

Mycoplasma bovis

GUIDANCE FOR BEEF CATTLE FARMERS



Ministry for Primary Industries
Manatū Ahu Matua





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Beef + Lamb New Zealand has prepared this booklet to outline the steps cattle farmers can take to reduce the risk of introducing *Mycoplasma bovis* (*M. bovis*) onto their farms.

Outbreak

In July 2017 *M. bovis* was found in a dairy herd near Oamaru. This was the first time this production-limiting disease had been found in New Zealand. It has been detected on a number of farms from both the North and South Islands.

In May 2018, the decision was taken to try and eradicate this disease.

For additional information and resources visit:
www.beeflambnz.com/mycoplasma-bovis



What is *Mycoplasma bovis*.

Mycoplasma bovis is a bacterium that causes a range of diseases in cattle including mastitis that doesn't respond to treatment, arthritis, pneumonia and late-term abortion.

Special characteristics of mycoplasma bacteria (including *M. bovis*) include:

1. Difficulty in treating: the lack of a normal bacterial cell wall means that certain widely-used antibiotics, which target bacterial cell walls, are ineffective.
2. Difficulty in detecting: mycoplasmas also have an ability to hide away from the immune system so that infections are difficult for cattle to fight and to detect using tests which rely on host immune responses or shedding of the bacteria.
3. Note that the bacteria will not survive well in the environment. Heat, sunlight and drying will kill the bacteria quickly.

Source: MPI

How is it spread?

M. bovis is mainly spread by direct contact between infected animals, calf milk from infected cows and on equipment that has been used on infected animals, e.g. used for milking, artificial insemination and veterinary procedures.

It spreads through bodily fluids including mucus and vaginal secretions. It is not thought to be transmitted in urine or faeces. It is not windborne or spread in rivers and streams. The disease moves relatively slowly between farms, usually from the movement of infected stock.

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BIOSECURITY CHECKLIST

- *M. bovis* is spread through close and direct contact between cattle. Nose to nose contact across fence lines is a possible risk you need to manage. Create two metre fence, laneway and road buffer zones using robust fencing (e.g., electric outrigger fencing or a separate electric fence) two metres back from existing fences.
- Where practical, limit cattle movements onto your farm. *M. bovis* can be present in apparently healthy animals. Quarantine new stock for a minimum of seven days-ideally for as long as possible.
- Maintain NAIT records and ensure Animal Status Declarations are fully completed and retained.
- When buying cattle, including bulls, find out the health history of the herd, particularly with respect to mastitis and lameness in cows and pneumonia and lameness in calves.
- When buying cattle ask for assurances that the INSIDE of the truck bringing them onto your farm is thoroughly cleaned before your cattle are loaded. Also require that they are not mixed in with a split load of other animals destined for another farm.
- Ensure footwear, protective clothing and equipment that has been in contact with animals on other farms is either not used on your farm or is properly cleaned and disinfected before and after use.
- Equipment that has been in direct contact with animals on your farm should be thoroughly cleaned and disinfected before and after use.
- Machinery can be contaminated by saliva when licked by curious cattle. Park farm bikes outside of paddocks when shifting fences and feeders. Avoid leaving tractors and wagons sitting in paddocks. Remember that if you choose to disinfect something, disinfection doesn't work unless the surface has been cleaned first.
- It is good practice to involve your staff with the planning of procedures on your farm. Create Standard Operating Procedures (SOPs) so the team has a clear understanding of expectations during most situations.

Source: MPI, B+LNZ

MANAGING THE RISK - WHAT YOU NEED

A quarantine area well away from other livestock for holding new or stray cattle.

Robust fencing to build two metre barriers along boundary/road/laneway fences to prevent contact with other people's cattle. If using electric fences, remember power outages could allow breaches to occur.

Signage at the gate to remind visitors of your biosecurity requirements.

Disinfectant and access to hot and cold water for cleaning equipment, clothing, boots and hands for people handling your cattle. Suitable disinfectants for *M. bovis* include 1 % Virkon (made by mixing a standard 50 g Virkon sachet with 5 litres of water), 0.2 % citric acid (made by mixing 1 tsp citric acid with 1 litre of water), or Trigene.

Good records, including a map of your farm and detailed recording of livestock movements around it to provide proof that your breeding cows and heifers have had no contact with any dairy grazing or trading animals you also have on the farm.

