National Bovine Brucellosis and Tuberculosis Updates

Q1 (October-December 2021) Report
Fiscal Year 2022

U.S. Department of Agriculture - Animal and Plant Health Inspection Service
Veterinary Services
Strategy and Policy, Ruminant Health Center
Cattle Health Center
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Brucellosis (*B. abortus*)

FY22 Q1 (Oct-Dec 2021) updates

<table>
<thead>
<tr>
<th>Location</th>
<th>Date Detected</th>
<th>Method of Detection</th>
<th>Herd Type</th>
<th>Herd Management Status</th>
<th>Next Test Tentative Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID 20A</td>
<td>January 2020</td>
<td>DSA Surveillance Testing</td>
<td>Elk/Beef</td>
<td>Test-and-Remove</td>
<td>Fall 2021</td>
</tr>
<tr>
<td>MT 19A</td>
<td>December 2019</td>
<td>DSA Surveillance Testing</td>
<td>Livestock</td>
<td>Test-and-Remove</td>
<td>Fall 2021</td>
</tr>
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<td>MT 10</td>
<td>November 2010</td>
<td>DSA Surveillance Testing</td>
<td>Livestock</td>
<td>Test-and-Remove</td>
<td>October 2021</td>
</tr>
</tbody>
</table>

1. Herds are named with the last 2 digits of the calendar year and in order of occurrence within a state during that year.
2. Current Montana state statute prevents public disclosure of herd type.
Affected herds are mapped to the center of their county.
Brucellosis Affected Herd Updates

- Wyoming 20-5 → Released from quarantine in November 2021.
The orange line represents our annual 350,000 surveillance sample target to detect disease with 95% confidence at a 0.001 percent or higher prevalence.
Tuberculosis (*M. bovis*)

FY22 Q1 (Oct-Dec 2021) updates
Affected herds are mapped to the center of their county.
### TB affected herds under quarantine in FY22 Q1 (Oct-Dec 2021), MI, MT, SD

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<tr>
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<th>Next Test Tentative Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 21A</td>
<td>October 2021</td>
<td>Slaughter Trace</td>
<td>Beef</td>
<td>Depopulation</td>
<td>NA</td>
</tr>
<tr>
<td>SD 21A</td>
<td>March 2021</td>
<td>Slaughter Trace</td>
<td>Beef</td>
<td>Test-and-Remove Phase</td>
<td>TBD</td>
</tr>
<tr>
<td>MI 21-81</td>
<td>March 2021</td>
<td>Area Surveillance</td>
<td>Beef</td>
<td>Test-and-Remove Phase</td>
<td>February 2022</td>
</tr>
<tr>
<td>MI 21-80</td>
<td>November 2020</td>
<td>Movement Test</td>
<td>Beef</td>
<td>Test-and-Remove Phase</td>
<td>December 2021</td>
</tr>
<tr>
<td>MI 20-77</td>
<td>January 2020</td>
<td>Area Surveillance</td>
<td>Beef</td>
<td>Test-and-Remove Phase</td>
<td>October 2021</td>
</tr>
</tbody>
</table>

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1. Herds are named with the last 2 digits of the calendar year and in order of occurrence within a state during that year, with Michigan’s numbers being cumulative across years.
Michigan, and South Dakota Bovine Tuberculosis Affected Herds and Zone Status, December 2021

Affected herds are mapped to the center of their county.
Tuberculosis Affected Herd Updates (MI, MT, SD)

• MT 21A → Slaughter trace from September 2021 led to an affected beef herd in Montana. Depopulation approved.
TB affected herds under quarantine in FY22 Q1 (Oct-Dec 2021), TX, NM, HI

