National Bovine Brucellosis and Tuberculosis Updates

Q1 (October-December 2023) Report
Fiscal Year 2024

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*)

FY24 Q1 (Oct.-Dec. 2023) Updates
Affected herds are mapped to the center of their county.
### Brucellosis Affected Herds Under Quarantine Q1 (Oct.- Dec.2023)

<table>
<thead>
<tr>
<th>Herd¹</th>
<th>Date Detected</th>
<th>Method of Detection</th>
<th>Herd Type²</th>
<th>Herd Management Status</th>
<th>Next Test Tentative Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT 10</td>
<td>November 2010</td>
<td>DSA Surveillance Testing</td>
<td>Livestock</td>
<td>Test and Remove</td>
<td>Fall 2023</td>
</tr>
<tr>
<td>MT 19</td>
<td>December 2019</td>
<td>DSA Surveillance Testing</td>
<td>Livestock</td>
<td>Test and Remove</td>
<td>Fall 2023</td>
</tr>
<tr>
<td>ID 20A</td>
<td>January 2020</td>
<td>DSA Surveillance Testing</td>
<td>Elk</td>
<td>Test and Remove</td>
<td>Spring 2025</td>
</tr>
<tr>
<td>WY 22A</td>
<td>December 2022</td>
<td>DSA Surveillance Testing</td>
<td>Beef</td>
<td>Test and Remove</td>
<td>Fall 2023</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.
### Brucellosis Affected Herds Under Quarantine Q1 (Oct.-Dec.2023)

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</tr>
</thead>
<tbody>
<tr>
<td>MT 23A</td>
<td>May 2023</td>
<td>Livestock Market</td>
<td>Livestock</td>
<td>Test and Remove</td>
<td>Fall 2023</td>
</tr>
<tr>
<td>WY 23A</td>
<td>June 2023</td>
<td>Slaughter</td>
<td>Beef</td>
<td>Depopulation</td>
<td>N/A</td>
</tr>
<tr>
<td>WY 23B</td>
<td>November 2023</td>
<td>Livestock Market</td>
<td>Beef</td>
<td>Test and Remove</td>
<td>Spring 2024</td>
</tr>
<tr>
<td>ID 23A</td>
<td>September 2023</td>
<td>DSA Surveillance Testing</td>
<td>Beef</td>
<td>Test and Remove</td>
<td>Fall 2023</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.
Brucellosis Affected Herds Under Quarantine Q1 (Oct.-Dec.2023)

- **WY 23A** Identified through routine slaughter surveillance
  - First WHT completed June 2023 and revealed 7 reactors with 6 out of 7 being culture positive
  - Second WHT completed August 2023 and revealed 1 reactor
  - Herd elected to depopulate remaining intact cattle
  - Herd is outside of the DSA and the epidemiologic investigation is ongoing

- **WY 23B** Identified through routine market testing surveillance
  - First WHT completed November 2023 and revealed 2 reactors confirmed culture positive
  - Hold order in place November 2023 and quarantined
  - Testing plan is scheduled for May/Nov/Post-calving respectively
  - Herd is in DSA and the epidemiologic investigation is ongoing

- **ID 23A** Identified through market testing
  - Reactor found through routine market testing was culture positive September 2023
  - Traced to a herd in the DSA and whole herd test is scheduled for Fall 2023
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 (\textit{M. bovis})

FY24 Q1 (Oct.- Dec.) Updates
### TB Affected Herds Under Quarantine Q1 (Oct.-Dec.2023)

<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>TX 19A</td>
<td>February 2019</td>
<td>Epi Investigation</td>
<td>Dairy</td>
<td>Test and Remove Phase</td>
<td>Pending</td>
</tr>
<tr>
<td>NM 22B*</td>
<td>July 2022</td>
<td>Epi Investigation</td>
<td>Dairy</td>
<td>Test and Remove Phase</td>
<td>Results Pending</td>
</tr>
<tr>
<td>TX 22A*</td>
<td>July 2022</td>
<td>Movement Testing</td>
<td>Dairy</td>
<td>Test and Remove Phase</td>
<td>Results Pending</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

* These herds are under the same ownership
Affected herds are mapped to the center of their county.
TB Affected Herds Under Quarantine Q1 (Oct.-Dec.2023)

- TX 19A → Removal test (11th) completed July 2023
  - Cultures pending

- NM 22B → still conducting WHTs of herds within complex
  - Confirmed July 2022
  - Test-and-Remove Model completed by CEAH
  - Removal test (5th) Sept. 2023
  - Removal test (6th) completed Dec. 2023- Results Pending
TB Affected Herds Under Quarantine Q1 (Oct.-Dec.2023)

- TX 22A → Still conducting WHTs of herds within complex
  - Confirmed July 2022
  - Test-and-Remove Model completed by CEAH
  - Epidemiologically linked to NM 22B
  - Removal test (5th) Sept. 2023
  - Removal test (6th) completed Dec. 2023-Results Pending
Cumulative Bovine TB Cases Identified through Routine Slaughter by Fiscal Year

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Case Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>12</td>
</tr>
<tr>
<td>2019</td>
<td>10</td>
</tr>
<tr>
<td>2020</td>
<td>8</td>
</tr>
<tr>
<td>2021</td>
<td>14</td>
</tr>
<tr>
<td>2022</td>
<td>4</td>
</tr>
<tr>
<td>2023</td>
<td>4</td>
</tr>
<tr>
<td>2024</td>
<td>2</td>
</tr>
</tbody>
</table>

### Table:

<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>Beef</td>
<td>July 2023</td>
<td>SD</td>
<td>SD</td>
<td>Verification Testing Jan. 2024</td>
</tr>
<tr>
<td>Beef</td>
<td>October 2023</td>
<td>MI</td>
<td>MI</td>
<td>Assurance Testing Pending</td>
</tr>
<tr>
<td>Beef</td>
<td>December 2023</td>
<td>NE</td>
<td>CO</td>
<td>Under Investigation</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.
TB Test-and-Removal Protocol – VS Memo 552.47

• Consist of 3 stages:
  1) Removal Testing
  2) Verification Testing
  3) Assurance Testing

• To release a herd from quarantine:
  • Two consecutive removal tests must be completed without evidence of M.bovis infection.
  • 2nd removal test must achieve a 95% or greater confidence level the herd is TB-free.
  • Verification test must be conducted and achieve a confidence level of 95% or greater that the herd is TB-free.
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.”
- **DSA:** Designated Surveillance Area
- **IFG:** Interferon gamma
- **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
- **Q Released**: Quarantine released
Questions?

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