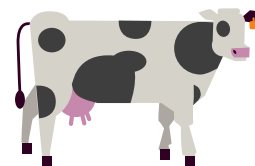


# LEPTOSPIROSIS: Working with dairy cattle



This fact sheet provides information about the risk of leptospirosis infection in people working with dairy cattle.

## KEY POINTS

- > Leptospirosis is easy to catch from an infected animal and its environment.
- > Infection can occur through breaks in the skin or through mucous membranes of the eyes, nose or mouth.
- > Protect yourself, your family and staff by vaccinating your animals, controlling rodents, practicing good personal hygiene, using protective equipment, and seeking help early if you feel unwell.

## WHAT IS LEPTOSPIROSIS?

Leptospirosis is an infectious disease transmitted from animals to humans (a zoonosis), and from animal to animal, through cuts or cracks in the skin or through the mucous membranes of the eyes, nose or mouth. It is present in almost all warm-blooded mammals, including farm, domestic and feral animals.

Leptospirosis spreads easily, and is caused by bacteria known as leptospire that multiply in the kidneys of animals and are shed in the urine. The bacteria thrive in moist or wet conditions and can survive for months.

## HOW ARE PEOPLE INFECTED?

People can catch leptospirosis from infected animal urine. Even a splash or fine spray of urine or indirect contact with urine-contaminated water can spread large numbers of leptospire.

Cuts, sores and skin grazes increase the risk of infection, as does licking your lips and eating or smoking before washing and drying your hands.

## WHAT ARE THE SYMPTOMS IN PEOPLE?

People affected by leptospirosis, either mildly or severely, may not show symptoms.

Infection may just feel like a bad case of the flu, with headaches and fever. Severe cases can result in permanent complications, usually kidney or

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liver damage. Some people may not be able to work for months and, in severe cases, be unable to return to running their farm. The disease can keep coming back.

Pregnant women can miscarry. Death from infection is rare.

### WHO IS AT RISK OF INFECTION?

Anyone working near enough to cattle to be splashed or sprayed with urine or urine-contaminated water is at risk. People at higher risk are those working near the rear of the animal, such as:

- > farmers
- > vets and anyone assisting with calving
- > artificial insemination (AI) technicians
- > people marking calves
- > truck drivers loading stock for transport.

Milking is a high risk activity because of the risk of urine splash on the milker – pit or rotary milking systems have a higher risk than robot/automatic milking systems where there is minimal contact with the cows.

Family members, including children, are at risk if they go barefoot or paddle in contaminated water.

### HOW ARE DAIRY CATTLE INFECTED?

Like other livestock, dairy cattle are infected by grazing pasture or drinking water contaminated with infected animal urine.

Cattle may be at risk of the Pomona serovar (strain) when there are unvaccinated pigs on the dairy farm, and are more likely to be cross-infected with Hardjo or Pomona from sheep through farm management practices like rotational grazing of different stock.

Introduced animals like dairy heifers or a new stud bull may bring infection if not previously vaccinated.



### WHAT ARE THE SYMPTOMS IN DAIRY CATTLE?

Cattle are primary hosts of the Hardjo serovar, which causes minor health effects. They appear to be secondary hosts for Copenhageni, carried by rats, which has the most health impact on calves.

They are secondary hosts of Pomona which can cause severe illness, including:

- > mastitis (inflammation of breast tissue) and loss of milk production
- > abortion storms
- > death (especially in calves).

Acute leptospirosis occurs mainly in calves. Clinical signs may include:

- > fever
- > anorexia (loss of appetite)
- > conjunctivitis.

and more serious illnesses in severe cases.

In adult cattle the first signs of illness in many cases are:

- > reproductive losses (stillbirth or neonatal death, early foetal loss or abortion)
- > sudden decrease in milk production (returning to normal after a few days)
- > jaundice (in severe cases).

Some aborting cows may develop secondary bacterial uterine infections, limiting further pregnancies.

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## HOW DO YOU MANAGE THE RISK AND PROTECT AGAINST INFECTION?

Minimisation is the best option for managing risk, as leptospirosis is difficult to eliminate. This is done through antibiotic treatment, vaccination programmes, awareness, PPE, hygiene and other procedures.

### ANTIBIOTICS

Antibiotics can be used to stop shedding in the short-term.

