

Notice to Veterinarians- Brucellosis testing of dogs in the Northern Territory

Current situation

Brucella suis (*B.suis*) is a zoonotic disease widespread in feral pig populations throughout Queensland and northern New South Wales. *B. suis* has not been detected in the Northern Territory feral pig population but it is suspected to be present. *B. suis* is transmitted to dogs during pig hunting activities and by feeding raw feral pig meat and by-products. It is suspected that young dogs with no history of pig hunting may contract *B. suis* at the time of birth from an infected bitch. Infection may also be passed between dogs during mating and close contact.

Brucellosis presents a major zoonotic risk for people in contact with infected dogs. The Northern Territory Department of Primary Industry and Resources (DPIR) and the Berrimah Veterinary Laboratory (BVL) are seeking to establish if *B. suis* is present in the Northern Territory dog and pig population.

Private veterinarians who are presented with dogs or pigs with suspected clinical signs and a history of associated risk factors are asked to submit samples to the BVL for *B. suis* exclusion testing.

Clinical signs

Dogs and pigs presented with *B. suis* may remain bright and alert and show no obvious clinical signs of infection. The range of symptoms may include:

- Enlarged testicles/ prostate/lymph nodes
- Fever
- Back pain
- Vomiting
- Lameness
- Haematuria
- Lethargy
- Abortion

Sampling and testing

Testing of suspected canine and porcine cases of *B. suis* is being offered by BVL at no charge when appropriate case history is provided.

Of particular interest are dogs with a strong case history of pig hunting, exposure to feral pig carcasses or interaction/offspring of pig dogs who present with clinical signs suggesting infection by *B. suis*.

Diagnosis of *B. suis* infection is determined using a combination of serological tests, history and clinical signs.

Samples to be collected for submission:

- Whole blood or serum submitted chilled for Rose Bengal Test (RBT) and Complement Fixation Test (CFT)
- Fresh chilled tissue for bacterial culture -Entire testicles or entire uterus from suspected animals undergoing castration/spay or aborted pups from suspected animals.

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Submitting samples:

All samples can be submitted **in person** to BVL reception during office hours Monday to Friday.

- Blood for serology must be submitted as whole blood in a serum tube or serum in a vial in a zip-lock bag. The accompanying paperwork must be outside the bag and clearly indicate that the sample is for ***Brucella Serology***.
- Tissue (testis, uterus, aborted pups) **MUST** be packaged in crush-proof sterile plastic jar then placed in a zip-lock bag, within an esky with ice bricks that is taped shut. The accompanying paperwork must remain outside and both the esky and paperwork clearly labelled the sample is for ***Brucella Exclusion***.

BVL should be notified in advance when submitting tissue samples for referral bacterial culture

Please contact BVL specimen reception for advice **before** any samples are sent **via courier**.

Phone: (08) 8999 2249 Fax: (08) 8999 2024 bvl@nt.gov.au

Owners should be encouraged to confirm infection by culture and this will allow the DPIR to exclude the exotic *Brucella* organisms. This work is undertaken by the Australian Animal Health Laboratory in Geelong under P3 conditions and a final result may take some weeks.

It should be emphasised that negative serology is not necessarily diagnostic, as recently exposed dogs may not be antibody positive to *B. suis* at the time of testing. Retesting of inconclusive cases is recommended 6 weeks later to confirm the result.

Zoonotic risks

Veterinary clinics should review their current risk management systems to including the use of Personal Protective Equipment (PPE) by staff exposed to urine, saliva and reproductive materials of potentially infected dogs. Dogs may act as mechanical carriers by shedding *B. suis* in their faeces after ingesting infected birth products. PPE should be utilised to minimise the risk of *B. suis* exposure to humans and uninfected animals.

Veterinarians should be aware of the following to help protect themselves and their staff from Brucellosis:

- Pig hunters and their dogs often travel long distances to hunt pigs. Infected animals from Queensland and NSW may be presented at your clinic.
- Dogs with no history of pig hunting may be infected due to eating raw feral pig meat, scavenging, close contact and mating with infected dogs.
- Reproductive organs, reproductive fluids and aborted foetuses from infected dogs may carry high numbers of *Brucella* organisms.
- *Brucella* organisms may also concentrate at various other sites including joints and spinal disks.
- Infected dogs may initially be serologically negative to *B. suis*. A thorough clinical history and examination is vital.
- Pregnant women may be at higher risk of infection.

Veterinarians and staff handling and treating pig hunting dogs should protect themselves with minimum PPE of:

- Eye protection
- P2 mask
- Disposable overalls
- Gloves
- Enclosed footwear

Personal hygiene standards should well be maintained. Care should be taken when examining potentially infected animals, collecting blood, neutering, treating wounds, assisting in whelping and performing caesareans on pig hunting dogs.

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Clinical signs in humans

Infected dogs are a potential source of infection for people. The infection in people can present as non-specific influenza like symptoms such as:

- intermittent fever
- sweating
- lethargy
- headaches
- muscle soreness
- back ache
- Joint pain.

The onset of clinical signs usually occurs 5-60 days after exposure but can occasionally present several months later. Treatment may be required.

Veterinary recommendations for owners of dogs diagnosed with *Brucella suis*

Owners are advised to contact Centre for Disease Control (CDC) on 1800 008 002 for advice on protecting themselves from the zoonotic risk posed by infected dogs.

Owners should be advised on reducing zoonotic risk by keeping infected dogs in isolation away from other dogs and people, de-sexing, treating with antibiotics or humane euthanasia.

Other in contact dogs should be tested to determine their *B.suis* status.

Further information

***Brucella suis* is a notifiable disease in the Northern Territory and must be reported to the Chief Veterinary Officer on 8999 2130**

References:

DR James; G Golovsky; JM Thornton; L Goodchild; M Havlicek; P Martin; Krockenberger; DJE Marriott; V Ahuja; R Malik and SM Mor (2017) Clinical management of *Brucella suis* infection in dogs and implications for public health Australian Veterinary Journal. Volume 95, No 1-2 pp19-25

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