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

New Information – Bovine Tuberculosis (TB)

- No new TB cases were detected through slaughter surveillance in August.

Update of Previously Reported Information

- The Office of Management and Budget approved emergency indemnity funding; the funds were received in September. These funds were requested because FY 2015 appropriated indemnity funds were depleted.
- Bovine TB was confirmed in a small Michigan cattle herd located in the Modified Accredited zone (MA), in Alcona county, Michigan. Three cattle had gross lesions that were compatible for mycobacteriosis by histology. PCR was positive for *Mycobacterium tuberculosis* complex and *M. bovis* was isolated by culture. In addition, tissues from a goat in the same herd are compatible for mycobacteriosis and culture is pending. If bovine TB is confirmed in the goat, it will be the first detection of *M. bovis* in a domestic goat since 1991. This is the 62nd TB infected herd found in Michigan since 1998. The herd has been depopulated.
- Cattle appraisals are underway in the TB infected Michigan dairy located in the MA zone. The dairy will be depopulated. The decision to depopulate the herd was delayed due to the lack of federal indemnity funds. This herd was detected during an annual whole herd test (WHT). This is the 61st TB infected herd found in Michigan since 1998.
- Nine additional heifers were confirmed with TB in the Texas feedlot and heifer raiser reported in July. One 4-year-old cow was also confirmed with tuberculosis in one of the associated dairies. Additional caudal-fold positive cattle from a second test of the dairies and feedlot are scheduled for postmortem examination in September.
- The first Texas dairy quarantined in October 2014 is being appraised and planning is underway to depopulate this large dairy. The initial estimated within herd prevalence was 5.9%.
- Officials have detected a total of three infected cows from the second Texas dairy quarantined in October 2014. No new infected cattle were detected during the fourth WHT, and the quarantine release test is scheduled for December 2015.
- There have been a total of nine TB cases in fed cattle during FY 2015. Of these, six were Holstein steers traced to the Texas feedlot and heifer raiser mentioned earlier, and three were from Mexico. Tissues were compatible for mycobacteriosis and PCR was positive for *M. tuberculosis* complex for all cases. *Mycobacterium bovis* has been isolated for eight cases. Culture was not possible for one TX case in which only formalin fixed tissues were submitted.

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

	New TB Cases August 1-31, 2015		Cumulative TB Cases October 1, 2014 – August 31, 2015		
Laboratory Status	**Fed cattle**	**Adult cattle**	**Fed cattle**	**Adult cattle**	**Total**
M. bovis cases, confirmed[b]	0	0	9	1	10
PCR pending	0	0	0	0	0
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 Manage-ment 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	Depopulation	2004 TX (16), 2007 NM dairies (15), 2011 AZ roping steer from CHI (25)	Not indicated	Pending	Pending
TX	2015	Epidemiology	Dairy	Test and remove	Same as above	Not indicated	Pending	Pending
MI	2015	Area Testing	Dairy	Depopulation	MI	Ongoing	368	Pending
TX	2015	Slaughter	Dairy[c]	Test and remove	Pending	Pending	Pending	Pending
MI	2015	Area Testing	Mixed	Depopulation	MI	Ongoing	None	Pending

[a] WGS = 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.
[b] Two herds detected in previous fiscal years are included.
[c] This herd consists of two sister dairies and their associated common heifer raising/feedlot facility.

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. Whole herd testing of 2,338 head was completed December 10, 2015 and no additional seropositive animals were found. An Affected Herd Plan was put in place December 11. All the DSA adjacent herds have been identified and have tested negative. Whole-herd test post-removal of the reactor was completed in January 2015 and all animals were negative. Post-calving whole herd test completed and all animals were brucellosis test negative. Quarantine has been released. Assurance test is scheduled for this fall. Traces are pending. All non-DSA adjacent herds (27) have been identified and all tested negative.
  Updates: None

- 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 25th. An Affected Herd Plan is in place. On October 31, 2014 the reactor's seropositive status was confirmed, and the milk samples submitted to NVSL for culture on November 12th were found negative for *Brucella* spp. On December 4th, tissues from the reactor animal were collected and submitted to NVSL; on December 12, 2014 NVSL reported isolation of *B. abortus* biovar 1. Whole-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. Whole-herd test post-removal of the reactor was completed in January 2015 and all animals were negative. Whole-herd test was completed March 11th and all animals were negative. Quarantine was lifted March 16, 2015. Assurance test is tentatively scheduled for fall 2015. Traces are pending. All Carbon County adjacent herds (4) have tested negative.
  Updates: None

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. Twenty of 22 trace-out epidemiological investigations, covering 467 cattle in 9 States, have been completed. The post-calving whole-herd test in late March 2014 was negative and the quarantine for the herd was lifted in late March 2014. The fall assurance testing was completed in October 2014; all cattle tested negative. Awaiting disposition of final two traces.
Updates: None

FY 2012

Idaho

- 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. Herd test completed on November 2014 – all 278 animals were test negative. This was the second negative complete whole-herd test. On December 15-16, 2014, 214 bull and heifer calves (2014 calves) were tested with all having negative results. Next whole herd test is scheduled for fall 2015.
  Updates: None

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. At the conclusion of the annual fall testing, 16 reactors and 3 suspects had been identified.
  Updates: None

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. The Main herd remains 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 June 2015 Main herd whole herd test results were all negative. Next whole

herd test of Main herd females is scheduled for fall 2015 and if negative would be the 3rd negative test for this portion of the herd. A test of 20 herd bulls on July 14, 2015 showed all negative results. Next test of herd bulls is tentatively planned for January 2016.

Updates: None

Table 3: Livestock herds confirmed as brucellosis affected, FY 2011-2015.

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 2015	DSA Herd Plan Test	Beef	Quarantine with test & remove	Most closely related to 2 elk isolates (2009 – 2010)	Yes	Pending	**Traces are pending**
MT 2015	DSA Herd Plan Test	Beef	Quarantine with test & remove	Closest common ancestor – wild bison (1985)	Yes	Pending	**Traces are pending**
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**: 20 of 22 traces completed (MN-1, ND-1; open) (CA-1, CO-1,IA-1, KS-1, MN-1, MT-12, SD-1, NE-2; closed)
ID 2012	DSA required test	Bison	Quarantine with test & remove	Similar to ID elk isolates	No	349	All trace-ins closed. All trace-outs closed.
MT 2011	DSA herd management plan testing	Bison	Quarantine with test & remove	Exact match to a 2009 MT elk isolate	Yes	7510	All trace-ins closed. 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	All trace-ins closed. All trace-outs closed.