

Bovine Tuberculosis and Brucellosis Surveillance Results
Monthly Reports, Federal Fiscal Year (FY) 2015
December 1–31, 2014

Bovine Tuberculosis (TB)

New Information

- A new TB case was detected in a steer slaughtered in Arizona. Tissues were compatible for mycobacteriosis. PCR was positive for *Mycobacterium avium*; therefore, the investigation was considered closed.
- A new TB case was detected in a steer, reported as Holstein, in the Texas panhandle. Tissues were compatible for mycobacteriosis. Production identification tags were present but no official identification was submitted to NVSL. The PCR was pending.
- A Texas dairy under the same ownership as the Texas dairy reported in November 2014, but approximately 60 miles away, was determined to be TB-affected based on whole-herd testing, postmortem of gamma interferon positive animals, compatible lesions, and PCR results. This dairy appears to have a low prevalence of infection. Plan for management of tuberculosis infection in the dairy is pending postmortem results in test-positive cattle, computer modeling of potential testing plans, and comparison of costs/efficiency of testing versus depopulation.

Update of Previously Reported Information

- A portion of the test-positive cattle from the quarantined Texas dairy found in November 2014 by slaughter surveillance were examined postmortem. Numerous cases of tuberculosis were found among cows, calves, and older heifers on the dairy. These were confirmed by histopathology as bovine TB. Prevalence of infection is expected to be moderate in this herd. Plan for management of infection in the dairy is pending postmortem results in test-positive cattle, computer modeling of potential testing plans, and comparison of costs/efficiency of testing versus depopulation.

Table 1. Bovine TB cases found through routine slaughter inspection, FY 2015.^a

Laboratory Status	New TB Cases December 1-31, 2014		Cumulative TB Cases October 1 – December 31, 2014		
	Fed cattle	Adult cattle	Fed cattle	Adult cattle	Total
<i>M. bovis</i> cases, confirmed ^b	0	0	1	1	2
PCR pending	1	0	1	0	1
PCR negative, culture pending	0	0	0	0	0

^a Animals detected through routine slaughter inspection. Animals sent to slaughter with a 1-27 permit, “Permit for Movement of Restricted Animals” are not included.

^b Confirmed by PCR testing and/or culture.

Table 2. Livestock herds confirmed infected with bovine TB, FY 2015, including test-and-remove managed herds under quarantine and carried forward from previous fiscal years.

State	Federal Fiscal Year Detected	Method of Detection	Herd Type	Herd Management Plan	Closest Isolates by WGS (Number of SNP Differences) ^a	Wildlife Surveillance Planned?	Approximate Number of Animal Traces	States With Traced Cattle
MI ^b	2008	Surveillance	Cervid	Test and removal	MI	Ongoing	None	None
MI ^b	2008	Surveillance	Cervid	Test and removal	MI	Ongoing	None	None
TX	2015	Slaughter	Dairy	Pending	2004 TX (15) and 2007 NM dairies (14)	Pending	Pending	Pending
TX	2015	Epidemiology	Dairy	Pending	Pending	Pending	Pending	Pending

^aWGS = whole genome sequencing, SNP = single nucleotide polymorphisms; () = number of SNP differences to the most recent common ancestor compared to other isolates in the National Veterinary Services Laboratories database.

^bTwo herds detected in previous fiscal years are included.

^cMX = Mexico

Brucellosis

Herds Remaining under Quarantine and Test-and-Remove Procedures or Awaiting Assurance Test Results

FY 2015

Montana:

- Affected beef herd: On November 8, 2014, one reactor (an 8-year-old cow) was detected during testing of a group of 171 head in a Madison County commercial cow-calf beef herd. The herd had a Designated Surveillance Area (DSA) herd plan in place as a portion of the herd grazes within the DSA. On November 12, 2014, the reactor's seropositive status was confirmed; the herd was placed under verbal quarantine and milk samples submitted for culture. Milk samples were found negative for *Brucella*. Tissues were collected on November 19th and NVSL reported *Brucella abortus biovar 1* isolation on December 3, 2014. Entire-herd testing was completed December 10, 2014 and among 2338 head tested no additional seropositive animals were found. An Affected Herd Plan was put in place December 11, 2014. All the DSA adjacent herds have been identified and have tested negative. All non-DSA adjacent herds have been identified and testing is in progress with no more reactors found at the beginning of January 2015. The first herd test post-removal of the reactor is planned for January 2015.

