Bovine Tuberculosis and Brucellosis Surveillance Results
Monthly Reports, Federal Fiscal Year (FY) 2013
October 1–31, 2012

New Information – Tuberculosis (TB)

- Three new suspect TB slaughter cases and one affected herd were detected during October 2012.
- *Mycobacterium bovis* was isolated from a lesion submitted from a 'heiferette' slaughtered in Arizona on September 26, 2012. Since the animal was slaughtered in September 2012, it is considered to be an FY 2012 case and is not included in Table 1 below. Preliminary genotyping results indicates the strain matches isolates from a 2002 California affected dairy herd and Mexican cattle; however, whole genome sequencing analysis is underway to further evaluate this relatedness. No identification devices were present on the animal at the time of slaughter. The animal has been traced to a holding facility in California and an investigation is underway to determine the herd of origin.
- One case occurred in a steer slaughtered in Texas with Mexican official eartags indicating origin from Tamaulipas. Polymerase chain reaction (PCR) was positive for *M. tuberculosis* complex and culture is pending. The last case detected in a Tamaulipas origin animal was in March 2011.
- A third slaughter case was reported in a heifer slaughtered in Pennsylvania. Histology was compatible for mycobacteriosis and PCR was negative; culture is pending.
- One new affected dairy herd was detected the modified accredited zone of Michigan through annual testing. Tissues from two animals were histocompatible and one was PCR positive for *M. tuberculosis* complex. Culture is pending.

Update of Previously Reported Information

- Polymerase chain reaction and culture were negative for tissues from an adult beef cow (> 2 years of age) slaughtered in Arizona during August 2012.
- An adult beef cow confirmed to be infected with TB was slaughtered in Texas in March 2012. Officials in Oklahoma and Texas are continuing the investigation of the multiple potential consignors of this animal and testing the appropriate herds.

Table 1. Bovine tuberculosis slaughter surveillance results, FY 2013.

	New TB Cases October 1-31, 2012		**Cumulative TB Cases October 1-31, 2012**		
Laboratory Status	**Fed cattle**	**Adult cattle**	**Fed cattle**	**Adult cattle**	**Total**
M. bovis cases, confirmed[a]	1	0	1	0	1
PCR pending	0	0	0	0	0
PCR negative, culture pending	1	0	1	0	1

[a] Confirmed by PCR testing and/or culture.

Table 2. Livestock herds confirmed infected with bovine tuberculosis, FY 2013, 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	Origin and Number of Genotype Matches	Wildlife Surveillance Planned?	Approximate Number of Animal Traces	States With Traced Cattle
MI[a]	2005	Area Test	Dairy	Pending	MI	Ongoing	Not applicable	Not applicable
MI[a]	2008	Surveillance	Cervid	Test and removal	MI	Ongoing	None	None
MI[a]	2008	Surveillance	Cervid	Test and removal	MI	Ongoing	None	None
CA[a]	2011	Slaughter	Dairy	Test and removal	MEX = 3	Completed	None	None
CA[a]	2012	Trace	Dairy	Test and removal	Same as FY 2012 CA case	Completed	For this and previously depopulated CA herd, 265 traces of 2246 cattle culled since 2008, EMRS pending: CA (63) AZ (4)	CA
MI[a]	2012	Area Test	Beef	Partial depop[b]	New spoligo-type; VNTR[c] matches MI strains	Ongoing	73 traces of 166 animals None pending	MI
MI[a]	2012	Area Test	Dairy	Test and removal	MI	Ongoing	58 traces of 163 animals	IN, MI
MI	2013	Area Test	Dairy	Pending	MI	Ongoing	Pending	Pending

[a] Seven herds detected in previous fiscal years are included.
[b] State funded partial depopulation.
[c] Variable number

Brucellosis – FY 2012

Idaho:

- Affected, privately owned bison herd: A privately owned bison herd (268 head) was tested to meet Idaho's Designated Surveillance Area (DSA) requirements. Two reactors were detected. Samples collected at necropsy were found culture positive for *Brucella abortus* biovar 4. This herd was assembled and located in the DSA two years ago. Elk have been seen in and around this herd. One trace-out group of 19 head was traced to a feedlot and has tested negative. All eight adjacent herds have tested negative for brucellosis. Movement controls are in place. To mitigate bison contact with elk, the owners have built an elk-proof fence

around 100 acres for use as a winter feeding enclosure. The next herd test will be in November 2012.

