Strategy and Policy (SP)
Ruminant Health Center
Bovine Tuberculosis and Brucellosis Surveillance Results
Monthly Reports, Federal Fiscal Year (FY) 2020

TUBERCULOSIS

New Information

July 2020

- A histocompatible, PCR positive case was identified through routine slaughter at a Wisconsin plant in a steer and was traced to an Texas exhibition steer premises epidemiologically linked to the June case. This animal had official Mexican ID. Herd test is pending.
- A Texas exhibition steer premises identified from the traceback of a histocompatible case in June underwent a whole herd test with 8 CFT responders which were all negative on CCT. Further results are pending.
- NM 19 signed its herd plan at the end of July and the fifth removal test is scheduled for August.
- A whole herd test was conducted on a New Mexico herd that had received exposed animals from NM 19 in the past five years. All CFT responders were negative on confirmatory testing with Gamma interferon. This herd will be retested in one year.
- Michigan herd #77:
    - The 14 reactors from the second removal test were necropsied, and 11 were histocompatible. Culture and WGS are pending.
    - Final culture and WGS results from the first removal test verified an additional 6 culture positive animals. WGS from these isolates matches other isolates from this outbreak. This brings the total for this herd to 12 culture positive animals, with additional cultures pending.
    - This herd is scheduled for its third removal test in early September 2020.
- Michigan herd #79:
    - During routine annual surveillance testing in the MAZ, a CCT suspect was removed and necropsied. The cow had gross lesions consistent with bTB, was histocompatible at NVSL, and confirmed via PCR in July 2020. Culture and WGS are pending.
    - This is a dairy herd of just under 100 animals. This herd was previously affected with bTB in 2000 and 2004 and was released from quarantine in 2014.
    - One other cow that was a CFT responder but negative on CCT was removed and necropsied. There were no gross lesions and the animal was non-histocompatible. Culture is pending.
- Wisconsin 18 had a CFT negative, gamma positive animal that was indemnified and necropsied in June show up positive on culture in July. The animal was originally not classified as histocompatible and PCR was negative. The owners elected to complete additional removal tests as part of their herd plan with the next removal test scheduled for mid September 2020.

Table 1. Bovine TB cases found through routine slaughter inspection, FY 2020.[a]

	New TB Cases July 1 - 31, 2020		Cumulative TB Cases October 1, 2019 – July 31, 2020		
Laboratory Status	**Fed cattle**	**Adult cattle**	**Fed cattle**	**Adult cattle**	**Total**
M. bovis cases, confirmed	1	0	5	2	7

[a] Animals detected only through routine Food Safety and Inspection Service (FSIS)/State-inspected slaughter. Animals sent to slaughter for diagnostic purposes on a 1-27 permit, "Permit for Movement of Restricted Animals" are not included.
[b] Confirmed by M. bovis identification; or Histo compatible and PCR positive for M. TB complex.

June 2020

- Michigan herd #77 completed its second removal test in mid June with a total of 14 animals removed. Necropsy and other results are pending.
- Michigan herd #78: Final culture results for the 4 cattle removed from this herd during the assessment test were all negative for *Mycobacteria* isolates.
- Michigan herd #67 was released from quarantine in June 2020, following completion of their test and remove program and implementation of a herd plan.
- One histocompatible case was identified through routine slaughter in a steer and was PCR positive. It has been traced to a Texas feedlot and subsequently a Texas exhibition steer premises. Whole herd test to be performed in July.
- Texas 19-1 completed its third removal test with 634 CFT responders.

May 2020

- Michigan herd #77:
    - Partial culture results for the animals removed from this herd during the first test and remove indicated *M.bovis* was present in six of eight cattle. WGS from these isolates matches other isolates from this outbreak. Final culture and WGS results are pending.
- Michigan herd #78:
    - Final culture results for the exposed animals removed from this herd confirmed *M. bovis* in one of seven cattle. WGS reveals that this isolate matches an isolate from herd #77 and the isolate from feedlot #6. The isolates from this outbreak all share a common ancestor with two deer isolates and an isolate from an infected beef herd in the same county.
- Michigan Feedlot #6:
    - Final culture results for the exposed animal removed from this herd confirmed *M. bovis*. WGS reveals that this isolate matches an isolate from herd #77 and the isolate from herd #78, which shares a common ancestor with two deer isolates and an isolate from an infected beef herd in the same county.
- Texas dairy herd (TX 15) completed its 15th removal test with 20 CCT suspects and reactors that were all gamma negative (tests run in parallel). No histocompatible lesions were reported. Cultures are pending. The herd is tentatively scheduled for verification and quarantine release testing in November 2020.
- Wisconsin dairy herd (WI 18) completed another removal test and confirmatory testing

was finished in late May. No additional positives were found and cultures are pending on several no gross lesion animals. Further removal tests or removing all animals in the older age cohort are planned prior to rescheduling the verification test.
- The New Mexico dairy herd (NM 19) had its fourth removal test scheduled for May 2020 but this round of testing was postponed due to COVID-19.

April 2020
- Michigan herd #76 was released from quarantine in April 2020, following completion of their test and remove program and implementation of a herd plan.
- Michigan herd #77:
    - Final culture results for the animals removed from this herd during the assessment test confirmed *M. bovis* in six of eight cattle. WGS reveals that isolates from this outbreak all share a common ancestor with two deer isolates and an isolate from an infected beef herd in the same county.
- Michigan herd #78:
    - A preliminary partial report on the WGS from herd #78 reveals that the isolates from this outbreak match the isolates from herd #77, which share an ancestor with isolates from two deer and one beef herd from the same county. Final culture and WGS results are pending.
    - The four animals removed from herd #78 during the assessment test were necropsied. None of the animals had gross lesions consistent with bTB nor were they histocompatible at NVSL. Culture is pending.
    - The remaining animals at this operation were moved to a terminal feedlot on a VS 1-27. The animals remain under quarantine at the feedlot and can only move directly to slaughter on a VS 1-27. The affected farm remains under quarantine until it completes C&D and meets the components of its herd plan.
- Texas herd 20-1 completed its assessment test after one TB-affected cow originating from this herd was disclosed at slaughter in January 2020. There were 126 CCT suspects and reactors which were necropsied. No histo-compatible results were reported on any of these animals. Cultures are pending. The next herd test is tentatively scheduled for October 2020.
- Texas herd 19-2 completed one of its whole herd removal tests with 14 CFT responders. All were CCT negative and inspected at slaughter with no lesions reported.
- Texas Animal Health Comission (TAHC) and local VS completed a whole herd test at a dairy that received TB-exposed animals. There were 3 CFT positives, all were CCT negative.
- One histocompatible case was identified through routine slaughter from the Wisconsin 18 herd. This cow was voluntarily culled along with 13 others. No other cases were detected from this group. This herd had completed six removal tests which the last four were negative whole herd tests. The last negative herd test was in November 2019. This herd was scheduled for a 6 month verification test in May but its testing plan will be modified based on this slaughter detection.

March 2020
- Michigan herd #74 was released from quarantine in March 2020, following completion of their test and remove program and implementation of the herd plan, including infrastructure improvements to mitigate wildlife risk.
- Michigan herd #77:
    - A preliminary partial report on the WGS from herd #77 reveals that the isolates

from this outbreak share an ancestor with isolates from two deer and one beef herd from the same county. Final culture and WGS results are pending.
    - The eight animals removed from herd #77 during the first round of test and remove were necropsied. Three animals were found to have gross lesions consistent with bTB and were histocompatible. PCR was not run since this herd was already confirmed to be bTB affected. Culture and WGS are pending.
- Michigan herd #78:
    - As part of the Epi investigation of herd #77, seven exposed heifers were located in the AFZ in a backgrounder operation with a total of about 120 animals. The seven exposed animals were removed and necropsied. One of the seven animals had gross lesions consistent with bTB, was histocompatible at NVSL, and confirmed via PCR in March 2020. Culture and WGS are pending.
    - A whole herd CFT with gamma in parallel was administered in March 2020. This was the assessment test for this herd, and four animals were removed and submitted for necropsy.
    - This herd will complete a feedlot agreement in which the exposed animals will be quarantined at a feedlot until moved directly to slaughter.
- Michigan feedlot #6:
    - As part of the epi investigation of herd #77, five exposed steers were located in the AFZ in a small feedlot with a total of about 50 animals. CFTs were preformed on all five steers and one was a CFT responder. The CFT responder was necropsied and had gross lesions consistent with bTB, was histocompatible at NVSL, and confirmed via PCR in March 2020. Culture and WGS are pending.

February 2020

- Two histo compatible cases were identified during routine slaughter
    - Both were fed steer. One with only unofficial ID, partial tissue match to lesion tissue and Mexican origin noted on the 6-35. The other with official ID, tissue matched the lesion tissue and Mexican origin.
- Michigan herd #77 completed its first round of test and remove in mid February with a total of eight animals removed and submitted for necropsy.

January 2020

- Routine annual surveillance testing in December in the Modified Accredited Zone (MAZ) of Michigan detected seven comparative cervical test (CCT) reactors/suspects in a small beef operation (herd #77). Six of the seven animals had gross lesions consistent with bTB, were histocompatible at NVSL and confirmed via PCR as mycobacterium tuberculosis in January 2020. Culture and whole genome sequencing are pending. This herd will remain under quarantine until it completes a test and remove program.
- One histocompatible case was identified during routine slaughter in an adult dairy cow with unofficial ID only. DNA on included tissue matched lesion. Traced to dairy herd in Texas (TX 20-1), herd test in progress.

December 2019

- One histocompatible case was identified during routine slaughter in a fed cow and traced to a herd in Nebraska that voluntarily sent the remaining animals to slaughter.
- One histocompatible case was identified during routine slaughter in an adult Angus cow and traced to a feedlot in Oklahoma.

November 2019

- One Texas dairy herd successfully completed its test and remove herd plan.

October 2019

- Herd #73 in MI MAZ was released from quarantine mid October 2019, following completion of the test and remove program and implementation of the herd plan, including infrastructure improvements to mitigate wildlife risk.
- A New Mexico herd was released from quarantine following completion of their test and remove program. Their annual post quarantine release assurance test is scheduled for September 2020.

Table 2. Livestock herds confirmed infected with bovine TB and under quarantine. Includes test-and-remove managed herds under quarantine from previous years. Herds will be removed when the quarantine on the TB-affected premises has been released.

Location	Date Detected	Method of Detection	Herd Type	Herd Management Plan
MI-MAZ #79	July 2020	Area Surveillance	Dairy	Test-and-Remove
MI-AFZ #78	March 2020	Epi Investigation	Beef	Feedlot Agreement
MI-MAZ #77	January 2020	Area Surveillance	Beef	Test-and-Remove
TX 20-1	January 2020	Slaughter Trace	Dairy	Test-and-Remove
TX 19-3	August 2019	Slaughter Trace	Beef	Test-and-Remove
NM 19	May 2019	Slaughter Trace	Dairy	Test-and-Remove
MI-AFZ #75	April 2019	Area Surveillance	Beef	Depopulated
TX 19-2	February 2019	Epi Investigation	Calf Raiser	Test-and-Remove
TX 19-1	February 2019	Epi Investigation	Dairy	Test-and-Remove
WI 18	October 2018	Slaughter Trace	Dairy	Test-and Remove
TX 15	June 2015	Slaughter Trace	Dairy	Test-and-Remove

BRUCELLOSIS

New Information

July 2020

- Montana Department of Livestock expanded the Designated Surveillance Area (DSA) boundary based on the detection of a seropositive elk outside the DSA in January 2020. Almost all of the producers within this addition agreed to voluntarily conduct change of ownership and movement testing prior to the regulatory change. This is the 5th expansion in Montana over 10 years due to the presence of seropositive wildlife outside the boundary.

June 2020

- The annual herd test in Dec 2019 for the Montana DSA (MT 10) livestock herd revealed 4 suspects. Retesting of those four suspects in June gave negative results for all four. This constitutes the first negative whole herd test for this herd since being designated as affected in the Fall of 2010.

May 2020

- The affected Wyoming DSA (WY 20-3) beef herd detected in November 2019 completed a final post-calving whole herd in May with negative results. Quarantine was lifted June 2020. An assurance test is scheduled for fall 2020.
- The affected Wyoming DSA (WY 20-1) beef herd detected in November 2019 completed a final post-calving whole herd in mid-May with negative results. Quarantine was lifted May 2020.

April 2020

- The affected Wyoming DSA (WY 20-2) beef herd detected in December 2019 had a post calving test conducted at the end of March with negative results. The herd was released from quarantine in April. Assurance test is scheduled for the fall 2020.
- The affected Wyoming DSA (WY 20-3) beef herd detected in November 2019 has undergone two whole herd tests with negative results. Yearling heifers will be tested mid to late April and final post-calving test will be conducted in late May.
- The affected Montana DSA (MT 20-1) livestock herd detected on an annual test and placed under quarantine in November 2019 will have next whole herd test conducted in fall 2020.
- Idaho DSA (ID 20-1) captive elk/cattle herd detected in November 2019, the cattle herd is managed as a separate epidemiological unit will have an assurance test performed in fall 2020.