Portable ramps and yards to be used for grazing or finishing dairy-origin stock, to prevent them sharing your main yards and ramps and potentially contaminating your breeding herd.

Source: MPI, B+LNZ

MORE RESOURCES

Download - [WOF checklist](#)

www.beeflambnz.com/mycoplasma-bovis

Use this checklist for sheep and beef farmers to identify ways you can help protect your farm

Download - [What to look out for](#)

www.beeflambnz.com/mycoplasma-bovis

A3 poster available to download/print on 'what to look out for'

GRAZING OR TRADING DAIRY STOCK

- Make it clear that animals that are not NAIT compliant will not be accepted onto your farm. NAIT compliant animals are tagged and registered with NAIT and have a completed movement record generated by the recipient.
- Ask herd owners to do tasks such as vaccinating and drenching at the home farm to reduce use of your yards. Consider using portable ramps to offload. If you share your yards with a neighbour, have a discussion about how shared use will work. This may include determining when yards will be used and agreement on when to clean and disinfect if practical.
- Preventing direct contact between cattle from different herds is critical. Work with herd owners so cattle from the same herd arrive during a morning, afternoon, or day, without having contact with other herds.
- Allowing a delay between groups of arriving cattle of one day can let sunshine and wind do much of the work and reduces the need for disinfection. If disinfectants are used, ensure the surfaces being sprayed are clean and use a bactericidal product that is safe for you, the cows, and the environment.
- Have a shared agreement with herd owners that skinny, lame, and otherwise unwell animals will stay at their home property. Make a plan now for how you will deal with sick or injured stock (call the vet, mark/record/separate/treat, send home).
- **Under no circumstances should sick or injured animals from multiple herds be mixed into one mob.**
- Park farm bikes outside of paddocks when shifting fences and feeders. Avoid leaving tractors and wagons sitting in paddocks.
- Feeders and troughs get covered in saliva. Keep feeders and troughs in the same herd for the grazing season. Make sure staff are aware of the saliva contamination as they move between mobs. Depending on the gloves worn, it may or may not be practical to disinfect the hands/gloves between mobs.
- Ensure your two metre buffer zones are in place between all groups of cattle at all times, including along lanes and roadways.

MORE RESOURCES

Podcast - [Managing the risk of *M. bovis* during the winter grazing season](#)
www.beeflambnz.com/mycoplasma-bovis

Podcast - [How to keep your farm free from *M. bovis*](#)
www.beeflambnz.com/mycoplasma-bovis

Richard Laven of Massey University explains the precautions graziers and owners can take to further reduce the low risk of spreading the disease, and what farmers should be doing as good biosecurity management practice.

Download - [Biosecurity communication plan for graziers](#) www.beeflambnz.com/mycoplasma-bovis





PROTECTING YOUR BEEF BREEDING HERD

If infection is detected in your herd, it will be accompanied by whole-herd depopulation.

Importantly, if you have a beef breeding herd and also rear bull beef or dairy beef steers, or graze stock for other people, you are strongly advised to keep your breeding herd entirely separate and run as a closed herd.

Keep very good records of herd separation so that if infection is introduced with animals purchased for rearing or grazing, then response measures may only apply to those animals in contact with the purchased stock.

This means diarising (either in paper form or using farm management software) all cattle movements including the date, and the paddock name or number. While this may not prevent your breeding herd being tested if *M. bovis* is detected in stock on your property, it may mean that negative tests are viewed with greater assurance by MPI.

To protect your breeding cows

- Have a separate NAIT account for your beef breeding herd and meticulously record all cattle movements using NAIT. This is likely to mean splitting your farm into two numbers for NAIT purposes. OSPRI can help: **NAIT contact centre Freephone: 0800 482 463 (Monday to Friday: 7am - 6pm) Email: info@nait.co.nz**