- Affected beef herd: A cattle herd (65 head) was traced from a slaughter sample from California. Herd testing detected 5 reactors and 1 suspect. Milk was taken from four of the five reactor cows. *B.* abortus biovar 1 was cultured. Two of the five reactor cows that were milk culture positive were necropsied. *B. abortus* biovar 1 was isolated from tissues collected from these animals. Seventeen heifers, one of the reactors, and 1 suspect detected by herd testing have been spayed. Two reactor cows with young steer calves were slaughtered on May 24, 2012, after their calves were weaned. *B. abortus* biovar 1 was isolated from tissues collected from these two cows. All nine adjacent herds have been tested with negative results. Three trace-in herds located in Idaho. One of these herds has tested negative. The two remaining herds are scheduled for testing in late November 2012, after they return from summer pasture. All trace-out animals were destined for slaughter and have been identified. This herd is outside of the ID DSA. Movement controls are in place. On June 30, 2012, a complete herd test detected 4 additional reactors out of 42 animals tested. These reactors were slaughtered September 20, 2012. Third complete herd test was conducted October 19, 2012, with one cow (out of 38 tested) being detected as positive and classified as a reactor. This cow was shipped to slaughter on October 31, 2012, and tissue samples were collected. The next complete herd test will be in early December 2012.

Montana:

- Affected privately owned bison herd: A brucellosis-affected privately owned bison herd located in Madison County within Montana's DSA was disclosed on November 14, 2011. An entire herd test was conducted in October 2011 that detected a single two-year-old bison bull as a reactor. *B. abortus* biovar 1 was isolated from a single lymph node from this bull. Adjacent herd testing has been completed with approximately 7300 head tested with negative results. All trace-ins (1) and trace-outs (6) have been located and were destined for slaughter or have been assigned for testing. Six hundred heifers tested brucellosis negative in early May 2012. The second complete herd test was conducted in October 2012. All animals were brucellosis test negative. Next complete herd test is scheduled for October 2013.

Wyoming:

- Affected beef cattle herd: One beef herd located in Park County within Wyoming's DSA was determined to be brucellosis affected in October 2011. In September, two 13-month beef heifers were found to be seropositive on brucellosis testing as a result of pre-sale testing of 30 heifers (out of 250 heifers). In October, culture results confirmed infection with *B. abortus* biovar 1. This operation maintains a cow herd which is epidemiologically separate from the affected heifer herd. This cow herd was negative for all testing and was released from quarantine in late 2011. An epidemiologic investigation is in progress and the heifer herd remains under quarantine. Whole-herd testing of two adjacent herds was negative. A whole-herd test of the heifer herd detected a third seropositive animal that was culture positive for *B. abortus* biovar 1. Two additional whole-herd tests of the heifer herd in November and December 2011 were negative. A third negative whole-herd test (post-

calving) was completed in late August and the quarantine was released August 28, 2012. No trace-in herds because it is a closed herd (replacements home raised). No trace-out herds because animals sold to slaughter or terminal feedlots. A whole-herd assurance test began in October and is partially completed. All animals tested to date are brucellosis test negative.

FY 2011 Herds Remaining under Quarantine, Test and Remove Procedures:

Montana:

- Affected beef cattle herd: In September 2011, six yearling heifers in a group of 65 animals tested serologically positive on a change of ownership test for movement out of the DSA (Park County). Four of the six heifers was culture positive for *B. abortus* biovar 1. A 10-month-old bull tested serologically positive in November, but culture results were negative. Post-calving herd test has been completed and all animals negative. This is the third consecutive negative herd test and the quarantine of the herd was released April 24, 2012. Testing of trace-out herds in Montana has been completed and herds tested negative. Four of six out-of-state traces have been completed. The assurance test for this herd began October 19, 2012, and should be completed by early November. All animals have brucellosis tested to date are negative.

