

Western Stock Growers' Association

BULLETIN #3

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UPDATE: Bovine TB in Alberta

This update contains information from two conference calls with CFIA and industry stakeholders on November 15 and November 17.

What we know:

- CFIA has found five additional positives in the 52 animals sent for enhanced post-mortem last week. The five were identified from a group of twelve animals that had lesions and / or microscopic changes highly suggestive of infection with the bovine TB organism. Samples from these twelve were submitted for PCR analysis which has identified the five positives. The 52 animals originate from two of the three premises that comprise the known infected herd. At this time we do not know whether the five positives come from one or both aforementioned premises. More positives may still be found in those 52 animals. Reactor animals from the third premise were scheduled to undergo euthanasia and enhanced post-mortems Friday.
- The additional positives prove transmission within the herd and CFIA will use this information to further inform the risk assessment which determines how the investigation proceeds. At this time, we don't know how the new information will affect the investigation.
- The positives were identified through DNA replication tests (PCR) done on the twelve highly suspect animals. Samples from all 52 post-mortems were submitted for culture which could identify more positive animals over the next approximately ten weeks.
- Genetic testing on the strain will be done if culture of the organism is successful. This will give more information on the source of the strain. It has been determined the strain found in the first positive animal was previously identified in Central Mexico in 1997.
- The quarantine is operated on a premise-by-premise or animal-by-animal basis. To this date, there is not a quarantined zone.
- The Alberta case will not affect Canada's bTB-free status unless another positive case is confirmed within 48 months that is unrelated to the current investigation.
- When all animals from a herd have tested negative for bovine TB and where supported by the epidemiological evaluation, the herd can be released from quarantine under direction from the CFIA.

CFIA has committed to keeping the TB investigation web page updated with the most current information they can share. Click on this link: <http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/tuberculosis/investigation-southeast-alberta/eng/1477438380160/1477438380659>
On this page is a link to ask questions of CFIA via email regarding the current investigation.

Bovine TB testing practices

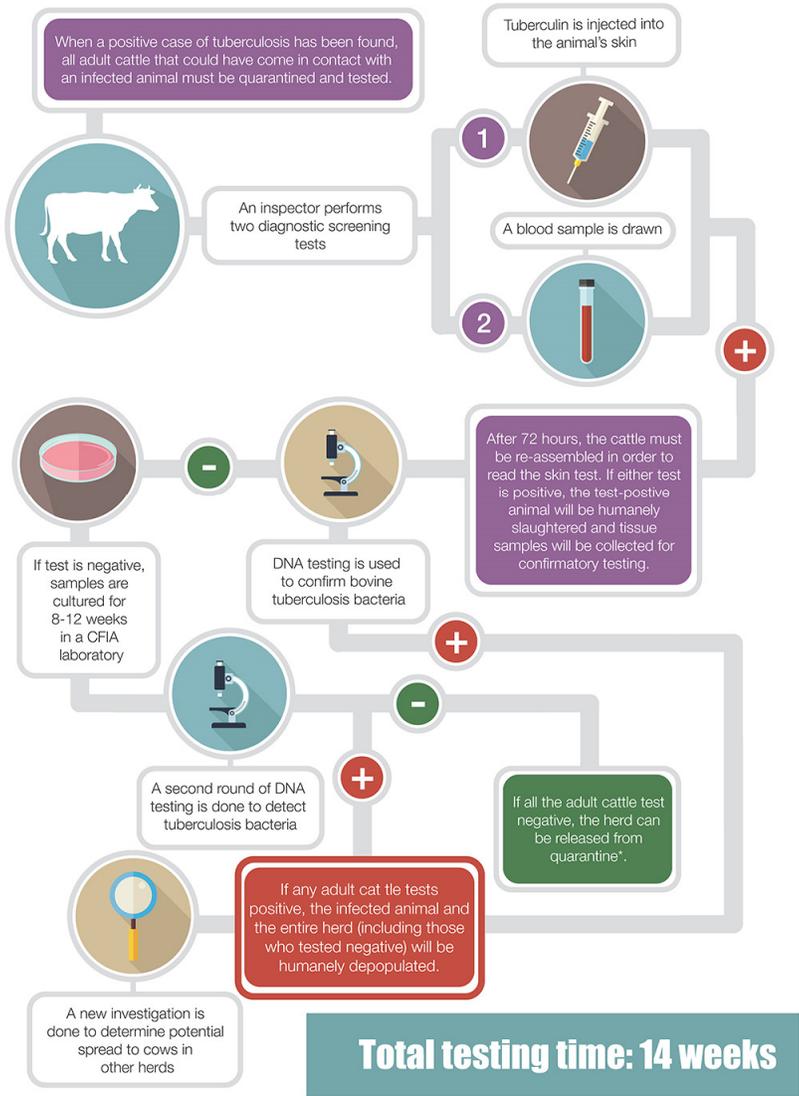
The two tests used by the CFIA are the caudal fold skin test and an enzyme-linked immunosorbent assay (ELISA) blood test. The following highlights the approximate timeframe for the testing procedure and analysis results.

