



Brucella canis Surveillance for Animal Shelters

Last updated November 2021

- * Veterinary evaluation should be done to rule out other potential causes of symptoms.
 - ** A symptomatic animal that is:
 - RSAT positive after 30-60 days but 2ME negative, or ELISA negative may be a chronically infected animal. If symptoms cannot be explained by anything else, another RSAT/2ME, or ELISA test after an additional 30 days, PCR testing, or serial blood cultures to diagnose a bacteremia is recommended.
 - **RSAT/ELISA negative after 30-60 days is considered negative.**
 - *** An asymptomatic animal that is RSAT/2ME or ELISA positive after a 30 day quarantine is considered positive.
 - **** Positive animals can be managed in 2 ways: euthanasia (recommended), or treatment with antibiotics, retest and disclosure to adopters about the diagnosis.
- Inconclusive-If the animal has discordant serology results (+RSAT/-2ME, or +2ME/-ELISA), hold and retest

Supplemental Information

- At this time, we consider high risk to be animals that are sourced from Roosevelt or Valley Counties or any pregnant dog with an unknown breeding history.
- Symptomatic includes the presence of one or more of the following: lameness that cannot be attributed to another cause, generalized pain, uveitis, orchitis (inflamed testicles), recent history of abortion, reproductive failure
- The RSAT test is used as the initial antibody screening test. It is 70% sensitive and 80% specific. Because of the 70% sensitivity, this test can miss 30% of positive cases (false negatives). Because of the 80% specificity, this test can call 20% of non-infected dogs, positive (false positives).
- The 2ME-RSAT is only run if the RSAT is positive. This test is 99-100% specific. Because of the 100% specificity, this test is used to identify only animals that have antibodies to *B. canis*. In other words, the false positive rate of this test is 0-1%.
- The RSAT and 2ME-RSAT are run as a series (one after another) because the first test is more sensitive (more likely to catch a positive) and the second test is more specific (able to identify a true positive from a false positive).
- In the event that an animal needs a re-test, it is important that the tests used for the second round of testing are the same as those used the first time.
- A 30-60-day hold may be requested if the animal has not yet seroconverted (developed antibodies post-infection) or is fluctuating between seropositive and seronegative status. The 30-60 day period is a recommendation of the test manufacturer and is consistently applied in other states and academic institutions. The hold should include management of dog as a *B. canis* suspect including appropriate control measures to minimize the risk of disease transmission.
- It is difficult to consider a dog cured of *B. canis*. This bacterium can sequester within a dog's body, especially during antibiotic treatment, making it hard for the antibiotic to penetrate certain locations and rid the dog of all the bacteria. The animal can also fluctuate production of antibodies because the bacteria is inconsistently present to the immune system. Negative culture results will never suggest the animal is no longer infected. Multiple negative antibody tests run at a time when the animal is not being administered antibiotics will be required before the animal is considered negative. Testing protocols to categorize and animal free of infection, after a previous positive diagnosis, will be determined on a case-by-case basis.