- Isolate your beef breeding herd from other cattle. Ensure you have secure fencing and a two metre buffer zone between your beef breeding cattle and other cattle. Consider a full paddock separation.
- Permanent cattle yards should ONLY be used for your beef breeding herd. Use portable ramps/yards for other cattle.
- Machinery (farm bikes and tractors) should be kept outside of paddocks with cattle in them. Where applicable, have separate equipment for your beef breeding herd.
- Have designated paddocks for your beef breeding herd. **If you do need to use paddocks used by introduced stock, clean and disinfect troughs and feeders.** A stand-down period of as long as practical for the paddock is strongly recommended.
- Keep good records, including a map of your farm and detailed recording of livestock movements around it to provide proof that your breeding cows and heifers have had no contact with any dairy grazing or trading animals you also have on the farm.
- Do not co-graze sheep with rearing or grazing cattle and then expose them to your beef breeding herd. While it is unlikely that they will spread *M. bovis* on muck attached to their feet and fleece, you don't want to take a chance that sheep will transfer the disease to your beef breeding herd.

Source: MPI and B+LNZ

BUYING BEEF BULLS

Beef bulls are considered a low risk stock class, but there are measures farmers can take to reduce the risk of bringing *M. bovis* onto their properties.

These include determining the health history of the source herd, ensuring the bulls are transported in clean trucks and quarantining the bulls for as long as possible (at least 7 days) from your other stock. It is highly recommended that accurate records are kept detailing how new bulls have been kept separate from home stock.

If the bulls are of dairy origin and *M. bovis* has not been detected in the herd's bulk milk tests, then the risk of these bulls spreading infection is lower than from a property where test results are unavailable.

If the bulls are from a beef property and *M. bovis* test results are unavailable, then the best indicator of the level of risk from these bulls remains the health status of the herd(s) the bulls have been running with – pay particular attention to the herd's levels of mastitis and lameness.

The risk from beef bulls increases in proportion to the number of property movements they have had; less is better.

Source: B+LNZ, MPI, DairyNZ

Testing bulls for *M. bovis* (see also the section below)

- Because infected animals shed the bacteria intermittently, testing will not completely exclude the possibility of infection.
- Three or more negative tests from the same bulls from the same property will provide some confidence that the farm is *M. bovis* free, depending upon how the testing was undertaken, how many animals were tested and the timeframe between tests.

- The testing process can be prolonged, can lead to inconclusive results and the possibility of false positive or false negative results. We advise farmers to consult their vet if strongly motivated to undertake testing.

Determine the health status of the herd and individual bulls

- Ask the stud breeder if there have been any prolonged animal health issues in the herd or individual animals.
- Ask whether the bulls remained on the one property in their lifetime and whether they have been exposed to any trading cattle or dairy grazing animals.
- **Transport:** Ensure any bulls purchased are transported in clean trucks. Ideally, trucks should be hosed down between herds and again at the end of the day.
- **Do the paper work:** Ensure all animals are ear-tagged, that movements are registered with NAIT and that you receive an Animal Status Declaration (ASD) form with every group of animals purchased.
- **Quarantine:** Keep purchased bulls away from other cattle already on your property for as long as possible and record how this quarantine process was implemented.

Source: B+LNZ, MPI, DairyNZ

MORE RESOURCES

Download – [Pre-purchase checklist](https://www.beeflambnz.com/mycoplasma-bovis) for *M. bovis*
www.beeflambnz.com/mycoplasma-bovis



M. BOVIS – PRECAUTIONS FOR CALF REARING

If buying or selling calves or milk, there are some simple steps that can be taken to reduce the risk of spreading *M. bovis* and other diseases.

When buying calves

Stock movements are the highest risk for spreading *M. bovis*

1. Purchase from as few sources as possible.
2. Deal directly with the source farm or via an agent.
 - a. Ask about any *M. bovis* test results available for the farm.
 - b. Ask if the farm has been subject to any *M. bovis* tracing by MPI.
 - c. Ask about the stock trading practices for the farm.
 - d. Ask if all stock movement records are up to date and recorded in NAIT.
 - e. Ask about cow and calf health on the farm for the past two seasons and use the pre-purchase checklist available at www.dairynz.co.nz/mbovis
3. Avoid buying from saleyards because of the cattle mixing that occurs there.
4. Purchase only calves with NAIT tags and promptly record all movements.
5. Ask your transporter to avoid mixing calves with other cattle in holding yards or on the truck.
6. Keep purchased calves isolated from your main group for at least seven days and monitor them for signs of disease.
7. Find a buyer now for your future weaned calves, if possible, and tell buyers about your efforts to reduce risk of *M. bovis* exposure.

