

Melioidosis

Information for animal owners

Disease information

Melioidosis is an infectious disease caused by the bacterium *Burkholderia pseudomallei*.

Melioidosis can infect a wide range of animals, including mammals (livestock and companion animals), wildlife such as birds, reptiles and fish, and can result in death if untreated. Susceptibility to infection varies between species. It is most common in tropical and subtropical regions, including northern Australia, and can affect several species of animals in the Top End of the Northern Territory.

This disease is a zoonosis, which means it has the potential to infect humans. Infection is of particularly high risk for immunocompromised people.

Always investigate suspected cases in animals through examination by a veterinarian or livestock biosecurity officer, owing to the risk to human health.

Cause

B. pseudomallei occurs in soil and surface water in tropical areas. Disease is most likely following heavy rainfall and/or when soil has been disturbed, leading to exposure to bacteria present in the subsoil. The bacteria lives below the soil during the dry season.

Take care when handling potentially infected animals. Animals shed the bacteria through urine, milk and nasal secretions. Avoid drinking unpasteurised milk from an infected animal, as this is a possible source of infection.

Species affected

In the Top End, melioidosis most commonly infects goats, camels and pigs. Other affected species across Australia include cattle, buffalo, horses, mules, deer, camels, alpacas, dogs, cats, dolphins, wallabies, koalas, primates, birds, tropical fish, reptiles and people.

Clinical signs and symptoms

- Melioidosis mimics a number of other diseases, including tuberculosis.
- Early stages of infection often have no notable or classic signs.
- Symptoms vary depending on the location or route of infection, and can include depression, fever, weight loss, lameness and joint swelling, and death.
- Single or multiple curd-like nodules or abscesses can be located in any organ.
- Acute cases in companion animals can cause blood or systemic infection, fever, severe diarrhoea, muscle pain, lameness lethargy and pneumonia, or gastro-intestinal disease.
- Chronic disease may infect any organ. Signs include inappetence, muscle pain, limb swelling or oedema, or skin abscesses.
- Sudden death sometimes occurs from acute sepsis and multiple organ failure.

Species-specific clinical signs

Species affected	Clinical signs/disease presentation
Goats	<ul style="list-style-type: none"> • Respiratory disease, with or without coughing • Mastitis is common. The udder may contain palpable abscesses • Wasting, lameness and hind leg weakness • Abortion
Camelids (camels, llamas, alpacas)	<ul style="list-style-type: none"> • Camelids may develop respiratory disease with coughing, nasal discharge and difficulty breathing • Hind leg weakness, lack of coordination and wasting • Acute disease resulting in sudden death occurs in camels and alpacas
Pigs	<ul style="list-style-type: none"> • Progressive wasting, nervous signs including a lack of coordination, skin ulcers and diarrhoea • Young pigs can develop acute disease with fever, anorexia, coughing and discharge from the nose and eye
Sheep	<ul style="list-style-type: none"> • Respiratory disease is common in sheep with fever, severe coughing, respiratory distress and discharge from the nose and eye • Lameness, joint swelling, neurological signs
Carnivores: (cats, dogs, bears, mongoose)	<ul style="list-style-type: none"> • Respiratory disease with coughing, nasal discharge, difficulty breathing • Hind leg weakness or lack of coordination and wasting • Intestinal disease including abdominal pain and mucosal abscessation • Acute disease resulting in sudden death
Horses	<ul style="list-style-type: none"> • Weakness, wasting, swelling of the limbs, mild colic, diarrhoea, coughing and nasal discharge • Skin infections initially resembling fungal eczema, later becoming papular (blister-like lumps) • Acute disease with high fever, limb swelling, diarrhoea and death
Birds	<ul style="list-style-type: none"> • Relatively resistant to melioidosis • Sporadic cases show lethargy, anorexia and diarrhoea progressing to death
Cattle	<ul style="list-style-type: none"> • Rarely reported in cattle • Signs include fever, difficulty breathing, nervous signs
Primates	<ul style="list-style-type: none"> • Symptoms in non-human primates include septicaemia, wasting and non-healing wounds • Multiple organ infection with disseminated abscesses are common necropsy findings • Differential diagnoses – tuberculosis and chromobacteriosis

Incubation period

- Incubation period (time from infection to showing clinical signs) can range from a few days, to months or years.
- *B. pseudomallei* can remain dormant for many years inside the body before emerging as an active infection.

Diagnosis and post mortem findings

Blood tests can confirm infection. Survival of infected animals is unlikely. Post-mortem examination establishes the provisional diagnosis, which is confirmed by bacterial culture in the laboratory.

Organs most commonly affected include the lungs, spleen, liver, associated lymph nodes and nasal cavities.

The pus-filled lesions vary in size and can be as large as 100mm diameter.

Only veterinarians or livestock biosecurity officers, using appropriate PPE, should examine suspect cases at post mortem. This approach will minimise the risk of infection to humans.

Figure 1: Cut section of an animal liver, showing multiple melioidosis abscesses



Treatment

- Contact your local private veterinarian and/or regional Territory Government departmental veterinary officer
- Melioidosis has the potential to be a fatal disease. Treatment requires long-term antibiotic use and is rarely attempted in animals.
- Owing to human health risks, affected animals should be euthanised.

Prevention

- Prevention is difficult due to the nature of the disease.
- Raise animals off the soil, avoid exposure to muddy or water-inundated regions.

- Provide clean drinking water via chlorination or filtration.
- Minimise environmental contamination by diseased animals.
- There is no effective vaccine available.

Zoonotic risk

Human recommendations:

- Melioidosis is a zoonotic disease.
- Contact your local doctor or emergency department to request further testing after potential exposure.
- Use a mask when hosing out stables or pens that have housed infected animals.

Livestock Biosecurity Branch contact details

Darwin Region

Veterinary Officer

P: 08 8999 2035, M: 0427 003 600

Regional Livestock Biosecurity Officer

P: 08 8999 2034, M: 0401 115 802

Katherine Region

Veterinary Officer

P: 08 8973 9716, M: 0437 527 372

Regional Livestock Biosecurity Officer

P: 08 8973 9767, M: 0467 740 233

Livestock Biosecurity Officer

P: 08 8973 9765, M: 0427 604 002

Tennant Creek Region

Principal Livestock Biosecurity Officer

P: 08 8962 4458, M: 0401 113 445

Regional Livestock Biosecurity Officer

P: 08 8962 4492, M: 0457 517 347

Alice Springs Region

Veterinary Officer

P: 08 8951 8181, M: 0401 118 181

Regional Livestock Biosecurity Officer

P: 08 8951 8125, M: 0401 118 125