1. The caudal fold test is a delayed hypersensitivity test that causes an immune reaction if bTB is present in the animal's system. The test serum is injected into the caudal fold skin of the tail, and the injection site is examined 72 hours (3 days) later for a reaction.
2. If a cow reacts to the injection, further testing is required. It is important to note that some cows (approximately 2-4%) will react to the test, even if they haven't been exposed to the disease. Cross-reactions with other diseases (avian tuberculosis, Johne's Disease) may also occur. These cases are called 'reactor' animals.
3. Blood samples collected at the time of the caudal fold test are submitted to a lab where the ELISA is run. It takes three to five days for the blood test results to be available. Whenever possible, blood test results are sent to the inspectors doing on-farm testing prior to the completion of the examination for the caudal fold reaction,
4. Animals may react to the blood test and not the caudal fold test and vice versa.
5. All "reactor" cows are removed from the herd, and will undergo an enhanced post-mortem, with compensation. All "reactors" will have tissues collected for further analysis including culture, histopathology (microscopic exam), and a PCR (DNA replication) test on highly suspicious animals. Either culture or PCR, when positive, demonstrate the presence of the causative organism *Mycobacterium bovis* and thus an infected animal. Negative PCR alone does not meet the definition for non-infected animal so culture is required on all reactor animals. **The culture takes 8-12 weeks to complete.**
6. Non-reactors from infected herds (herds with a confirmed positive animal, or those deemed equivalent risk that have been ordered depopulated) will remain eligible to move under permit to inspected slaughter and be processed for beef after undergoing ante and post-mortem inspections.
7. Non-reactors from non-infected quarantined herds remain in quarantine until post-mortem and secondary testing of any reactors in the herd is complete. (Secondary testing includes microscopic, PCR and culture testing). If the reactors are deemed negative after the enhanced post mortem and secondary testing, the herd may be released from quarantine under the direction of the CFIA.
8. If there are no reactors to either the caudal fold or blood tests, the herd may remain under quarantine, depending on that herd's connection to other herds with reactors, and the results of the enhanced post mortem and further testing of those reactors.
9. An animal may be declared positive on the basis of the results of the post-mortem exam, histopathology, PCR test and / or the culture test. An animal will be considered free of bTB when the culture (and PCR if done) test negative. CFIA uses a set of scientific criteria (case definition) to determine positive and negative animals.

If a positive is declared, the herd of origin will be depopulated with compensation. Further movement tracking will be conducted to identify any new herds that may have been in contact with the positive animal.



TUBERCULOSIS TESTING TIMELINE



* In rare cases, a quarantine may have to be extended in order to allow for further testing because of the outcome of other herd investigations.



What a depopulated ranch has to do to stock cows again

A cleaning and disinfection evaluation will be completed to identify all areas on the infected premises that may be contaminated and assigns a degree/risk of expected contamination (high, medium, low). The assessment includes findings from the CFIA epidemiological investigation, herd testing results and necropsy results of exposed animals. A cleaning and disinfection plan will be provided to the producer and will specify actions required such as removal of organic debris, cleaning and disinfection of potentially contaminated hard surfaces, removal of top layer of soil in areas that are not exposed to sunlight for example.

An infected herd premise will be required to complete satisfactory cleaning and disinfection and as well as a vacant period. The vacant period will be based on a risk evaluation that includes the epidemiological information and herd test results. When a premise is restocked, two annual herd tests are required for all testable animals during which time no quarantine is in place. The standard vacant period is 45 days however this will vary depending on the cleaning and disinfection protocol, landscape conditions, weather and other factors.

High risk herds that test negative for bTB will be released from quarantine under direction from the CFIA. Producers will be expected to keep adequate records to enable tracing if there are further disease incidents. Subsequent testing may be required but normally there would not be a pre-determined testing requirement.

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