National Bovine Brucellosis and Tuberculosis Updates

Q4 (July- September 2022) 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
Table of Contents

**Brucellosis (B. abortus)**
- Affected herds map and updates
- National slaughter surveillance samples

**Tuberculosis (M. bovis)**
- Affected herds map and updates
- Bovine TB cases found through routine slaughter
- TB terms and definitions
Brucellosis (\textit{B. abortus})

FY22 Q4 (July-Sept. 2022) Updates
Affected herds are mapped to the center of their county.
## Brucellosis Affected Herds Under Quarantine in Q4 (July-Sept. 2022)

<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>November 2022</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 2022</td>
</tr>
<tr>
<td>ID 20A</td>
<td>January 2020</td>
<td>DSA Surveillance Testing</td>
<td>Elk/Beef</td>
<td>Test and Remove</td>
<td>November 2022</td>
</tr>
<tr>
<td>MT 21A</td>
<td>November 2021</td>
<td>DSA Surveillance Testing</td>
<td>Livestock</td>
<td>Test and Remove</td>
<td>Assurance Test Dec. 2022</td>
</tr>
<tr>
<td>MT 22A</td>
<td>January 2022</td>
<td>DSA Surveillance Testing</td>
<td>Livestock</td>
<td>Test and Remove</td>
<td>Completed</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 Herd Updates

• Montana 19 → Identified on DSA Surveillance Testing
  • Culture positive identified during Fall 2021 WHT
  • WHT Completed Fall 2022

• ID 20A → Identified on DSA Surveillance Testing
  • Last WHT negative
  • Next WHT late November 2022
Brucellosis Affected Herd Updates

- **Montana 21A** → Livestock herd identified on routine herd testing.
  - Identified November 2021
  - Test and remove management plan
  - All adjacent/contact herds have tested negative
  - **Post-calving testing completed**

- **Montana 22A** → Livestock herd identified on routine herd testing.
  - Identified January 2022
  - Test and remove management plan
  - All adjacent/contact herds have tested negative
  - Final WHT completed March 2022
  - Quarantine released April 2022
  - **No suspects on assurance testing conducted Fall 2022**
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 Q4 (July- Sept. 2022) Updates
Affected herds are mapped to the center of their county.
## TB Affected Herd Updates FY22 Q4 (July-Sept. 2022)

<table>
<thead>
<tr>
<th>Location¹</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>December 2021</td>
<td>Epi Investigation</td>
<td>Beef</td>
<td>Depopulation Completed</td>
<td>Completed</td>
</tr>
<tr>
<td>HI 22A</td>
<td>January 2022</td>
<td>Epi Investigation</td>
<td>Beef</td>
<td>Depopulation in Progress</td>
<td>N/A</td>
</tr>
<tr>
<td>HI 22B</td>
<td>March 2022</td>
<td>Epi Investigation</td>
<td>Beef</td>
<td>Depopulation Completed</td>
<td>Completed*</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.

* = 1 animal unable to be traced; assumed deceased
Tuberculosis Affected Herd Updates FY 22 Q4 - Hawaii

• HI 21D ➔ Identified from Whole Herd Testing
  • Cattle herd adjacent to HI 21C
  • Depopulation completed

• HI 22A ➔ Identified from epidemiologic investigation
  • Test-and-Remove Model completed by CEAH
  • Depopulation in progress

• HI 22B ➔ Identified from epidemiologic investigation
  • Depopulation completed
Affected herds are mapped to the center of their county.
TB Affected Herd Updates FY22 Q4 (July-Sept.2022)

<table>
<thead>
<tr>
<th>Location¹</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>MI 22-82</td>
<td>January 2022</td>
<td>Surveillance</td>
<td>Dairy</td>
<td>Test and Remove Phase</td>
<td>Verification Test Jan. 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, with Michigan’s numbers being cumulative across years.
Tuberculosis Affected Herd Updates FY 22 Q4- Michigan

• MI 22-82 \(\rightarrow\) Identified on annual Modified Accredited Zone (MAZ) surveillance
  • 1\textsuperscript{st} removal test completed with one cow NGL
  • 2\textsuperscript{nd} removal test completed May 2022
  • 3\textsuperscript{rd} removal test completed July 2022
  • Verification test planned for January 2023
Affected herds are mapped to the center of their county.
## TB Affected Herd Updates FY22 Q4 (July- Sept. 2022)- TX, NM

<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>November 2022</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 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>Assurance Test July 2023</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>Assurance Test August 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, with Michigan’s numbers being cumulative across years.
Tuberculosis Affected Herd Updates FY 22 Q4- TX, NM

- TX 19A → Removal test (9th) completed July 2022
  - Next removal test scheduled for November 2022

- NM 19 → Removal test (14th) scheduled for October 2022
  - 1 positive (+culture) cow identified on Oct. 2021 herd test

- TX 20B → Herd test completed in June 2022 with no suspects
  - Q released July 2022
  - Assurance test scheduled for July 2023

- NM 20A → Assurance test scheduled for August 2023
  - 5th removal test completed Oct. 2021 with all negative
  - Culture from verification test negative; quarantine released August 2022
Tuberculosis Affected Herd Updates (TX,NM)

- NM 22B ➔ still conducting WHTs of herds within complex
  - Confirmed July 2022
  - