National Bovine Brucellosis and Tuberculosis Updates

Q3 (April- June 2023) Report
Fiscal Year 2023

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*)

FY23 Q3 (April-June 2023) Updates
Affected herds are mapped to the center of their county.
### Brucellosis Affected Herds Under Quarantine Q3 (April-June 2023)

<table>
<thead>
<tr>
<th>Herd&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Date Detected</th>
<th>Method of Detection</th>
<th>Herd Type&lt;sup&gt;2&lt;/sup&gt;</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 Q3 (April-June 2023)**

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<tr>
<th>Herd&lt;sup&gt;1&lt;/sup&gt;</th>
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<th>Herd Type&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Herd Management Status</th>
<th>Next Test Tentative Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT23</td>
<td>May 2023</td>
<td>Livestock Market</td>
<td>Livestock</td>
<td>Test and Remove</td>
<td>Pending</td>
</tr>
<tr>
<td>WY 23A</td>
<td>June 2023</td>
<td>Slaughter</td>
<td>Beef</td>
<td>Test and Remove</td>
<td>Pending</td>
</tr>
</tbody>
</table>

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2. Current Montana state statute prevents public disclosure of herd type.
Brucellosis Affected Herds Under Quarantine Q3 (April-June 2023)

• MT 10 → Identified on DSA Surveillance Testing
  • WHT completed Winter 2023
  • Assurance testing planned for Fall 2023

• MT 19 → Identified on DSA Surveillance Testing
  • Culture positive identified during Fall 2021 WHT
  • WHT completed Winter 2023
  • Assurance testing planned for Fall 2023

• ID 20A → Identified on DSA Surveillance Testing
  • WHT planned for Spring 2025
Brucellosis Affected Herds Under Quarantine Q3 (April-June 2023)

• WY 22A  ➔ Identified on DSA Surveillance Testing
  • First WHT in December revealed a suspect heifer which was removed
  • Second WHT was negative
  • Next WHT planned for Fall 2023

• MT23 ➔ Identified on DSA Surveillance Testing
  • First WHT completed in May 2023 with all negative results
  • Next WHT planned for Fall 2023

• WY 23A ➔ Identified through routine slaughter surveillance
  • First WHT completed June 2023 and revealed 7 reactors
  • Culture results are pending
  • Herd is outside of the DSA and the epidemiologic investigation is ongoing
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)

FY23 Q3 (April-June) Updates
Affected herds are mapped to the center of their county.
Affected herds are mapped to the center of their county.
## TB Affected Herds Under Quarantine Q3 (April-June 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 19</td>
<td>May 2019</td>
<td>Slaughter Trace</td>
<td>Dairy</td>
<td>Test and Remove Phase</td>
<td>Pending Verification Test Results</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>Sept. 2023</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>Sept. 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

* These herds are under the same ownership
TB Affected Herds Under Quarantine Q3 (April-June 2023)

• TX 19A ➔ Removal test (11th) planned for July 2023

• NM 19 ➔ Verification test completed May 2023, pending culture results
TB Affected Herds Under Quarantine Q3 (April-June 2023)

- **NM 22B** → still conducting WHTs of herds within complex
  - Confirmed July 2022
  - Test-and-Remove Model completed by CEAH
  - Removal test (4th) June 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 (4th) June 2023
## Cumulative Bovine TB Cases Identified through Routine Slaughter FY23

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Case Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>12</td>
</tr>
<tr>
<td>2019</td>
<td>8</td>
</tr>
<tr>
<td>2020</td>
<td>7</td>
</tr>
<tr>
<td>2021</td>
<td>10</td>
</tr>
<tr>
<td>2022</td>
<td>3</td>
</tr>
<tr>
<td>2023</td>
<td>2</td>
</tr>
</tbody>
</table>

### Table: Slaughter FY23

<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>December 2022</td>
<td>MI</td>
<td>MI</td>
<td>Trace Completed- Assessment Testing Fall 2023</td>
</tr>
<tr>
<td>Beef</td>
<td>February 2023</td>
<td>MI</td>
<td>MI</td>
<td>Trace completed</td>
</tr>
<tr>
<td>Beef</td>
<td>February 2023</td>
<td>NE</td>
<td>CAN</td>
<td>CAN Officials conducting 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