Swine brucellosis (Brucella suis)

Swine brucellosis is an infection caused by the bacteria *Brucella suis (B. suis)*. While *B. suis* usually affects pigs, it is a zoonotic disease which can cause serious illness in people. It can be potentially fatal.**Infection with *B. suis* is a notifiable disease, and must be reported to the Chief Veterinary Officer.**

Other species of the *Brucella* bacteria can cause different types of brucellosis. Australia is free of *Brucella abortus*, *Brucella melitensis* and *Brucella canis.* Bovine brucellosis (caused by *Brucella abortus)* was eradicated from Australia in 1989 as a result of a national eradication program.

Distribution

B. suis has been detected in feral pigs in the Northern Territory (NT). It is widespread in Queensland's feral pig population, and has also been detected in the feral pig population in northern New South Wales.

Affected animals

Pigs, cattle, horses, dogs and humans.

Clinical signs

- **Pigs** will general show signs of reproductive failure, piglet mortality or swollen testicles.
- **Dogs** can remain bright, alert and show no obvious signs of infection. Clinical signs include fever, swollen testicles, back pain, lameness, vomiting, lethargy, haematuria, and abortion.
- **Cattle and horses** may pick up infection from open waters frequented by feral pigs. There are no specific clinical signs associated with *B. suis* infection. However, both cattle and horses may react positively to brucellosis testing due to infection with *B. suis*. A positive test result for Brucella in cattle, typically during a herd fertility test, must be investigated to ensure that it has not been caused by *Brucella abortus* (bovine brucellosis), which is exotic to Australia.
- **Humans** The incubation period in people is variable from 5 days to months but averages 2 weeks. Weakness, fatigue and exhaustion are common with fever, head and body pains and mental depression. Anyone who suspects they may have been infected with *B. suis* should contact their doctor. Recovery can take up to 12 months, but antibiotics shorten the disease course.

How it is spread

The main source of infection is infected pigs. Boars can pass the disease on during mating, and spread can also occur by the ingestion of food and water contaminated with urine, placenta and discharges from infected sows. The organism can survive in faeces, urine and water for 4-6 weeks and much longer in freezing conditions. Direct sunlight will kill the organism quickly.

Infected dogs are a potential source of infection for people, via contact with urine, saliva and reproductive materials. Dogs may also act as mechanical carriers by shedding *Brucella* in the faeces after ingesting infected aborted foetuses or placentas.

In humans, *B. suis* mainly affects abattoir workers, pig farmers and feral pig shooters. Humans can contract the disease through skin, conjunctiva and by ingestion. Killing and slaughter of feral pigs can increase the

risk of human infection unless strict hygiene measures are taken. Infection can occur from contaminated meat during preparation, cooking and serving of feral pig meat.

Monitoring and action

Veterinarians can submit whole blood or serum for serology and fresh, chilled tissue (eg. entire testicle, uterus or aborted foetuses) for bacterial culture. Tissue specimens should not be sliced open as this may increase the risk of human infection. Please ensure the submission is clearly labelled "Brucella exclusion", all samples are double bagged and accompanying paperwork remains outside the sample container.

Control

Control of *B. suis* in feral pigs is not possible, and treatment of domestic pigs is not considered practical.

Treatment for infected dogs includes a long course of antibiotic therapy and desexing to reduce the risk of spread to people or other animals. Treatment is not always successful, and in some cases dogs will relapse. Humans are treated with extended courses of antibiotics.

Prevention

Pig owners

- Prevent the entry of feral or other infected pigs onto your property.
- If you notice reproductive disease or swollen testicles in your pigs, contact a veterinarian.
- When handling pigs, cover all cuts and abrasions with waterproof dressings, wear enclosed, waterproof footwear, use good personal hygiene and wash your hands regularly.
- When handling pregnant or sick pigs, or butchering pigs, wear extra Personal Protective Equipment (PPE) including gloves and eye protection, and practice safe slaughtering methods.

Pig hunters

- When hunting, cover all cuts and abrasions with waterproof dressings, wear enclosed, waterproof footwear, use good personal hygiene and wash your hands regularly.
- Clean and disinfect work areas and vehicles after a hunt.
- If butchering feral pigs take extra precautions including wearing gloves and eye protection. If a pig looks sick, do not handle or butcher it.
- Always cook game meat thoroughly, and do not feed raw feral pig meat to your dogs.

Veterinarians and veterinary staff

- When handling pigs and pig hunting dogs, wear PPE, including gloves and eye protection, and use good personal hygiene
- Particular care should be taken when treating wounds, collecting blood, neutering, assisting with whelping or reproductive problems and performing caesareans on pig hunting dogs.
- A safe work method statement for collecting samples for B suis testing is available from the NSW Department of Industry.