- Affected privately owned bison herd: A brucellosis-affected privately owned bison herd was disclosed in Gallatin County in November 2010. This herd was detected as part of Montana's DSA herd management plan testing. The herd is under quarantine with an affected herd management plan in place. All initial testing of adjacent herds, assurance testing of adjacent herds, and all testing of all trace-out herds in Montana is complete and has been negative. Approximately 7500 animals have been tested with negative results. The second complete herd test was conducted over a 6 week period in September/October 2012. Nine reactors were identified in this round of testing with three having biovar1 isolated from submitted tissues. Next complete herd test is scheduled for September/October 2013.

Wyoming:

- Affected bison herd: A brucellosis-affected privately owned bison herd inside the DSA (Park County) was disclosed in November 2010. This herd was detected via on-farm pre-sale testing. This herd is comprised of two groups of animals, the cow-calf operation (Main herd) and the Preferred herd. The Preferred herd is managed separately and epidemiologically distinct from the Main herd. The Preferred herd has undergone four negative tests and was released from quarantine in late January 2012.

  The Main herd remains under quarantine with an affected herd management plan in place. In mid-October 2011, 689 animals that comprised the Main herd were tested. An additional 95 reactors, including 60 bulls, were detected. Thirty-five reactors cows and heifers were segregated out to a separate location, and 60 reactor bulls were slaughtered in February 2012. Serum and tissues from the reactor bulls were submitted for diagnostic testing. Serologic testing detected 42 reactors with *B. abortus* biovar 1 isolated from 36 percent of the tissues cultured. Blood cultures were negative.

The 2011 calf crop was tested in March 2012 and 12 reactors were identified. The 12 reactor calves have been segregated to a separate location on the ranch apart from the Main and Preferred herds. The test negative calves from the 2011 calf crop are being held in a feedlot. The owner plans to keep the reactor cows and heifers until the next herd test in December 2012 – January 2013. All four adjacent herds have had negative herd tests and were released from quarantine in January 2012. All trace-in and trace-outs have been located and tested negative. All traces associated with this herd have been completed and closed.

Table 3. Livestock herds confirmed infected with brucellosis and remaining under quarantine, FY 2013, 2012 and 2011.

State	Method of Detection	Herd Type	Herd Management Plan	Genotyping Descriptive Results	Wildlife Surveillance Planned?	Cattle Being Traced	States Receiving Traced Cattle/ Bison
ID 2012	DSA required test	Bison	Quarantine with test and remove	Similar to ID elk isolates	No	349 animals	5 trace –in states: ND, SD, MT, OK, ID. ID closed. One trace-out state: ID – neg.
ID 2012	MCI trace	Beef	Quarantine with test and remove	Similar to 2006 and 2010 ID cattle isolates	Yes	48 animals	One trace-in state: ID , 3 herds. 1 tested neg. & 2 are scheduled. 4 trace-out states: TX, UT, ID, NM. All trace-outs destined to slaughter
WY 2012	Pre-sale test on farm	Beef	Quarantine with test and remove	Similar to 2007 & 2010 WY elk and 2010-2011 cattle	Yes	0	0
MT 2012	Epi link to 2011 bison herd	Bison	Quarantine with test and remove	Unique profile but the profile clusters with other isolates associated with GYA elk and bison	Yes	3169 animals	1 trace-in state (NE); 6 trace-out states: MT, CO, OR, SD, NE, ID. MT – closed

MT 2011	DSA herd management plan testing	Bison	Quarantine with test and remove	Exact match to a 2009 MT elk isolate	Yes	7510 animals	3 trace-in states: NM, NE, MT. 5 trace-out states: MT, NE, WY, ID, KS. MT herds – closed.
MT 2011	DSA herd management plan testing	Beef	Quarantine with test and remove	Most similar to elk and previous cattle herd isolates from the area	Yes	22 herds	7 trace-out states : ID, MN, MT, NE, SD, UT, WA. 4 of 6 out-of-state traces closed. MT herds – closed
WY 2011	Pre-sale test on farm	Bison	Quarantine with test and remove	Similar to 2007 & 2010 WY elk and 2010-2011 cattle	Yes	870 animals	1 trace -in state (SD) – test negative. 4 trace-out states: MT, WY, CO, NV – all test negative