

Canine Brucellosis: *Brucella canis*

Contagious Abortion,
Undulant Fever

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Importance

Canine brucellosis, caused by *Brucella canis*, is an important cause of reproductive failure, particularly in kennels. *B. abortus* causes abortions, stillbirths, epididymitis, orchitis and sperm abnormalities in dogs. Canine brucellosis can end the reproductive career of a breeding animal. *B. canis* is zoonotic, although disease appears to be rare in humans.

Etiology

In dogs, brucellosis is mainly caused by *Brucella canis*, a Gram-negative coccobacillus or short rod. This organism is a facultative intracellular pathogen. Other *Brucella* species occasionally associated with disease in dogs include *Brucella abortus*, *B. melitensis* and *B. suis*. (For information on these organisms, see the factsheets titled "Bovine Brucellosis," "Ovine and Caprine Brucellosis," and "Porcine Brucellosis" respectively.) Genetic and immunologic evidence suggests that all members of the genus *Brucella* are closely related, and some microbiologists have proposed that this genus be reclassified into a single species (*B. melitensis*), which contains many biovars. This proposal is controversial, and both taxonomic systems are currently in use. The multiple species nomenclature is used in this factsheet.

Species Affected

Dogs are the only species known to be affected by *B. canis*; however, antibodies to this organism have been found in other carnivores. Experimental infections can be established in domesticated livestock and chimpanzees; however, these species are considered highly resistant to natural exposure. *B. canis* is zoonotic, but human infections seem to be uncommon.

Geographic Distribution

B. canis has been reported from the United States (particularly the southern states), Canada, Central and South America (including Mexico) some European countries, Tunisia, Nigeria, Madagascar, Malaysia, India, Korea, Japan and China. *B. canis* is probably found throughout most of the world; however, New Zealand and Australia appear to be free of this organism.

Transmission

B. canis occurs in the fetus, placenta, fetal fluids and vaginal discharge after an abortion or stillbirth. This organism can be found in vaginal discharges for 4 to 6 weeks after an abortion. It is also shed in normal vaginal secretions, particularly during estrus, as well as in milk. High concentrations of *B. canis*

B. canis can also be spread on fomites. In conditions of high humidity, low temperatures, and no sunlight, *Brucella* spp. can remain viable for several months in water, aborted fetuses, feces, equipment and clothing. *Brucella* species can withstand drying, particularly when organic material is present, and can survive in dust and soil. Survival is longer when the temperature is low, particularly when it is below freezing.

Humans usually become infected with *Brucella* spp. by ingesting organisms or by the contamination of mucous membranes and abraded skin. Infection with *B. canis* seems to require close contact with infected dogs or contact with bacterial cultures.

naturally rough (R) or mucoid (M). Repeated cultures may be necessary to detect *B. canis*.

Polymerase chain reaction (PCR) assays are available in some laboratories.

Samples to collect

***B. canis* is zoonotic; samples should be collected and handled with all appropriate precautions.**

Blood cultures are often used to detect *B. canis*. Bacteremia usually develops two to four weeks after infection, and can persist in some dogs for up to five years and

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Data Sheets
<http://www.phac-aspc.gc.ca/msds-ftss/index.html>
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