

# Brucellosis (*Brucella suis*) in pigs

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Animal Biosecurity and Welfare, NSW DPI

## Introduction

Brucellosis is a disease caused by infection with a type of bacteria (*Brucella*). This disease is common in many parts of the world, but it is rare in Australia. *Brucella* bacteria infect a range of animals. *Brucella suis* usually infect pigs. *Brucella suis* infection is widespread in Queensland's feral pig population and it has also been detected in the feral pig population in northern New South Wales (NSW).

Brucellosis (*Brucella suis*) in pigs is also called porcine brucellosis.

*Brucella suis* can be transmitted to people. Feral pigs are the usual source of infection for people, particularly when there has been contact through breaks in the skin with the tissues and body fluids of an infected pig e.g. blood, urine, uterine discharges and aborted foetuses. Uncommonly, bacteria can be inhaled and cause disease, such as in laboratory workers who work with *Brucella suis* cultures. The infection is very rarely transmitted from person-to-person. Call your local public health unit on 1300 066 055 or see the [human brucellosis control guideline](#) for further information.

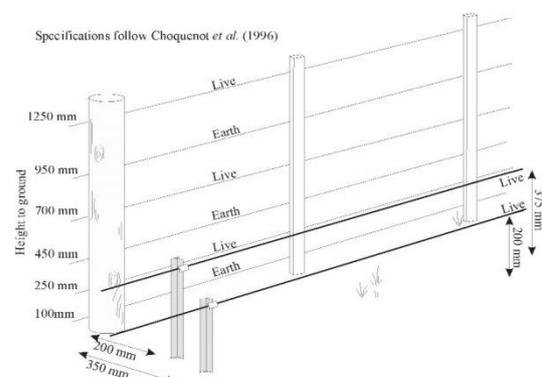
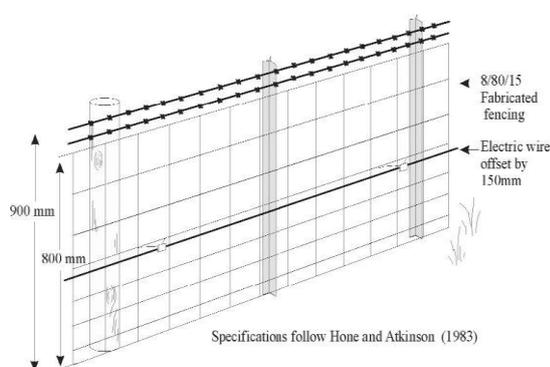
Brucellosis (*Brucella suis*) has also been detected in dogs. Further information is available at [www.dpi.nsw.gov.au/biosecurity/animal/humans/brucellosis-in-dogs](http://www.dpi.nsw.gov.au/biosecurity/animal/humans/brucellosis-in-dogs).

## Transmission

The most likely method of entry of *Brucella suis* into a domestic pig herd is through contact with feral pigs. Good biosecurity is important to limit contact between feral and domestic pigs and includes building pig-proof perimeter fences (see photos below). Local feral pig numbers can be controlled by trapping, shooting and/or baiting. Check with your Local Land Services (LLS) for advice on options to control feral pigs in your area or visit [www.lls.nsw.gov.au](http://www.lls.nsw.gov.au).

**Note:** it is an offence to transport, keep or release live feral pigs, and any suspect behaviour should be reported to your local LLS office or the police.

Photo: Pig-proof fencing



*Brucella suis* is generally transmitted to pigs after ingestion of contaminated reproductive material – usually birth and/or abortion products and uterine discharges. Infection can also spread during natural

mating or artificial insemination with infected semen. *Brucella suis* can circulate in the bloodstream of infected pigs for up to 90 days. Some pigs recover from infection, while others remain permanently infected. Boars that develop infections of the reproductive tract seldom recover.

Pigs can become infected with *Brucella suis* after eating contaminated feed, water, manure, wool, and hay. *Brucella suis* can also be spread on contaminated equipment and clothing. Under ideal conditions of low temperature, high humidity and no sunlight, *Brucella suis* can survive for several months in the environment.

## What are the symptoms in pigs?

The time between infection and the appearance of symptoms can range from one week up to two months. Signs that a pig herd has become infected with *Brucella suis* are mainly those of reproductive failure – abortions, returns-to-service after mating and the birth of weak or stillborn piglets. Some sows may develop an infection of the uterus and show a vaginal discharge. Infected boars may develop swollen, inflamed testicles (see photo below). Pigs may become lame with swollen joints and/or develop signs of incoordination and hind leg paralysis.

Figure 1 – Boar with a swollen, inflamed testicle



## Diagnosis in pigs and other animals

There is no direct serological test available for *Brucella suis*. However, *Brucella abortus* is exotic to Australia and this bacterium can be used as an antigen to detect *Brucella suis*. The Rose Bengal test (RBT) is the screening test in all species. Positive and inconclusive results are subsequently tested with the confirmatory complement fixation test (CFT). Negative RBT results, but with a strong clinical picture and history suggestive of *Brucella suis* infection will also be tested with the CFT. Domestic pigs in NSW will be re-tested in six weeks if both the RBT and CFT tests are inconclusive.

The RBT is a more sensitive serological test compared to the CFT. The CFT is a more specific serological test compared to the RBT. Neither test is 100% accurate. A diagnosis of porcine brucellosis in a domestic pig herd in NSW will not rely solely on laboratory serological tests. The clinical picture and history will also be important considerations.

*Brucella suis* infection can be confirmed by bacterial culture from tissues or fluids e.g. testicle, semen.

Specimens required for laboratory testing include:

- Serum samples (not blood) submitted chilled for serology (RBT and CFT)
- Tissues or fluid submitted chilled for bacterial culture
- Aborted foetuses submitted whole for bacterial culture

Specimens should be sent to the NSW Department of Primary Industries (DPI) Laboratory Services, Elizabeth Macarthur Agricultural Institute, Woodbridge Road, Menangle NSW 2568. A specimen submission form must accompany specimens submitted to the laboratory. The laboratory can be contacted on 1800 675 623 and [emai.svdl@dpi.nsw.gov.au](mailto:emai.svdl@dpi.nsw.gov.au) for further information.

## Control and prevention

No vaccine is available for the control of *Brucella suis* infection in pigs.

Prevent feral pigs from contacting domestic pigs by erecting pig-proof fences and controlling local feral pig populations.

## NSW legislation

Brucellosis (*Brucella suis*) is a notifiable disease in pigs and other animals under NSW legislation. This means there is a legal obligation to notify authorities if you know or suspect that an animal has this disease.

You can report suspected or confirmed brucellosis (*Brucella suis*) in animals in one of the following ways:

- phone your [Local Land Services](#) on 1300 795 299; or
- contact a [NSW Department of Primary Industries](#) veterinarian or regulatory officer.

There are restrictions preventing the uncontrolled movement of pigs from Western Australia and the Northern Territory north of the Tropic of Capricorn, and Queensland into NSW on account of *Brucella suis*. Visit <http://www.dpi.nsw.gov.au/animals-and-livestock/pigs/health/a-z-pig-diseases/brucellosis> for further information.

## More information

- For biosecurity general enquiries, phone 1800 680 244.
  - For updates go to [www.dpi.nsw.gov.au/factsheets](http://www.dpi.nsw.gov.au/factsheets).
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Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (February 2017). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of the Department of Primary Industries or the user's independent advisor.

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