Montana:

- Affected beef herd: On October 23, 2014, one reactor (a 3-year-old cow) was detected during testing of a group of 262 head in a Park/Carbon County commercial cow-calf beef herd. The

reactor animal was part of a cohort that grazes seasonally in the DSA and was tested when leaving the DSA per state law. The herd was placed under verbal quarantine October 25, 2014. An Affected Herd Plan has been finalized. On October 31, 2014 the reactor's seropositive status was confirmed and the milk samples submitted to NVSL for culture on November 12, 2014 were found negative for *Brucella spp.* On December 4, 2015 tissues were collected and submitted to NVSL and on December 12, 2015, NVSL reported *Brucella abortus biovar 1* isolation. Entire-herd testing was completed December 18, 2014 and no additional seropositive animals were found. All the Park County adjacent herds have been tested and are negative. The Carbon County adjacent herds are in the process of being identified for testing. The first herd test post-removal of the reactor is planned for January, 2015.

FY 2014

Montana:

- Affected beef herd: On September 2, 2013, one reactor (7-month-old bull) was detected on a herd (560 head) Certified Brucellosis-Free herd recertification test in a beef herd in Park County. *Brucella abortus biovar 1* was confirmed on October 11, 2013. This herd had been a Certified Brucellosis-Free herd since 2009. Designated surveillance area (DSA) and affected herd plans are in place. First post-reactor removal herd brucellosis test was conducted in November 2013, and all animals (556) were brucellosis negative. Four adjacent herds have tested brucellosis negative. There are 9 trace-outs covering 42 cattle in 6 States. The Montana trace-in epidemiological investigation is closed. The post-calving whole-herd test in late March was negative and the quarantine for the herd was lifted in late March. The fall assurance testing was completed in October; all cattle tested negative

Updates: Eight of nine trace-out epidemiological investigations are completed.

FY 2013

Montana:

- Affected beef herd: On September 5, 2013, a single brucellosis reactor (2-year-old female) was detected on a DSA brucellosis pre-slaughter test of 42 head in Madison County. *B. abortus biovar 1* was confirmed September 25, 2013. A herd brucellosis test (1116 head) detected one reactor and one suspect. The tissues were submitted but no *B. abortus* isolation was made from either animal. DSA herd and affected herd plans are in place. Epidemiological work has determined the exposure occurred sometime in the spring of 2013. Nine adjacent herds have tested brucellosis negative. A whole-herd test conducted on January 8, 2014 was negative. No *Brucella* was isolated from tissues submitted from the suspect cow, detected on January test, or its fetus. There were no trace-in animals identified. Twelve of 22 trace-out epidemiological investigations, covering 467 cattle in 9 States, have been completed. The post-calving whole-herd test in late March was negative and the quarantine for the herd was lifted in late March. The fall assurance testing was completed in October; all cattle tested negative.

Updates: Fourteen of 22 trace-out epidemiological investigations are completed.

FY 2012

Idaho:

- Affected beef herd: A cattle herd (65 head) was traced from a slaughter blood sample collected in California. This herd was outside of the Idaho's DSA; the DSA has been expanded since detection of this herd. This herd is under quarantine with movement controls and an affected herd management plan in place. All trace-out and trace-in epidemiological investigations associated with this herd have been completed and closed. The herd had its second negative

whole herd test on October 11, 2013. A post-calving whole herd brucellosis test of 86 head performed on 28 April 2014 was negative for all animals. All 2014 heifer calves were bled mid-October and all tested negative.

Updates: Herd test conducted on 80 head of adults/yearlings on November 26, 2014. All animals tested negative. Retained 2013 heifers will be tested after calving in spring 2015 as part of a post-calving whole herd test. If all test negative at that time, the quarantine will be lifted and an assurance test will be scheduled for fall 2015 or spring 2016.

- Affected privately owned bison herd: A privately owned bison herd (268 head), assembled and located in the DSA in 2010, was brucellosis tested to meet Idaho's DSA requirements. Quarantine and movement controls are in place. An updated affected herd management plan is pending owner's signature. All trace-out and trace-in epidemiological investigations associated with this herd have been completed and closed. A whole-herd brucellosis test was conducted on December 4-5, 2013 and all animals were negative. This was the first negative whole-herd test. Herd test completed on November 2014 - all 278 animals were test negative. This second negative complete whole herd test.

