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Caudal-fold Tuberculin Test

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Caudal-fold Tuberculin Test

The caudal-fold tuberculin (CFT) test is the primary screening test used to identify cattle herds potentially infected with bovine tuberculosis. Since it is a screening test, results are not considered absolute proof that an animal or herd has bovine TB. Therefore, it is used to identify animals and herds that need to undergo further testing for bovine TB.



The caudal-fold tuberculin test can be performed only by a USDA-accredited veterinarian, including accredited private practitioners. The CFT test measures the immune response to *Mycobacterium bovis*, the bacterium that causes bovine tuberculosis (TB).

The test is performed by injecting 0.1ml of USDA Purified Protein Derivative

(PPD) tuberculin (a bovine TB protein) within the layers of skin of the caudal tail fold using a very small needle. The caudal tail folds are two folds of skin located underneath the base of the tail. The test is "read" by the same veterinarian 72 hrs (+/- 6 hrs) after the tuberculin is administered. The injection site is inspected by both visual observation and palpation for indications that the animal has mounted an immune response to the PPD. If the animal's immune system recognizes the PPD, inflammatory cells (white blood cells) migrate to the injection site to help get rid of the foreign material (PPD). This is called a cell-mediated immune response. This response can be recognized by swelling or discoloration at the site where the PPD was injected. If any abnormalities such as discoloration or swelling are found at the injection site, the animal is classified as a CFT test responder (also known as suspect). This means the animal has



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mounted an immune response capable of recognizing *Mycobacterium bovis*. If no response is noted, the animal is classified as CFT test-negative.

Caudal-fold Tuberculin Test Responder

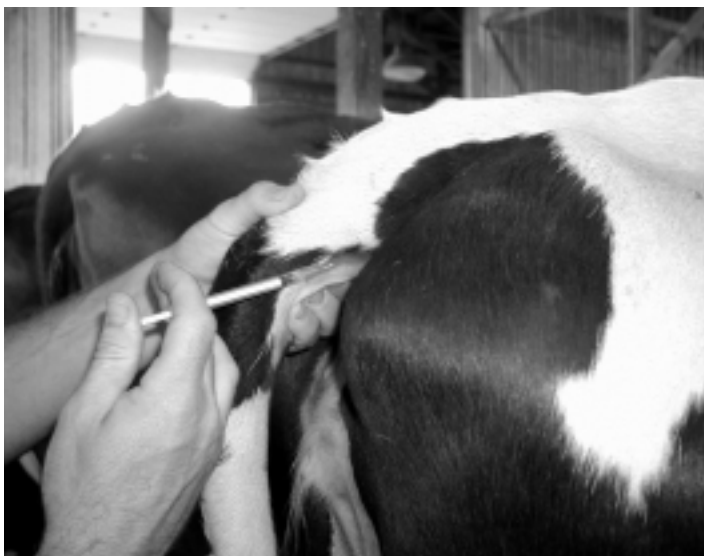
A response to the CFT test indicates that the animal has mounted an immune response capable of recognizing *Mycobacterium bovis*. Although the response may be caused by infection with *Mycobacterium bovis*, exposure to or infection with other closely related bacteria, such as *Mycobacterium avium* (avian tuberculosis) and *Mycobacterium paratuberculosis* (Johne's disease), could also cause a CFT test response. This is referred to as a false-positive test. It is expected that false-positive results on the CFT test will occur in a normal population approximately 5 percent of the time. This means that in a herd of 100 cattle, it can be expected that 5 animals will respond to the CFT test and not be infected



with bovine tuberculosis. In herds that have increased exposure to *Mycobacterium avium* (avian tuberculosis) or *Mycobacterium paratuberculosis*, the response rate may be greater than 5 percent. In most cases, these animals will be found free of bovine tuberculosis when tested using the more definitive followup test called the comparative cervical tuberculin test.

Quarantine

If an animal is classified as a responder, the herd is immediately quarantined and appropriate regulatory veterinarians must be notified. Cattle that are classified as responders based on the CFT test must be retested by a state or regulatory veterinarian using the comparative cervical tuberculin (CCT) test. The CCT test must be performed within 10 days of the initial CFT test injection (7 days of reading the CFT test results). If the ani-



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mal is not tested within 10 days, the CCT test can not be performed until 60 days after the initial CFT test injection. Until the comparative cervical tuberculin test is completed, the herd remains under quarantine.

Caudal-fold Tuberculin Test-Negative Animal

Any animal that does not have an observable or palpable response on the CFT test is classified as CFT test-negative and requires no further testing. Most animals that do not respond to the CFT do not have bovine TB. However, animals infected with bovine tuberculosis may be falsely classified as negative by this test. This is called a false-negative test. Reasons for a false-negative CFT test may include infection with another disease that prevents a proper immune response to bovine TB, an animal that is in a very early stage of infection with bovine TB, or a problem with the test administration occurred. It is estimated that animals truly infected with bovine tuberculosis will be called negative by the CFT test 15 percent of the time.