Buying milk (or feeding calves on your farm)

Feeding infected milk is the second highest risk of spreading *M. bovis*

1. Milk that has the lowest risk of containing *M. bovis* bacteria comes in these forms: calf milk replacer powder, acidified milk, or pasteurised milk.
2. If you're using milk replacer powder, order now to avoid problems with supply.
3. If you're feeding whole milk, consider the following:
 - a. Do not feed milk from cows under treatment for mastitis or other illnesses, this milk should be discarded. These cows are more likely to shed *M. bovis* into their milk than healthy cows.
 - b. Acidification with citric acid to a pH below 5 for at least 8 hours will kill *M. bovis* but below a pH of 4 the milk will be unpalatable and the calves will refuse to drink it. Our recommended target is 4.5.

- c. Pasteurisation will kill *M. bovis* if the machine is working correctly and the proper procedures are followed. There is considerable financial outlay required for a pasteurisation machine.
- d. Addition of yoghurt to milk is a less reliable way to reduce the pH, as this process takes more time and is temperature dependent to get the culture growing. If the pH doesn't drop below 5, *M. bovis* will not be killed.
- e. *M. bovis* is not killed by the addition of potassium sorbate preservative.

Advice for acidifying milk with Citric Acid

1. Do not add acid to warm or hot milk as the milk will coagulate.
2. Always add acid to milk, not milk to acid.
3. Acidification works best when citric acid is added to fresh milk.
4. When using citric acid, the rate is 5.5 grams citric acid per litre of whole milk, or 550 grams per 100 litres of whole milk, or 5.5kg per 1,000 litres of whole milk.
5. The acid needs to be sprinkled on top of the milk while it is being agitated.
6. Do not acidify below pH 4 as this will result in thickened milk and risks complete coagulation. In addition, calves will not drink milk with a pH of 4 or below.
7. Milk at pH 5 and below separates, but with gentle mixing goes back into a homogenous solution.
8. Gentle mixing of the milk twice a week is the recommended method. Continuous mixing causes coagulation, as does vigorous mixing.
9. Note for that systems that pipe milk, there may be coagulation in the pipes/tubes with blockage of lines and nipples. This may result in the feeding of "whey" to calves if casein coagulates.
10. The target pH is 4.5 for a minimum of 8 hours. Using the method described here, this should be achieved and the *M. bovis* bacteria will be killed.
11. Test the pH of milk half an hour after the addition of citric acid to the milk and again just prior to it being fed to calves. Use pH test strips which can be purchased online and are available at farm merchant stores.
12. Citric Acid is available online and will soon be available at various other suppliers including at farm merchant stores.

MORE RESOURCES

Download - [Pre-purchase checklist for *M. bovis*](http://www.beeflambnz.com/mycoplasma-bovis)
www.beeflambnz.com/mycoplasma-bovis

TESTING FOR *M. BOVIS* – YOUR OPTIONS

By now you have probably heard that *M. bovis* is very difficult to find and detect. Animals infected with *M. bovis* appear completely normal 80-90% of the time, and they will only shed the bacteria intermittently. Trying to find these animals is like trying to find a needle in a haystack.

When testing for *M. bovis*, we try to improve the chances of finding an infected herd by:

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

This means that a testing programme for your farm is no simple feat. It will mean testing a lot of animals from all the different “in contact” groups on your farm and testing those groups multiple times. If you want to test your animals to give yourself some peace of mind, you may find that testing is more aggravation than it’s worth. Instead, focus on other factors relating to the numbers of cattle movements and risk practices around feeding calves, to give you an idea of your farm’s risk profile.

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

PCR

PCR is the name of a DNA based test that can be used to detect DNA that is specific to a particular organism, such as *M. bovis*. Whilst PCR is a very sensitive test it still requires a certain number of *M. bovis* to be present in a sample. This DNA test is excellent at finding *M. bovis* when an animal is shedding. However, when an animal is not shedding the bacteria, there will not be enough *M. bovis* DNA in the sample and the PCR test will be negative. It is important to understand that this does not mean that the animal is free from the disease, unfortunately it is a current limitation of the test.

Out of the options we have available for testing our animals, PCR is superior to ELISA. ELISA is not available for commercial use in New Zealand at this time. PCR can only be used on milk samples, swabs from the back of the throat of animals (very 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 at this time.

