Bovine Tuberculosis and Brucellosis Surveillance Results
Monthly Reports, Federal Fiscal Year (FY) 2016
March 1-31, 2016

New Information – Bovine Tuberculosis (TB)

- A PCR positive slaughter case was detected in a mixed breed steer from a feedlot in Hereford, TX.
- A PCR positive and histocompatible slaughter case was detected in a steer in Texas. The DNA retrieved from the Coahuila eartag provided with the sample did not match the DNA of the lesion.

Update of Previously Reported Information

- Depopulation, cleaning, and disinfection were completed in early December, and repopulation has begun for the TB-infected Michigan dairy located in the MA zone. This herd was detected during an annual whole herd test (WHT). This is the 61st TB-infected herd found in Michigan since 1998.
- Trace-outs from the small Michigan menagerie herd (consisting of few steers, goats, pigs, and chickens) located in the MA zone have been completed. There were no out-of-State traces associated with this herd and only one source trace to a premises that tested negative. The herd was detected in May 2015 on an annual WHT and was depopulated in August 2015. This is the 62nd TB-infected herd found in Michigan since 1998.
- The state of Michigan paid indemnity to depopulate the adult animals from the Michigan beef herd located in the MA zone. One additional infected animal was found. The feeders remain on the test and remove protocol. The herd was detected in December on an annual WHT. This is the 63rd TB-infected herd found in Michigan since 1998.
- Depopulation was completed on the first Texas dairy quarantined in October 2014. The initial estimated within herd prevalence was 5.9 percent, with a herd size of over 10,000 cattle. Evidence of tuberculosis was found in 171 depopulated cattle over 6 months of age.
- Two Texas organic dairies and the associated Texas feedlot and heifer raiser were quarantined on April 8, 2015. A total of 47 lesioned cattle have been removed from the dairy of approximately 11,000 cattle. In a whole herd test in March, 168 caudal-fold test positives were found and are awaiting slaughter and postmortem examination.
- A Holstein steer was found through routine slaughter in Arizona in January. The epidemiological investigation had mistakenly identified that the steer as originating from Arizona. It is now clear that the steer was fed in California and investigation of its origin continue.

Table 1. Bovine TB cases found through routine slaughter inspection, FY 2016.[a]

	New TB Cases March 1-31, 2016		**Cumulative TB Cases October 1, 2015-March 31, 2016**		
Laboratory Status	**Fed cattle**	**Adult cattle**	**Fed cattle**	**Adult cattle**	**Total**
M. bovis cases, confirmed[b]	2	0	4	0	4
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 2016, 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	Permanent quarantine	MI	Ongoing	None	None
MI[b]	2008	Surveillance	Cervid	Permanent quarantine	MI	Ongoing	None	None
MI	2015	Area Testing	Dairy	Depopulation	MI	Ongoing	368	MI, OH
TX	2015	Slaughter	Dairy[c]	Test and remove	1997 MX (8)	Small survey completed with no evidence of TB	4,150	AZ, CA, CO, MI, MO, MN, NM, IN, TX
MI	2015	Area Testing	Mixed	Depopulation	MI	Ongoing	1 source	None
MI	2016	Area Testing	Beef	State funded Depopulation of adults (*feeders will be fed to slaughter)	Pending	Ongoing	2 source, 4 traceouts	None

[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 hunt facility herds detected in previous fiscal years under permanent quarantine 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 2016

Wyoming

- Affected beef herd: Testing of a portion of a Park County (DSA) commercial cow-calf beef herd on October 28, 2015, revealed one reactor (an 4-year-old cow). The herd of 515 adults was placed under quarantine. Tissues from this cow cultured positive for *B. abortus* on November 19, 2015. Testing of the balance of the herd in early December revealed no non-negative animals. All the adjacent/contact herds have been identified and have begun to be tested. The cow originated from Montana (non-DSA) and was shipped to this ranch in November 2013. The herd has completed its second negative whole herd test. An epidemiologically separate management unit of this producer (NorthUnit) will have an assurance test in the spring or next fall. All traces have been completed with no other positive animals found.
  Updates: The next whole herd test is scheduled for early July 2016.

- Affected beef herd: On November 9-11, 2015, testing of a portion of a Sublette County (DSA) commercial cow-calf beef herd revealed five reactor cows. The herd of 717 cattle was placed under quarantine on November 17, 2015. Tissues from several of these reactors cows cultured positive for *B. abortus* as reported on December 9, 2015. Testing of the balance of the herd in early December revealed six more reactor animals. All seven adjacent/contact herds have been identified and have begun to be tested. All traces have been completed with no other positive animals found.
  Updates: The first negative whole herd test was completed in January of 2016. The second whole herd test on March 14-15 revealed two more reactors. The next herd test will occur after calving in May/June.

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 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 11th. 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. All non-DSA adjacent herds (27) have been identified and all tested negative.
  Updates: Assurance testing was completed in January 2016 with all animals testing negative. Traces are pending.

- 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 which reported isolation of *B. abortus* biovar 1 on December 12, 2014. 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 11, 2015, and all animals were negative. Quarantine was lifted March 16, 2015. Traces are pending. All Carbon County adjacent herds (4) have tested negative. Assurance test was completed in October 2015 and all animals tested negative.

Updates: Traces are pending.

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 nine 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 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 three suspects had been identified. Fall testing in 2015 concluded November 6th with a final count of two suspects and six reactors identified out of 3262 head tested**.** Next test will be fall 2016.

  Updates: None

Table 3: Livestock herds confirmed as brucellosis affected, FY 2011-2016.

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
WY 2016	DSA Herd Plan Test	Beef	Quarantine with test & remove	Most closely related to non-feedground elk	Undetermined	Pending	Traces have been completed
WY 2016	DSA Herd Plan Test	Beef	Quarantine with test & remove	Most closely related to NER & Franz elk feedgrounds and 2004 Teton County beef herd isolates	Undetermined	Pending	Traces have been completed
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 (CA-1, ND-1; open) (MN-1, CO-1,IA-1, KS-1, MN-1, MT-12, SD-1, NE-2; 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.