blood samples, milk samples and vaginal or nasal swabs. Two test methods are in use.

- **PCR** (Polymerase chain reaction) that multiplies distinctive segments of DNA and detects the presence of the bacteria itself.

- **ELISA** (Enzyme Linked Immune Specific Assay) which detects antibodies in blood. This test has now been established and validated and will allow improved screening of suspect properties, particularly dry stock (non-milking cattle).

**Why is it taking so long to get test results?**
Testing for *Mycoplasma bovis* is complex and it’s a big job. Up to 140 animals in each herd are tested using samples of milk, blood, or swabs from the nose and vagina; the lab expects to test more than 39,000 samples during the surveys.

*Mycoplasma bovis* can hide in an infected cow, not showing up until weeks or months later. This means that herds could be tested 3 or more times over 3 – 4 months before we have definite results for each farm.

Unfortunately because *Mycoplasma bovis* is a complicated disease to rule out farmers will have to wait for some time before we can confirm that their herds are not infected. We have to be absolutely thorough in diagnosing positive and negative farms so we can give farmers and the New Zealand public certainty.

Currently we have 30 scientists working in the lab on this, and are bringing in staff from other laboratories to help. Because *Mycoplasma bovis* is common overseas and not routinely tested for the demand from New Zealand has exhausted world supplies of test kits. The manufacturers are producing more kits on rush order for the Animal Health Laboratory. It is estimated that the testing programme will take 12-13 weeks to complete.

**How accurate are the available tests?**
The PCR tests (which detects DNA from the bacterium) are very accurate, and we double-check them by sequencing the DNA to ensure positive results are true. However, PCR may show a slight positive signal that Mycoplasma DNA is present and further tests (e.g. DNA sequencing) are need to determine if it is *Mycoplasma bovis* or another species of mycoplasma.

The ELISA serology (looking for antibodies in the blood) can have poor ability to detect infection in new cases, or in apparently-healthy animals. However, when applied to a herd (e.g. testing multiple animals) it becomes more accurate at detecting the herd status of disease.

**Do test results show immediately?**
No, as discussed above because *Mycoplasma bovis* can hide in infected cattle multiple testing rounds are needed before we can confirm that a herd is not infected.


**Where can I get my animals tested?**
Because *Mycoplasma bovis* is a new to New Zealand organism, MPI’s Animal Health Laboratory is currently the only laboratory in New Zealand that can test for the bacterium. The lab is very busy testing an expected 39,000 plus samples as part of the planned survey and is not in the business of testing commercial samples.
So I can’t get private tests done, even if I want to pay for them myself? Correct.

Have neighbours been informed/ Are neighbours under any controls?
In other countries where *Mycoplasma bovis* is widespread, across-fence contact is thought to be a method of farm-to-farm spread. Therefore MPI is investigating neighbouring properties, including evaluation of likelihood of stock interaction over the fence, and other risk factors. Testing from these properties is underway to ensure they are free of disease. If any neighbouring properties are positive by laboratory testing, they will also be subject to movement controls and tracing of any in-contact properties. MPI intends to continue this tracing of infected properties until it can define the full extent of disease.

Is there a risk it may be present in other areas? How likely is this?
The disease is believed to have been present on the infected farm for at least a month, possibly longer. In that case, there may be other infected properties in other regions of New Zealand. However there is no evidence of that as yet.

How do I know that any stock I’m buying (particularly calves) is free from *Mycoplasma bovis* infection?
At this point in time, MPI believes that the infection is contained to a small number of properties, and therefore most other animals across New Zealand are free of disease.

We are still in the early stages of defining where the infection is. However we believe the risk to most producers to be very low, and will be updating that as the investigation progresses. In general, buying in healthy-looking stock from a single property is the best way of reducing disease risk (of any sort) to your herd.

DairyNZ have developed a [pre-purchase checklist](https://www.dairynz.co.nz/media/5787884/myco-bovis-pre-purchase-checklist-aug-2017.pdf) to help when you’re buying stock.

How can I assure people that any stock I’m seeking to sell (particularly calves) are free from *Mycoplasma bovis* infection?
See above for the situation as it currently stands. At this point in time all stock believed possibly infected has been placed under movement control. If that changes, MPI will provide updates as it is able to.

If meat processors see animals with suspect symptoms arriving for slaughter anywhere around the country, can they be tested *Mycoplasma bovis*?
If inspectors at meat processors suspect that animals are infected they report to the Biosecurity Hotline – 0800 80 99 66 and the case will be followed up.

Can we prevent it becoming an important disease for cattle here? At this point in time, we are aiming to eradicate *Mycoplasma bovis*. However, there is a lot that we still don’t know. Once we know where it is in our national herd, we can make decisions around how it can be managed, and if eradication is possible.

What do other countries do to manage the impacts of *Mycoplasma bovis*?
Enforcement of good on-farm biosecurity and hygiene practices are key to managing the infection.

For example, refer to the Dairy Australia website for more information about the disease in Australia ([https://www.dairyaustralia.com.au/](https://www.dairyaustralia.com.au/))