Biosecurity New Zealand
Tiakitanga Pūtaiao Aotearoa

TESTING AND SURVEILLANCE FOR *MYCOPLASMA BOVIS*

Testing for *Mycoplasma bovis*

Mycoplasma bovis can cause severe mastitis, arthritis and pneumonia in cows. You can find full information about the disease at: **www.mpi.govt.nz/bovis**

You will have heard that *Mycoplasma bovis* is difficult to find. Cattle infected with *Mycoplasma bovis* appear completely normal most of the time, and they shed the bacteria intermittently.

So when we test for *Mycoplasma bovis*, we try to improve the chances that we will find an infected herd by:

- Testing large numbers of animals
- Testing multiple times
- Timing the testing so that it occurs when an infected animal is more likely to be shedding (e.g. times of stress, or another illness).

It means testing a lot of animals from all the different "in contact" groups on your farm, and testing those groups multiple times. This is why testing programmes for each farm take some time and several tests.

Farms connected to *Mycoplasma bovis*

We are testing all of the farms that are connected in some way to the farms we currently know have tested positive for *Mycoplasma bovis*. This includes neighbouring farms and those who have received animals from farms which are under investigation or Infected Properties.

A farm is a forward trace if MPI finds they have received animals, milk or other risk goods from a farm of interest (which is a Restricted Property (RP) or Infected Property (IP).

We find most of our traces by looking at:

- NAIT movements from the farm of interest
- RP/IP farmer written reports
- Public reports from farmers who have a movement that is not recorded in NAIT.

These movements are entered into our database, and our Casing Team will call the trace farm to check the details and confirm whether they received the risk movement. Calls from farmers are also entered into the database at this point. This is the point where farms hear that they are a trace farm.

We aim to make casing calls for an urgent trace within three days of finding the trace.

From trace to surveillance

The Surveillance team will then review the information:

- Where the risk movement is from
- When it happened
- Whether the trace animals are still on the farm
- Whether any animals on farm were in contact with the trace.

Depending on this information and risk analysis, some farms are ruled out and removed from the trace list. If more investigation is needed, the farm will hear from AsureQuality who books in testing.

When the call is made to book the first round of testing, a trace farm will know that they are under surveillance.

Once a farm is cased, they will either progress to surveillance or no further action will be required. Either way, MPI will contact farmers to discuss their situation.The timeframe depends on the urgency – higher risk farms will be contacted more quickly. We aim to call to book testing within one or two days from knowing a farm needs to go under surveillance.

Surveillance visits

First visit:

- AsureQuality visit the farm to take blood and swab samples from a selection of animals. To get the best possible results, they take blood tests from at least 100 animals, or for smaller herds, as many as needed to provide a good, clear result.
- The samples are sent to MPI's Animal Health Laboratory in Wellington for testing.

FEDERATED FARMERS OF NEW ZEALAND
NZVA New Zealand Veterinary Association
DairyNZ
beef+lamb new zealand
Ministry for Primary Industries Manatū Ahu Matua
DCANZ DAIRY COMPANIES ASSOCIATION OF NEW ZEALAND
DAIRY CATTLE Veterinarians
New Zealand Government

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- We aim to have results from any round of testing available to report to farmers approximately 4 weeks after samples are taken.
- If these tests are negative it does not mean a farm is definitely free of *Mycoplasma bovis* – a further one or two rounds of testing will be required to confirm that status.
- If the tests indicate a positive result, this means more testing to confirm one way or the other.
- This process can be frustrating for farmers, but we need to have total confidence in the results.

Second visit:
- After three to four weeks, the tester will return to the farm and again test 100 animals. This will usually be the same animals but could include some additional ones.
- We need to do a second round even if the first test result was clear, as we haven't tested all the animals, and also as some animals can be carrying the bacteria but not be showing symptoms. If the disease is present, by the time of this second testing we would expect a greater number of animals to be infected and for this to show up in our tests.
- Once again, we aim to have results available to report to farmers approximately 4 weeks after samples are taken.

Third and ongoing visits:
- In the majority of cases, two rounds of testing are sufficient to determine the status of the farm. But if there is any uncertainty or not enough information, further rounds of testing may be needed.

Test results

When the lab has processed the samples the results will be put into our database. Only when we have all the results available in the database will the Surveillance team review them. After they have been reviewed, AsureQuality will call to report on the results, and the next visit can be scheduled.