Updates: On December 15-16, 2014, 214 bull and heifer calves (2014 calves) were tested with all having negative results.

FY 2011

Montana:

- Affected privately owned bison herd: A brucellosis-affected privately owned bison herd was detected in Gallatin County in November 2010. This herd was detected as part of Montana's DSA herd management plan testing. This herd is under quarantine with movement controls and an affected herd management plan in place. All trace-out and trace-in epidemiological investigations associated with this herd have been completed and closed. The fall 2013 test detected 13 seropositive (*B. abortus* biovar 1 isolated) animals out of 4050 head of bison tested. Annual fall testing began October 20, 2014 and was completed November 21, 2014. **Updates:** At the conclusion of the annual fall testing, 16 reactors and 3 suspects had been identified.

Wyoming:

- Affected bison herd: A brucellosis-affected privately owned bison herd inside the Wyoming DSA (Park County) was disclosed in November 2010. This herd consists of two groups – the Main herd and the Preferred herd. The Preferred herd has undergone four negative brucellosis tests and was released from quarantine in late January 2012. Preferred herd was bled early October- all negative. The Main herd remains under quarantine with movement controls and an affected herd management plan in place. In fall 2013 herd brucellosis testing of Main herd, all 462 cows and calves tested negative. Bulls will be tested in the spring/summer of 2014. Main herd (293 adult cows plus the 2014 calves) were bled October 26, 2014 – all negative. All trace-out and trace-in epidemiological investigations associated with this herd have been completed and closed. Nineteen bulls from the Main herd tested negative on July 10, 2014. One yearling heifer in the replacement heifer group tested positive November 9, 2014. Breeding bulls will be bled spring 2015 coinciding with their breeding soundness examinations. **Updates:** Cows with 2014 calves tested negative on fall herd test.

Table 3: Livestock herds confirmed brucellosis affected in FY 2014, 2013, 2012 and 2011

State/ FY	Method of Detection	Herd Type	Affected Herd Management Plan	Genotyping Descriptive Results	Wildlife Surveillance Planned?	Animals Being Traced	States Receiving Traced Cattle/Bison
MT 2014	Certified Brucellosis- Free Herd Recertification Test	Beef	Quarantine with test & remove	Clusters with other isolates recovered from area wildlife & livestock	Yes	43	One trace-in State: MT (closed) 6 trace-out States: 8 of 9 traces completed CA - 1 MN - 2 closed MT - 3 (3 closed) NE-1 closed SD-1 closed TX-1 closed
MT 2013	DSA Required pre-slaughter testing	Beef	Quarantine with test & remove	Common ancestor with wild elk from the same area	Yes	424	0 trace-in States 9 trace-out States: 14 of 22 traces completed CA - 1 CO - 1 IA - 1 closed KS - 1 closed MN - 2 (1 closed) MT - 12 (8 closed) SD- 1 closed NE - 2 closed ND-1
ID 2012	MCI trace	Beef	Quarantine with test & remove	Similar to 2006 & 2010 ID cattle isolates	Yes	48	One trace-in State: ID, 3 herds All trace-ins closed. 4 trace-out States: TX, UT, ID, & NM. All trace-outs closed.
ID 2012	DSA required test	Bison	Quarantine with test & remove	Similar to ID elk isolates	No	349	5 trace-in States: ND, SD, MT, OK, ID. All trace-ins closed. One trace-out State: ID (closed)
MT 2011	DSA herd management plan testing	Bison	Quarantine with test & remove	Exact match to a 2009 MT elk isolate	Yes	7510	3 trace-in States: NM, NE & MT All trace-ins closed. 5 trace-out States: MT, NE, WY, KS & ID All trace-outs closed.
WY 2011	Pre-sale test on farm	Bison	Main herd remains under quarantine with test & remove.	Similar to 2007 & 2010 WY elk & 2010-2011 cattle isolates.	Yes	870	1 trace-in State: SD (closed) 4 trace-out States: MT, WY, CO & NV All trace-outs closed.