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

New Information – Bovine Tuberculosis (TB)

- APHIS confirmed one new TB case in a culled adult dairy cow slaughtered in October in Texas. Lesioned tissue was compatible for mycobacteriosis and PCR was positive; culture was positive for *Mycobacterium bovis*. The animal has been traced to a Texas dairy. By whole genome sequencing, the isolate did not match other outbreaks in the NVSL database but shares an estimated 50-year-old common ancestor with previous infected dairies in Texas (2004) and New Mexico (2007). A second animal sent to slaughter under permit directly from the dairy was found lesioned during slaughter inspection. Tissues from this second animal are compatible for mycobacteriosis, PCR is positive and culture is pending. The dairy has been quarantined and a whole-herd test is scheduled for early November. The Food Safety and Inspection Service employee named on the laboratory submission form is eligible for both a TB case and affected herd award.

Update of Previously Reported Information

- Additional TB-infected animals have been found in a Michigan feedlot that is epidemiologically linked to the 2013 TB affected dairy in Saginaw County, Michigan. A total of 24 of 70 finished Holstein steers slaughtered in October had lesions consistent with TB. Of these, 23 were compatible for mycobacteriosis by histology. Culture is pending. Bovine TB had been detected in six Holstein steers from this feedlot from March through June 2014, and the feedlot has remained under quarantined since that time. The lot in which these new cases were found was transported to slaughter under VS 1-27 permit. The remaining exposed animals on the premises that had comingled with the infected animals were TB tested and 46 of 198 CFT responders were purchased with Federal indemnity and euthanized at the Michigan Veterinary Diagnostic Laboratory.
- Herd testing is complete in Utah as a result of finding TB in a culled adult dairy cow that was slaughtered in California in November 2013. Tissues were compatible for mycobacteriosis and PCR and culture were positive. Three dairies were tested in Utah by regulatory veterinarians without finding evidence of tuberculosis. Herd testing is underway for other potential source herds in California and Arizona.
- The TB-affected North Dakota dairy detected in FY 2014 was negative on the quarantine release whole herd test conducted in October (Table 2). The quarantine is expected to be released in early November.

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

	New TB Cases October 1-31, 2014		**Cumulative TB Cases October 1-31, 2014**		
Laboratory Status	**Fed cattle**	**Adult cattle**	**Fed cattle**	**Adult cattle**	**Total**
M. bovis cases, confirmed[b]	0	1	0	1	1
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 tuberculosis, Federal fiscal year (FY) 2014, 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
ND[b]	2014	Herd test triggered by dairy worker diagnosed with TB	Dairy	Test and removal	2014 Human (0); 2012 MX[c] steer (9)	Ongoing	22	IA, MN, MT, NE, SD

[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]Three herds detected in previous fiscal years are included.

[c]MX = Mexico

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

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. Seven of nine trace-out epidemiological investigations are completed.
  Updates: The fall assurance testing was completed in October and all cattle tested negative.

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. There are 22 trace-outs, covering 467 cattle in 9 States. The post-calving whole-herd test in late March was negative and the quarantine for the herd was lifted in late March.
  Updates: The fall assurance testing was completed in October and all cattle tested negative. Twelve 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 April 28, 2014, was negative for all animals. Next herd test is fall 2014 followed by a post-calving herd test in spring 2015 which will include the heifers born in spring 2013. Herd will remain under quarantine until heifers born in 2013 have calved and tested negative at post-calving test, tentatively scheduled for spring 2015.
  Updates: All 2014 heifer calves were bled mid-October and all tested negative. The balance of the herd will be bled mid-November.

- 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. **Updates:** Herd test scheduled for 17 and 18 of November 2014.

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.
  Updates: Annual fall testing began October 20, 2014, and will be completed by fourth week of November. As of October 31, 10 brucellosis reactors have been identified from this testing.

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 Main herd remains under quarantine with movement controls and an affected herd management plan in place. The Preferred herd has undergone four negative brucellosis tests and was released from quarantine in late January 2012. All trace-out and trace-in epidemiological investigations associated with this herd have been completed and closed. 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. Nineteen bulls from the Main herd tested negative on July 10, 2014.
  Updates: Preferred herd was bled early October and all tested negative. Commercial herd (293 adult cows plus 2014 calves) were bled October 26, 2014, and all tested negative. Breeding bulls will be bled in spring 2015 coinciding with their breeding soundness examinations.

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**: 7 of 9 traces completed CA-1, MN - 2 closed MT-3 (2 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**: 12 of 22 traces completed CA-1, CO-1 IA-1 closed KS-1 closed MN-2 (1 closed) MT-12 (6 closed), NE- 2 closed, ND-1 SD - 1 closed
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. Preferred herd released from quarantine.	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.