

Cattle Bovine TB Testing Primer

Historical Background: Records for *M. bovis* in cattle are scattered throughout the history of their introduction to North America. Testing and eradication efforts began in the 1800's, but TB was endemic in cattle until at least 1970. This testing consisted of a test and slaughter program, in which cattle were tested and those that tested positive were removed from the herd.

Between 1979 and 1984, Agriculture Canada reviewed and redesigned the surveillance program, shifting away from test and slaughter to herd depopulation. The cornerstone of this new policy was the complete depopulation of all infected or exposed animals, with compensation paid to the owners of those animals. At the same time, with fewer positive animals being found on farms, routine TB testing moved away from area (on farm) testing to the more economical testing of cattle at slaughter. Manitoba was declared disease free in 1986.

Following the discovery of TB positive cattle on area farms in 1991, 1997, 2000, and 2003, the CFIA, on January 1, 2003, established the Riding Mountain Eradication Area (RMEA) around Riding Mountain National Park, and encompassed Manitoba Conservation's Game Hunting Areas 23 and 23A. From that date, movement permits for cattle and farmed bison, and enhance disease surveillance in the form of periodic whole-herd tests, have been required. The appropriate retesting interval for any given herds is based upon the infection findings in cattle or wildlife in previous years, and an assessment of the risk that TB may be introduced into the herd. The retest interval of any herd in the RMEA will generally not be less than 12 months, and not exceed 36 months.

Please note: a comprehensive review of historical data on the prevalence of TB in domestic cattle herds is being conducted by a student from the Natural Resources Institute. Her completed thesis is expected in March, 2005.

Testing methodology:

Please see the attached testing flowchart from the Canadian Food Inspection Agency and a brief description of the body's immuno-response behind the testing process, developed by John Whitaker.

Please note: For the coming year (2004/2005), any animal reacting to the caudal fold test will be retested using the Bovigam blood test, with the blood sample collected by a CFIA inspector trained in the proper collection, handling & preservation techniques required to maintain the sample at room temperature from the time of collection until its arrival at the laboratory. This blood sample is to be collected not less than 3 days and not more than 7 days following the caudal fold tuberculin injection. (**NB:** The CCT test will no longer be used.)

Results:

To date, over 80 000 head have been tested since area testing began in January, 2003. Since this time, a total of 3(?) cows have been confirmed with TB from inside the RMEA, affecting a total of 4 farms (3 TB infected farms, one exposed farm) inside the RMEA. In addition, one milk cow from a farm outside the RMEA was found to be TB positive. This cow, discovered at slaughter, had connections with a dairy herd from inside the RMEA, as she was purchased from a dispersal sale near McCreary).

Conclusion and Current Relevance:

With the three positive farms since 2003, the RMEA has been designated as TB-Accredited Advanced (very low prevalence of TB), while the rest of Manitoba, with a single case, is still considered to be TB-Free (rare or not present). Provided that there are no new cases of TB, the RMEA will be eligible for TB-Free status in April 2006 (3 years following the eradication of the last confirmed infection).

Note: even if/when the RMEA achieves a TB-Free status, the CFIA will continue to do area-testing of cattle and captive bison herds due to the presence of Bovine TB in wildlife.

Attachments:

- John Whitaker's paper on the body's immuno-response to testing
- Update from CFIA, with outline of new testing protocols as of September 2004.
- CFIA Testing Flowchart (new)
- CFIA Testing Flowchart (original)