### VACCINATION

About 90% of dairy farmers vaccinate their breeding stocks, mainly to protect themselves and their workers from infection. Vaccinated herds may keep shedding if vaccination isn't carried out regularly or is left too late.

Farmers should work with their vet to carry out a risk analysis, and then decide whether to vaccinate or not.

**Vaccination is a long-term strategy – it will take time to reduce or eliminate the risk for an infected herd first starting on a vaccination programme. Stopping vaccination will result in herds that are MORE prone to infection and outbreaks.**

#### Calves

Vaccinating pregnant cows will boost maternal protection, providing calves with up to 12 weeks maternal immunity, as long as they receive enough colostrum (antibodies and minerals from the mother before milk production) in their first six hours of life.

Calves are most at risk when maternal protection runs out or wasn't received due to not-enough or too-late colostrum intake, or if the mother's antibody level is low<sup>1</sup>.

Shedding is almost zero when calves are vaccinated before three months old and less likely when calves are first vaccinated before six months old<sup>2</sup>. Therefore, calves should complete their first vaccination course by three months old, before they have a chance to become infected<sup>3</sup>.

- > Vaccinate twice (with 4-6 weeks between injections), giving the first injection 18 weeks after the start of seasonal calving.
- > If calves are to be moved off the property, consult a vet about the need for early vaccination.
- > Vaccinate all young replacement stock before they leave the property for rearing.
- > Bobby calves don't need to be vaccinated.

#### Adult Cattle

- > Vaccinate adult dairy cattle annually. To ensure protection against shedding, don't delay the annual vaccination period beyond 12-13 months. Include ALL cattle.
- > Assume that all bought-in stock is unvaccinated, unless accompanied by a current veterinary vaccination certificate or ASD form<sup>4</sup>.
- > If uncertain, vaccinate all purchased stock twice, starting at least six weeks before entering the property. Where this isn't possible, keep new stock on a separate run-off that won't be grazed by resident stock for at least 12 weeks, or on an area of the farm from which run-off water won't contaminate other pastures.

### AWARENESS

- > Clearly display information that leptospirosis may be a risk in the work area. Make sure new workers and anyone else who will be in close contact with animals, are aware of the risks and what to do before entering the work area.

<sup>1</sup> Heuer, C., et al. (2012). Leptospirosis in New Zealand: *best practice recommendations for the use of vaccines to prevent human exposure*. Massey university, Institute of Veterinary, Animal and Biomedical Sciences.

<sup>2</sup> Heuer, C., et al. (2012). Leptospirosis in New Zealand: *best practice recommendations for the use of vaccines to prevent human exposure*. Massey university, Institute of Veterinary, Animal and Biomedical Sciences.

<sup>3</sup> Heuer, C., et al. (2012). Leptospirosis in New Zealand: *best practice recommendations for the use of vaccines to prevent human exposure*. Massey university, Institute of Veterinary, Animal and Biomedical Sciences.

<sup>4</sup> Ministry of Primary Industries (2007). *Animal Products Act 1999 Information Pamphlet*. Retrieved 18 March 2015 from: [www.foodsafety.govt.nz/elibrary/industry/Animal\\_Status-Outlines\\_Purpose.pdf](http://www.foodsafety.govt.nz/elibrary/industry/Animal_Status-Outlines_Purpose.pdf)

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- > Watch for abnormalities or warning signs of infection, eg red-water or a high number of abortions. Consult a vet.

#### **PPE**

- > Wear clean, suitable PPE, especially when milking, calving, loading cattle for transport, doing artificial insemination (AI), and any other task that involves handling animals.
- > Suitable PPE includes overalls; sturdy, closed-toe, water-proof footwear; gloves; face protection; and milking sleeves, aprons and gumboots in the milking shed.
- > Change gloves or boots immediately if they split or leak.

#### **HYGIENE**

Personal hygiene is good additional protection.

- > Wash with disinfectant after milking.
- > Wash your hands regularly, using water, soap, and disinfectant – especially after using the toilet or handling livestock, and before eating, drinking, smoking, or taking a break. Wash your face if you have facial hair.
- > Use disposable towels only.
- > Don't scrub your hands harshly as it may cause breaks in the skin.
- > Don't touch your eyes, nose or mouth before washing your hands.
- > Cover cuts, grazes, blisters and skin breaks with waterproof coverings, and change coverings regularly.
- > Make sure deeper wounds are fully healed before working closely with livestock.
- > Don't smoke, drink or eat when handling livestock, as this can introduce bacteria into the mouth. Keep coffee mugs away from the work area.

