

Caudal Fold Test (CFT) for Detection of Bovine Tuberculosis (TB)

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The State-Federal Cooperative Bovine Tuberculosis (TB) Eradication Program is now in its 96th year, and although the national herd prevalence has dropped dramatically since the program's inception, eradication efforts have not eliminated the disease from the United States. Many factors contribute to the current situation regarding Bovine TB in the U.S., and some variation exists depending on US cattle herd demographics. Although the primary focus of Bovine TB surveillance moved from live animal testing to slaughter inspection in the early 1960's, testing of animals for interstate commerce still remains vital to eradication efforts. The purpose of this article is to reiterate the factors involved in using the Caudal Fold Test (CFT) for detection of Bovine TB.

Since the CFT is a presumptive test, it is imperative that tuberculin be handled properly and that protocol of injection and observation be followed as correctly as possible. Because of the potential for the presence of *Mycobacterium avium*, *Mycobacterium paratuberculosis*, and saprophytic Mycobacterial species, the expected response rate for the CFT in a normal population ranges from 1 – 5%. This expected false positive rate is based on the historical statistical analysis of millions of properly performed CFT tests. A chart outlining the expected response rate for any number of cattle tested can be found on the last page of the [USDA Tuberculosis UM&R](#).

The Texas Animal Health Commission (TAHC) routinely monitors response rates of accredited veterinarians in an effort to increase the overall confidence of TB testing in Texas. Factors that influence the likelihood of a valid response include, but are not limited to:

- Proper intradermal injection of tuberculin
- Presence of pre-existing skin lesions at injection site
- Interpretation of response
- Potency of tuberculin
- Proper needle/syringe size

If a bleb at the injection site was not observed, then the injection was most likely subcutaneous and the result will not be valid. To help ensure a proper intradermal injection is applied, tuberculin should only be injected using 1cc syringes with a 26 gauge 3/8" intradermal bevel needle. Skin lesions and swellings present at the injection site prior to injection of tuberculin will play a role in accuracy of reading the response at time of observation, and a different injection site should be chosen in those cases with notation on the test chart. The CFT is not a quantitative test, therefore any response at the injection site, whether a noticeable nodule or simply a slight increase in skin thickness, should be reported as "suspect".

Improper handling of tuberculin can also result in an invalid test. Since tuberculin denatures from exposure to light, it should be stored in the dark at 35-45°F. Tuberculin is susceptible to oxidation; therefore any partial opened vials should be discarded within four weeks. Finally, it has been demonstrated that the potency of tuberculin is decreased by as much as 98% when stored in plastic containers for more than 12 hours, therefore any unused tuberculin in syringes should be discarded. All suspect animals disclosed on the caudal fold test reading date should be immediately reported to the appropriate TAHC regional office so that follow up testing can be planned. Further evaluation of a suspect on the CFT will involve either the Comparative Cervical Test performed a TAHC or USDA veterinarian within 10 days of CFT injection, or, more commonly in Texas the Bovigam “gamma” interferon blood test. The TAHC now approves private practitioners to collect blood for TB gamma testing. Contact your local TAHC region office if you are interested in being approved for this as the TB gamma test requires special handling and shipping procedures to be effective.

All test results should be recorded on a USDA test chart VS 6-22 including acceptable forms of official identification on the cattle and submitted to the appropriate TAHC regional office as soon as possible. The proper test chart may be obtained at no charge by contacting the Austin USDA Veterinary Service office for Texas at 512-383-2400.

Recognition of the factors involved in a valid CFT test and adherence to the principles outlined above will provide the greatest confidence for detecting TB in cattle intended for interstate commerce.