

Information for farmers on methicillin-resistant *Staphylococcus aureus* (MRSA) in dairy cows

1. What is MRSA?

Staphylococcus aureus (*Staph. aureus*) is a common type of bacteria often found on the skin or in the nostrils of people and animals. In humans, it can cause skin infections, or severe infections in the lungs, blood or bones, particularly in people with a weakened immune system.

In cows, *Staph. aureus* is a common cause of mastitis. Infections are difficult to treat effectively but are usually sensitive to some of the antibiotics in the beta-lactam class (the active ingredients penicillin, amoxicillin and cephalosporins used in most mastitis therapies). For more information see the [DairyNZ fact sheet on Staph aureus management](#).

Methicillin-resistant *Staphylococcus aureus* (MRSA) are *Staph. aureus* that are resistant to nearly all beta-lactam antibiotics, making them very difficult or often impossible to cure. MRSA infections are not common in New Zealand cows but are an increasing cause of serious infections in humans. In the last few years MRSA has been isolated as a cause of mastitis in a few New Zealand dairy herds, likely spreading from people to cows.

MPI is monitoring bacterial samples collected from animals to understand the current levels of resistance to antibiotics and monitor for any emerging resistance trends.

2. What should I do if MRSA is diagnosed in my herd?

In New Zealand, infection with MRSA is not notifiable. It is considered a herd/animal-health matter that should be discussed with your veterinarian.

Antimicrobial resistance (AMR) (including MRSA) should always be taken seriously to minimise the spread of resistant organisms within and outside your herd. Cows with MRSA are unlikely to clear the infection, they may continue to have high cell counts, or shed infectious organisms, posing a risk to milkers and other cows.

Always discuss the best approach for dealing with MRSA mastitis with your veterinarian. Your vet can send milk samples to a laboratory to test for MRSA. If MRSA is confirmed your vet may recommend culling infected cows to prevent spread.

3. Can people catch MRSA from infected cows?

Staph aureus, including MRSA, could infect people working with infected cows, particularly during milking. So, talk to your veterinarian about milking hygiene and biosecurity. Simple precautions include:

- avoiding milking if you have wounds or broken skin, or ensuring you protect any skin wounds or broken skin,
- wearing gloves and milking sleeves during milking,
- washing your hands before and after handling animals,
- avoiding smoking, eating and drinking in the dairy parlour, and
- not consuming raw milk from the farm.

Contact your doctor if you think you may have MRSA or are worried about the risks of contracting MRSA. For example, if you or a family member are immunocompromised.

4. Can I sell MRSA-infected cows for slaughter?¹

Requirements for transport and slaughter are the same as for other cows with mastitis. If your cow is showing signs of infection or is unwell, she can't be sent to slaughter. Currently there are not any MRSA specific requirements when selling cows for slaughter.

Remember,

- only send generally healthy cows for slaughter,
- don't transport an animal with an injured, inflamed or diseased udder (clinical mastitis), or lesions on her udder (except a short distance for treatment),
- comply with the withholding periods for any treatments used,
- meet requirements on the Animal Status Declaration, and
- ensure your cow is fit for transport.

¹ MPI is currently undertaking a risk assessment of any possible food safety risks posed by multi-drug resistance organisms in food-producing animals. This advice may be updated once the assessment has been completed.

If you're not sure if you should transport your cow, talk to your veterinarian about whether the cow is fit for transport. You may need a veterinary certificate that states the animal is fit for transport. See www.mpi.govt.nz/animalregs for more information on animal welfare rules when transporting cattle.

5. Can I sell MRSA-infected cows to a new owner?

To reduce the risk of spreading MRSA you should only sell infected cows directly for slaughter (if they meet the requirements listed in point 4 above). However, if you do sell the cows to a new owner, it is strongly advised you tell them they have been diagnosed with MRSA as this may have significant implications for their herd's health. This means they can work with their veterinarian to develop an effective herd-health plan. Likewise, if you are buying cattle, don't forget to take precautions to prevent introducing new infection (see point 8 below for more details).

6. Can I sell MRSA-infected cows' milk?¹

Raw milk from infected cows is not suitable for human or animals consumption, but if clinical signs of mastitis have resolved and applicable withholding periods are met, the cow can still produce milk for sale where it will be pasteurised. Remember the cow may still be infectious and could spread infection to other cows and calves.