If you haven't heard about your results after five weeks then you can contact MPI to enquire after them. If you have an urgent situation and need your results then we will endeavour to put priority on your results.

About NODs

A NOD stands for Notice of Direction. This is a legal notice given to a farm that dictates how animals can move on/off the farm.

Movement NOD
- If you are issued a movement restriction NOD then you can bring animals onto the farm, but cannot move any animals off.
- A Movement NOD will be issued if a farm has received trace animals from an RP/IP during the time period when we believe the RP/IP became infected. If there are no trace animals on your farm, but there are animals that the traces have been in contact with then a NOD will also be issued.
- You will be given an ICP Manager for all your MPI questions, and support will also be available through your Rural Support Trust.
- The NOD prevents animals that may be infected from leaving the farm to spread the disease to other farms. To remove the NOD we need to cull and sample the trace or in contact animals.
- A NOD will also be removed if a farm becomes an RP/IP, but is replaced by a restriction of movement of animals both on and off the farm.
- A NOD to Cull list will usually be for the trace animals and/or animals that have tested positive.
- The animals will be sampled at slaughter to provide us with more definitive results. We may be asking for a NOD to Cull in place of a round of testing, or more commonly to remove the trace animals from your farm and allow the Movement NOD to be lifted.

What happens if a farm has infected animals?

- MPI will place a legal Restricted Place Notice on the property restricting the movement of animals and other risk goods off the farm. MPI will begin referring to your farm as an Infected Property (IP).
- MPI will work with local vets to advise the farmer on managing any sick animals.

Testing for *Mycoplasma bovis*

There are two types of tests used worldwide for *Mycoplasma bovis*. Due to the nature of *Mycoplasma bovis* as a disease and the difficulties in interpreting results, only the PCR is available for commercial use in New Zealand at this time.

The PCR test

This is the best test for individual animals.

The PCR (polymerase chain reaction) test works by finding DNA from a virus or bacteria. This test is best able to detect *Mycoplasma bovis* when the animal is shedding.

Infected cattle will definitely shed when showing clinical signs of illness, but may also sometimes shed without showing signs of illness.

If an animal is not shedding the bacteria, its DNA will not be present in the sample, and the test will be negative.

It can be used on milk samples, swabs from the back of the throat (hard to get), fluid from swollen joints of clinical animals, and semen or preputial swabs in bulls. It can't be used on blood samples.

The PCR is excellent at letting us know when bacteria are present, but only when the animal is shedding. So you also have to take other factors into account when choosing to purchase animals. Do not base your decision only on the result of a laboratory test.

ELISA

The *Mycoplasma bovis* ELISA test is designed to find antibodies to the bacteria in the animal's blood. This means that, unlike the PCR, the ELISA is looking for the body's immune response to an infecting organism, rather than looking for the organism itself. The ELISA can give information at the herd level by looking at how a group of animals' immune systems are reacting to a bug like *Mycoplasma bovis*, which helps us determine if it is present in the herd. The ELISA test for *Mycoplasma bovis* is not as useful in the individual animal, or in small groups of animals.

Because there can be antibody cross-reactions with other bacteria normally found in New Zealand, and because the test is not perfect, the results from a herd ELISA can be very difficult to interpret. This test is not available for commercial use in New Zealand at this time but MPI is using it as part of our testing regime.

For more information

Call MPI on 0800 00 83 33
or email: MBovis2017_Liaison@mpi.govt.nz

MPI website: www.mpi.govt.nz/bovis

Rural Support Trust – 0800 787 254

Exotic Pest and Disease Hotline – 0800 80 99 66

Testing your animals yourself

Testing your animals yourself may not be the best use of your time. Other things you can manage to make a difference include fewer cattle movements, and lower risk practices around feeding calves, to give you an idea of your farm risk profile.

For the tests to be meaningful, they must be carried out on an adequate number of animals, according to the provided recommendations, at an appropriate time, and they should be interpreted as part of a larger picture including all available information about herd composition, movements, and health history.

Test results for *Mycoplasma bovis* can be used as part of your decision-making process for purchasing or leasing animals, but make sure you consider other factors that could influence risk of exposure.

Your veterinarian can help you understand testing for your group of cattle, and can help you interpret the results. Your industry bodies also have great information about health and biosecurity: **https://www.dairynz.co.nz/media/5788853/biosecurity-wof-a4-brochure.pdf**