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<tr>
<th>Location</th>
<th>Date Detected</th>
<th>Method of Detection</th>
<th>Herd Type</th>
<th>Herd Management Status</th>
<th>Next Test Tentative Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>HI 21D</td>
<td>Dec. 2021</td>
<td>Movement Test</td>
<td>Beef</td>
<td>Depopulation</td>
<td>NA</td>
</tr>
<tr>
<td>HI 21C</td>
<td>Dec. 2021</td>
<td>Slaughter</td>
<td>Mixed</td>
<td>Depopulation</td>
<td>NA</td>
</tr>
<tr>
<td>NM 20A</td>
<td>October 2020</td>
<td>Assurance Test</td>
<td>Dairy</td>
<td>Test-and-Remove Phase</td>
<td>April 2022</td>
</tr>
<tr>
<td>TX 20B</td>
<td>Sept. 2020</td>
<td>Slaughter Trace</td>
<td>Beef</td>
<td>Test-and-Remove Phase</td>
<td>Fall 2021</td>
</tr>
<tr>
<td>NM 19</td>
<td>May 2019</td>
<td>Slaughter Trace</td>
<td>Dairy</td>
<td>Test-and-Remove Phase</td>
<td>October 2021</td>
</tr>
<tr>
<td>TX 19A</td>
<td>February 2019</td>
<td>Epi Investigation</td>
<td>Dairy</td>
<td>Test-and-Remove Phase</td>
<td>January 2022</td>
</tr>
</tbody>
</table>

1. Herds are named with the last 2 digits of the calendar year and in order of occurrence within a state during that year, with Michigan’s numbers being cumulative across years.
New Mexico and Texas Bovine Tuberculosis
Affected Herds, December 2021

Affected herds are mapped to the center of their county.
Tuberculosis Affected Herds Update (TX, NM, HI)

• HI 21C → Identified from an infected pig on the premises.
  • Cattle classified as exposed and depopulated
  • Whole genome sequence related to the feral swine strain on the island.

• HI 21D → Identified from Whole Herd Testing
  • Cattle herd adjacent to HI 21C; depopulation approved but not yet completed

• History of TB in Hawaii
  • Hawaii obtained "bovine tuberculosis free" status from the USDA in 1993, but it was suspended in 1997 when a 10-year-old cow on Molokai was infected with TB.
    ○ The 10-year-old cow and its herd were depopulated, and Hawaii regained "bovine tuberculosis free" status in 1998.
Bovine TB Cases Identified through Routine Slaughter FY2022 Q1 (Oct-Dec)

<table>
<thead>
<tr>
<th>Slaughter Type</th>
<th>Month confirmed</th>
<th>Slaughter Plant State</th>
<th>Slaughter Origin State</th>
<th>Outcome/current status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Cull</td>
<td>Oct. 2021</td>
<td>MN</td>
<td>MT</td>
<td>Traced to herd in MT, WHT in progress.</td>
</tr>
</tbody>
</table>
Tuberculosis (*M. bovis*)

Terms and Definitions
Designation of Herds as “Quarantined”

• Affected herds are considered “quarantined” due to a formal quarantine order of the entire herd or informal hold order for subgroups of exposed animals.

• Herds under quarantine due to tracing investigations are generally excluded from this report due to the temporary nature of their restrictions.

• Quarantined herds are removed from this report once the quarantine or hold order is removed, typically after verification testing.
Methods of Detection of TB-Affected Herds

• **Area surveillance**: Surveillance in a defined area such as counties in or bordering the modified accredited zone in Michigan.

• **Assurance test**: Herds identified during the assurance testing phase of a test and remove herd plan.

• **Epi investigation**: Herds identified as part of epidemiologic investigations associated with TB-affected animals or TB-affected herds.

• **Movement test**: Herds identified through testing of animals for routine movements, e.g., export and interstate commerce.

• **Slaughter trace**: Herds identified as the source of animals with suspicious lesions during routine slaughter surveillance. Also called “6-35 traces”
Definitions and Acronyms

- **6-35 Trace**: Tracing of the source of a suspected or confirmed case of TB that was identified during slaughter surveillance and reported on a VS 6-35 form; known otherwise as a “slaughter trace.”
- **M. bovis**: *Mycobacterium bovis*, known as bovine or zoonotic tuberculosis
- **NGL**: No gross lesions on postmortem examination
- **NVSL**: National Veterinary Services Laboratories
- **PCR**: Polymerase Chain Reaction; A molecular biology method of assessing for presence of segments of generic material, i.e., DNA and RNA
- **WGS**: Whole Genome Sequencing of TB bacterial DNA; used to assess relatedness among TB bacterial strains
Definitions and Acronyms

- **WHT**: Whole herd test
Questions?

• Please contact the Cattle Health Center at: vs.sp.chc.all@usda.gov