If you produce milk for sale, you must make sure you have met all the requirements of:

- your risk management programme (RMP)
- [Animal Products Notice: Production, Supply and Processing](#), and
- Animal Products Notice: [Raw Milk for Sale to Consumers, Regulated Control Scheme](#).

These requirements include identifying infected animals, keeping them segregated from the herd, and withholding milk.

For raw drinking milk suppliers there are specific requirements about testing that must be followed before milk can be sold again. If you're not sure when it's okay to sell milk, discuss these requirements with your veterinarian, MPI or your verifying agency.

7. Will MRSA spread to other cows in the herd?

MRSA, like all *Staph aureus* infections, can spread to other cows and calves in your herd. Your veterinarian may recommend you cull the infected cow to prevent the infection spreading. Talk to your veterinarian to make sure you are applying infection-prevention and control strategies, such as:

- isolating infected cows and milking them last,
- using appropriate cleaning and disinfection after handling infected cows,
- wearing gloves and milking sleeves to milk cows,
- using teat spray after every milking, and
- not using milk from infected cows to feed calves and consider pasteurising calf milk.

Review your milking hygiene practices with your veterinarian including:

- application of teat antiseptics,
- mastitis-treatment protocols,
- milking-machine settings and function, and
- teat end scoring.

8. How can I prevent MRSA infection in my cattle?

Talk to your veterinarian about infection-prevention and control strategies. Always use antibiotics exactly as prescribed, dispose of unused antibiotics and packaging carefully, and wash hands after treating or handling animals.

People who are aware they have an infected wound (especially an antibiotic-resistant infection) should either avoid contact with animals or take extra precautions to prevent spreading infection. People who are in contact with animals should make sure they cover any open wounds.

If you are buying cows, get a thorough history- including any treatment and herd test information. Ask for any antimicrobial susceptibility testing that has been undertaken for individual cows or the herd. Using the [DairyNZ pre-purchase checklist](#) is a good idea. Put in place biosecurity measures like quarantining new cows until their milk has been sampled and demonstrated to be uninfected.

9. How did my cows get infected with MRSA?

Staph aureus, including resistant strains, can transfer from cows to people (zoonosis) and from people to cows. The resistant bacterial strain could have spread from other cows, or an infected person handling the cows or equipment. It is possible the resistant strain developed after using antibiotics. Always follow your veterinarian's instructions when administering antibiotics and follow infection-prevention measures for your herd to reduce the risk of antimicrobial resistance developing.

Key points



Isolate infected cows and milk last.
Cull infected cows to prevent spread.
Don't feed infected cows' milk to calves or other animals.



Don't eat or smoke in the cow shed.
Don't drink raw milk from the farm.
Protect wounds and wear gloves.
Wash hands frequently.



Seek veterinary advice.
Manage withholding periods.
Ensure cull cows are fit for transport and healthy for slaughter.



Quarantine and test new cows.
Don't sell or move infected cows to another farm.
Dispose of infected milk carefully.

10. Where can I get more information?

- Contact your veterinarian in the first instance.
- Visit MPI's website to learn more about how MPI is addressing AMR, including surveillance, outreach and training, and antibiotic sales reports
www.mpi.govt.nz/animals/veterinary-medicines-acvm/antimicrobial-resistance/
- [Home killed meat: rules and food safety](http://www.mpi.govt.nz/food-safety-home/food-safety-tips-fishing-hunting-homekill/homekill/#foodsafety-risks-homekill)
www.mpi.govt.nz/food-safety-home/food-safety-tips-fishing-hunting-homekill/homekill/#foodsafety-risks-homekill
- [Animal Products: Production, Supply and Processing Notice](#)
- Animal Products Notice [Raw Milk for Sale to Consumers, Regulated Control Scheme](#)
- [Code of Welfare: Transport within New Zealand](#)
- Dairy NZ pre-purchase checklist
www.dairynz.co.nz/media/q1cnos1p/biosecurity-pre-purchase-checklist-editable.pdf
- Dairy NZ quick tips for managing mastitis
www.dairynz.co.nz/media/ufepunvl/healthy_udder_mastitis_shed_guide_2017_dnz10-207_web.pdf
- [DairyNZ Mastitis Management *Staphylococcus aureus*](#)
www.dairynz.co.nz/media/oozapqwv/mastitis-factsheet-v8.pdf