Remember – PCR is excellent at letting us know when bacteria are present, if the animal is shedding them. For this reason, while PCR is a good tool, you have to take many factors into account when choosing to purchase animals. DO NOT base decisions only on the result of a laboratory tests.

Final thoughts

Laboratory tests are tools. Like any tool, they can be used properly or improperly. When used improperly, they can be dangerous. Test results for *M. 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.

For the tests to be meaningful, they must be carried out on an adequate number of animals, appropriately collected samples, 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. Your veterinarian can help you understand which test is appropriate for your group of cattle and can help you interpret the results.

The availability of tests and technology is constantly evolving and we will keep you informed of any developments in this area.



FREQUENTLY ASKED QUESTIONS

What is phased eradication?

It means the sector is working to completely get rid of *M. bovis* from New Zealand's dairy and beef herds over time. All herds with infected animals in them will be culled – on a timetable that works for the farmer – so long as MPI is confident the disease has been locked down on that farm.

What's an IP, an RP and a NoD?

An Infected Property (or “IP”) is a farm where MPI has confirmed *M. bovis* through a thorough testing process. All cattle will be culled from these farms. Infected properties will be under legal controls known as a Restricted Place Notice.

A Restricted Place (or “RP”) is a farm where there is either confirmed disease or a very high suspicion of disease. Cattle and other risk goods (equipment, vehicles, farm equipment etc) cannot be moved on or off the farm without permission from MPI. Under the eradication programme, many RPs will be culled.

A farm under a Notice of Direction (or “NoD”) is where MPI believes a risk event has occurred – such as a transfer of cattle from an infected or high-risk property and testing is underway. Farms under a NoD cannot move cattle and risk goods off the farm. 70-80% of farms under a NoD prove to be negative and the controls are lifted.

What would happen if my farm comes under suspicion?

If tracing of cattle from infected farms suggests you may be at risk, you'll have a call from MPI. They'll ask questions about animals you've brought onto your farm and when. The timing of movements may be enough to rule you out, but if not, someone will come to carry out blood tests on some of your animals. If testing is required, you'll be put under a Notice of Direction restricting the movement of cattle and some farm equipment off the property. Testing can take some weeks and there may need to be several rounds of tests to confirm the disease or freedom from it. Remember some 70-80% of farms tested are negative.

If one class of beef tests positive, will all my beef animals need to be slaughtered?

Now that phased eradication is being pursued, detection of the disease will mean whole-herd depopulation. However, the word “herd” is critical here. If you have a beef breeding herd and also rear bull beef or dairy beef steers, aim to keep your breeding herd entirely separate and run it as a closed herd.

Keep very good records of this separation, so that if infection is introduced via animals purchased for rearing, then response measures may only apply to those animals in contact with the purchased stock.

How long can *M. bovis* hang around outside of an animal?

M. bovis can survive outside of cattle for very short periods. The disease breaks down within a matter of days when exposed to sunlight and fresh air. The bacterium does survive for slightly longer in moist environments. This is why MPI takes a cautious approach of a 60 day stand down period between when a farm is depopulated and when a farmer can restock.

What's the single most important thing I should think about to remain safe?

Limit the introduction of cattle onto your property and, if you do have new cattle coming on to your property, keep them separate from existing animals, if possible. That means a two metre buffer zone along fences, including roadways and lanes. Keep good records of how you have kept them separate from other mobs.

Should we be double-fencing boundary fences?

The disease spreads in two main ways – animal-to-animal contact and feeding infected milk to calves. You therefore need to avoid grazing paddocks when your neighbour has cattle in an adjacent paddock, unless you have a boundary that prevents nose to nose contact.

If you do not have a buffered boundary already – but you do have to graze that paddock – then create the two metre buffer zone using electric fencing.



Does *M. bovis* affect sheep?

No. There are a limited number of reports in the scientific literature where *M. bovis* has been isolated from sheep but it is not generally regarded as a pathogen of sheep, nor do sheep play any direct role in the transmission of infection. This is why there will be no levy on sheepmeat to pay for the costs of the response.

Do movement restrictions on cattle farms include any restriction on the movement of sheep?

