

Leptospirosis

What is Leptospirosis?

Leptospirosis, also known as red water disease in cattle and Weil's disease in humans, is one of the most common occupationally-acquired diseases in New Zealand caught from animals and one of the most common diseases transmitted from animals to humans (zoonoses).

The infectious agent is a leptospira belonging to the species *leptospira interrogans* which is divided into over 200 serovars. Eight different types (serovars) of leptospirosis have been identified in New Zealand.

Occurrence in New Zealand

From research data published in 1992, about 90% of leptospirosis serovars in New Zealand are found in cattle (beef and dairy) and pigs. The other 10% come from a range of other domestic and feral animals, e.g. rats and dogs.

Cattle

The prominent serovar is *leptospira hardjo*. In humans, it causes a range of symptoms such as feverish illness with flu-like symptoms and headache. It can result in meningitis and death. Early treatment is vital.

Sheep

Sheep may act as hosts for *leptospira hardjo* and *pomona* as well as secondary hosts for a wide range of serovars. Sheep have been found to excrete *hardjo* for a period of up to 11 months, and can infect humans with the leptospirosis bacteria. OSH acknowledges that the processing of sheep can lead to an increased likelihood of contracting ovine leptospirosis.

Pigs

The main serovar is *leptospira pomona* or less common *leptospira tarassovi*. One or two weeks after infection, pigs become leptosporic (e.g. shed leptospira in their urine). In humans the disease causes a feverish illness with flu-like symptoms and headache.

Rats

Leptospirosis *icterohaemorrhagiae* can be contracted from urine around farm buildings where rats are found or

from still water. It has often proved fatal and good rat control and personal hygiene is essential.

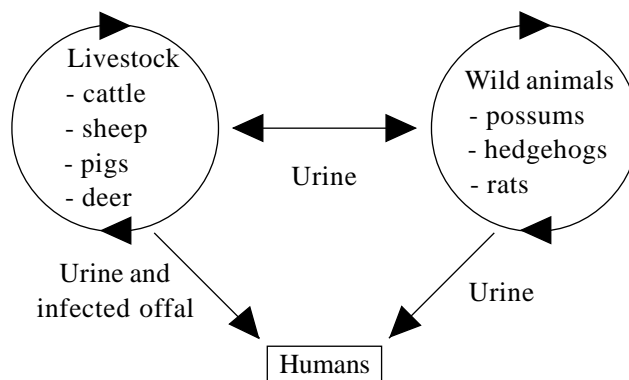
How Does it Spread?

The disease is usually transmitted to people through contact with infected urine from diseased animals and the organism gains entry into the body through broken skin or mucous membranes such as eyes, nose, and mouth. Any contact with contaminated water, moist soil, or vegetation and infected organs, can cause the disease.

The bacteria enter the body in many ways:

- By urine splashes from infected animals through the membranes of the mouth, nose and eyes.

Transmission of leptospirosis from main hosts to humans and domestic animals



Enters through: damaged skin, eyes, nose, mouth.

- Through the skin, especially through cuts, sores and abrasions.
- Through bathing or working in water in which infected stock may have urinated.
- By handling infected material such as organs or offal.
- Through contact with infected livestock, particularly cattle and pigs.
- Through other animals which may be infected such as possums, hedgehogs and rodents.
- Through the mouth by licking your lips, eating and smoking before washing and drying your hands.

Who is at Risk?

Farmers, meat workers, and animal handlers, are the main groups at risk. Of the cases reported, approximately:

- 91.5 cases per 100,000 were farm livestock workers.
- 163.7 cases per 100,000 were meat processing workers.

Other groups at risk are:

- Pig producers
- Meat inspectors
- Veterinarians
- Stock carriers
- Forestry-related workers.

Vaccination

Vaccination is a protection, not a cure. It will reduce the risk of infection to very low levels.

A vaccination programme should always be part of a wider protection strategy. Consult your vet about a vaccination programme for your cattle.

Level of Protection Required

- Vaccinate your cattle so they can't pass the disease on to you.
- Practice good personal hygiene, but avoid harsh scrubbing of your hands as it may cause breaks in the skin.
- Workers involved in occupations where they are required to handle animals should wear appropriate PVC gloves, boots and aprons.
- Cover cuts scratches and abrasions with waterproof plasters.
- Never enter cow sheds or pig sites in bare feet or jandals.
- Isolate aborting animals and seek veterinary advice immediately.
- If pigs are kept on the farm, keep their effluent separately contained and not accessible to cattle.
- Fence off waterways so that animals don't have direct access to them.
- Control rodents.
- Manage effluent disposal.

Health Effects

Those who have developed leptospirosis often think they have had a severe bout of 'flu' with high fevers and intense headaches. Symptoms may last from a few days to a few weeks and can be mild or severe. There may be a combination of one or more of the following symptoms:

- Fever
- Severe and persistent headaches

- Chills and rigors
- Muscular pains
- Eye irritation
- Vomiting
- Loss of appetite
- Sweating
- Jaundice (yellowing or darkening of the skin, whites of the eyes and urine).

A person with leptospirosis can become severely ill and admission to hospital may be required. Early diagnosis and treatment is essential to prevent complications to the kidneys and liver. This illness can result in death.

Many people continue to experience symptoms for some months after they are "cured" e.g. severe headaches, nightmares and fatigue, and a chronic form of the disease is now recognised.

The time between infection and the appearance of symptoms varies between 4 and 19 days. Symptoms may last from a few days to a few weeks. Relapses may occur.

If you become ill, seek medical advice at once for early treatment to prevent complications due to infections of kidney, liver and blood. There is no vaccination for humans.

Leptospirosis is a notifiable disease under the Notifiable Occupational Disease System (NODS).

Instances of employees infected by leptospirosis should be notified to OSH under the notification of serious harm criteria of the HSE Act 1992.

Have You Assessed the Critical Factors for Leptospirosis on the *Critical Factors Chart*?

- Sources of infection
- Exposure to infection
- Vaccination of cattle
- Level of protection required
- Health monitoring.

References

Further information is contained in:

- Health and Safety in Employment Act 1992.
- *Guidelines for the Control of Occupationally Acquired Leptospirosis*
- *Guidelines for the Provision of Safety, Health and Accommodation in Agriculture*, available from OSH.
- *Leptospirosis* information bulletin available from OSH.
- *Farm Health and Safety Manual* available from Federated Farmers.
- *Critical Factors Chart*, available from OSH. (A guide for farmers to manage hazards in the workplace.)