March 2020

- The affected Wyoming DSA (WY 20-3) beef herd detected in November 2019 conducted a second whole herd test in mid-March with negative results.
- The affected Wyoming DSA (WY 20-1) beef herd detected in November 2019 has now passed two whole herd tests with negative results. Replacements heifers were bled mid March with negative results. Next herd test will be a post-calving test in May.
- An affected Wyoming DSA (WY 20-2) beef herd detected in December 2019 passed a

second whole herd test in early January with negative results. The post calving test was conducted at the end of March with negative results.

- The affected Wyoming DSA (WY 20-4) bison herd was detected and placed under quarantine in November 2019. A single, two year old bison heifer was found to be a serological reactor in a herd of ~ 600 (female) bison. A partial herd test (~60 head) was negative late March. Herd management practices indicate this herd will employ once per year testing with the next scheduled for December 2020.

February 2020

- An affected Wyoming DSA (WY 20-3) beef herd is undergoing its second whole herd test in March.
- The cattle herd portion of Idaho DSA (ID 20-1) captive elk/cattle herd is being handled as a separate epidemiological unit (adjacent herd) and had a negative whole herd test completed in mid-February.

January 2020

- An affected Wyoming DSA (WY 20-4) bison herd was detected and placed under quarantine in November 2019. A single two year old bison heifer was found to be a serological reactor in a herd of approximately 600 (female) bison. The tissues submitted for culture were negative for *B. abortus* but the herd was designated affected in January 2020 based on serology, the epidemiological investigation, and herd history. Herd management practices indicate this herd will employ once/year testing.
- An Idaho DSA (ID 20-1) captive elk herd was detected from a MCI sample and placed under quarantine in November 2019. Initial whole herd test revealed 3 reactor elk cows, 1 suspect elk cow, and 5 reactor elk bulls. All three elk cows were culture positive for *B. abortus* in January 2020 for samples submitted to NVSL. One of the elk cows was without identification and was believed to be a wild elk that had entered the captive pens and became the transmission source. There is a herd of 510 cattle on the premises under the same owner that will be managed as a separate epidemiological unit.
- An affected Wyoming DSA (WY 20-1) beef herd detected in November 2019 has now passed two whole herd tests with negative results. Next herd test will be a post calving test in late spring.
- An affected Wyoming DSA (WY 20-3) beef herd detected in November 2019 has passed one whole herd test in early January with negative results. Next herd test will be in mid-March.

December 2019

- An affected Wyoming DSA (WY 20-2) beef herd was detected and placed under quarantine in December 2019. A single reactor heifer in a whole herd test was culture positive for *B. abortus* in samples submitted to NVSL. The heifer herd is epidemiologically separate from the cow herd and has passed two whole group tests with negative results. Next herd test will be a post calving test in late spring.
- An affected Montana DSA (MT 20-1) livestock herd was detected on an annual test and placed under quarantine in November 2019. A DSA annual herd test revealed a single three year old reactor cow. This cow was culture positive for *B. abortus* in December 2019 for samples submitted to NVSL. Herd management practices indicate this herd will employ once/year testing. All adjacent premises engage in annual testing also and were all negative.
- An affected Wyoming DSA (WY 20-3) beef herd was detected and placed under

quarantine in November 2019. A single reactor cow was culture positive in December 2019 for *B. abortus* in samples submitted to NVSL. Next whole herd test will be conducted in January.

November 2019

- An affected Wyoming DSA (WY 20-1) beef herd was detected and placed under quarantine in November 2019. Two reactor heifers were found in a herd of approximately 480 head. Only one of the reactors was available for necropsy and it cultured negative for *B. abortus.* The herd was designated as affected based on serology and the epidemiological investigation. This herd has passed two whole herd tests with negative results. Next herd test will be a post calving test in late spring.
- Fall testing of the Montana DSA (MT 10) livestock herd started early November and was completed in December. Testing revealed 4 suspects. Next test is scheduled for fall 2020.

October 2019

- No update.

Table 1. Livestock herds confirmed with brucellosis and under quarantine. Includes test-and-remove managed herds under quarantine from previous years. Herds will be removed when the quarantine on the brucellosis-affected premises has been released.

Location	Date Detected	Method of Detection	Herd Type[a]	Herd Management Plan
WY 20-4	January 2020	DSA Surveillance testing	Bison	Test-and-Remove
ID 20-1	January 2020	DSA Surveillance testing	Elk/Beef	Test-and-Remove
MT 20-1	December 2019	DSA Surveillance testing	Livestock	Test-and-Remove
MT 10	November 2010	DSA Surveillance testing	Livestock	Test-and-Remove