Yes. This is because although sheep do not pose an infection risk, alongside other livestock and farm equipment, they are potential carriers of contaminated material (on coats, hooves etc). However, this risk is very small and because of this, tracing of disease does not involve looking at movements of animals other than cattle that have occurred to and from properties of interest.

If we farm in an area that's clear of *M. bovis*, should we insist all visitors, contractors and transport trucks clean their vehicles and equipment?

Vehicles pose very little *M. bovis* biosecurity risk. It is safe for trucks to move from infected farms to other properties, because all infected farms are under the Biosecurity Act's strict legal controls which require comprehensive cleaning and disinfection before leaving the property.

However, farm equipment may play a role in the spread of the disease, especially equipment that comes into direct contact with infected animals, such as artificial insemination instruments, drenching equipment etc.

Basic on-farm biosecurity is recommended. This includes monitoring of visitors who interact with cattle, and ensuring the clothing and footwear worn by contractors coming onto the farm to work with cattle is clean.

If we had trading stock that tested positive, can we carry them through and finish them as prime?

MPI intends that infected farms be given some flexibility to continue to farm for a limited period

prior to depopulation if they wish. These farms would be placed under movement restrictions (cattle on and off property) until depopulated and cleaned and disinfected. However, depending on risk, MPI may determine the need to cull before they reach prime.

Should we be cautious about buying from sale yards?

At this point, MPI believes the infection is contained and that most animals across New Zealand are free of the disease. In general, buying-in stock from a single property where you have had a chance to seek information about the health status and history of the animals is the best way of reducing disease risk – of any sort – to your farm.

Will beef cattle be subject to tests?

At this stage, only if your farm is connected to one of the properties that have tested positive for *M. bovis*. This includes some neighbouring farms and farms that have received animals from positive farms. Some wider surveillance for infection in the beef industry is expected, for example possibly including on-farm blood testing or swabbing animals at meat processors, but the details haven't been finalised yet.

Are there any food safety risks associated with eating meat from an animal infected by *M. bovis*?

M. bovis is not a food safety risk. It is a disease that affects animal welfare and production. It affects only cattle, including dairy cows and beef cattle. It is common in many food-producing nations where infected animals that aren't showing symptoms are processed for human consumption.

Cattle that are slaughtered in New Zealand as part of measures to control *M. bovis* are processed in line with standard procedures. Before leaving the farm, they are assessed by vets to confirm they are fit for transport. At the processing plants, MPI veterinarians assess the health of each animal before slaughter.

Any animals that are sick, severely injured, or have any medication in their system are not processed for human consumption. This is a requirement of New Zealand law. All animals are also examined after slaughter to ensure the meat is safe and suitable for consumption.



THE RESPONSE – SURVEILLANCE AND DISEASE CONTROL

Information on the response measures are available on the MPI website:

www.mpi.govt.nz/bovis

COMPENSATION

MPI has developed a guide to help people complete claims for compensation under the Biosecurity Act 1993 (the Act) in relation to the *M. bovis* response.

The Act (section 162A1) provides that in certain circumstances a person or business is entitled to compensation where MPI has exercised powers and a loss has resulted, property was damaged or destroyed or restrictions were imposed on the movement or disposal of your goods, which have caused losses.

Losses must be verifiable, and reasonable steps must have been taken to mitigate the loss. The information provided in the compensation claim form will help MPI to evaluate a claim.

Source: MPI

MORE RESOURCES

Download – [Biosecurity Act compensation form](http://www.beeflambnz.com/mycoplasma-bovis)
www.beeflambnz.com/mycoplasma-bovis

LOOKING AFTER YOURSELF

The *M. bovis* response will continue to cause tremendous strain for many people directly affected by it. It is important that everyone looks out for one another. If you have any concerns about someone you know, contact the Rural Support Trust or other community support services.

WHO TO CONTACT:

The MPI *Mycoplasma bovis* website is updated regularly: www.mpi.govt.nz/bovis

Questions for MPI: Phone **0800 00 83 33** or email MBovis2017_Liaison@mpi.govt.nz

Rural Support Trust for farmer welfare:
Phone **0800 787 254**

Exotic Pest and Disease Hotline:
Phone **0800 80 99 66**

Your GP or your vet

Your local B+LNZ extension manager:
www.beeflambnz.com or email
enquiries@beeflambnz.com

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