- > Wash your clothes after handling stock.
- > Keep toilets and hand-washing facilities clean.

#### **FURTHER CONTROLS**

- > If pigs are kept on the farm, make sure they're vaccinated and keep them and their effluent separately contained and not accessible to cattle. If not vaccinated prior to arrival, then treat with antibiotics and vaccinate on arrival.
- > Make sure all introduced animals have a current veterinary certificate of vaccination or ASD form<sup>5</sup>. If not certain, then isolate, medicate and vaccinate.
- > Keep areas around milking sheds well maintained to prevent stagnant water settling.
- > Hose down all milking facilities and yards after each use.
- > Take extra care when using high-pressure wash-down, ie don't breath in water spray, wear a mask and direct spray away from people.
- > Provide stock with reticulated water from a low risk source (eg rainwater).
- > Fence or keep stock away from effluent ponds, sumps and waterways.
- > If possible, avoid spraying pastures in the wet season with effluent stored in ponds.
- > If possible, let pasture sprayed with effluent dry out before grazing.
- > Make sure effluent disposal tanks are properly sealed and drained.
- > Control rodents and possums, keeping them away from stored food and other crops – make sure no excess feed is lying around, eg calf meal.

<sup>5</sup> Ministry of Primary Industries (2007). *Animal Products Act 1999 Information Pamphlet*. Retrieved 18 March 2015 from: [www.foodsafety.govt.nz/elibrary/industry/Animal\\_Status-Outlines\\_Purpose.pdf](http://www.foodsafety.govt.nz/elibrary/industry/Animal_Status-Outlines_Purpose.pdf)

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## ANIMAL STATUS DECLARATION (ASD) FORM

The Animal Status Declaration (ASD) form is a standardised form used to transfer key information about animals to the next person in charge of them, and eventually to the processor. An ASD form must be completed for:

- > all cattle sent for processing
- > the movement of all cattle from one property or saleyard to another, or to a property where there is a different person in charge of the animals – even for calves less than 30 days old.

The ASD form must actually go with the cattle being moved. If a form isn't supplied and received, cattle must be either held separately till an ASD is supplied, or be returned to the supplier<sup>6</sup>.

## WATCHING YOUR HEALTH

The sooner treatment starts, the better.

### FIRST AID

A readily available supply of clean water is important.

Look after your health. As soon as there is exposure to urine or infection is suspected:

- > dry off urine splash immediately (leptospires dry out easily), then wash the area
- > wash your hands and face well, taking particular care with facial hair
- > use soap and water, and dry well
- > flush out your mouth and eyes, and any exposed skin with lots of running water
- > wash out fresh or old cuts and grazes with water and disinfectant, and dry well
- > tell a supervisor.

## PRIMARY CARE TREATMENT

- > See a doctor within 24 hours of suspected exposure or if flu-like symptoms develop, to get antibiotic treatment and have a blood sample taken.
- > Tell the doctor that leptospirosis may be the cause of your illness – some doctors may not be familiar with the symptoms.
- > The blood sample MUST be taken before medication is taken, and a subsequent sample may be needed 3-4 weeks later.
- > Treatment options will depend on the severity and duration of the symptoms. Antibiotic treatment should be given if leptospirosis infection is strongly suspected.
- > All patients with severe infection or signs of meningitis should be sent to hospital immediately.

## FINDING OUT MORE

[Good Practice Guide: Prevention and Control of Leptospirosis](#)

Further information regarding Leptosure – a New Zealand Veterinary Association quality assurance programme – is available from vets or from: [www.leptosure.co.nz](http://www.leptosure.co.nz)

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<sup>6</sup> Ministry of Primary Industries (2007). *Animal Products Act 1999 Information Pamphlet*. Retrieved 18 March 2015 from: [www.foodsafety.govt.nz/elibrary/industry/Animal\\_Status-Outlines\\_Purpose.pdf](http://www.foodsafety.govt.nz/elibrary/industry/Animal_Status-Outlines_Purpose.pdf)

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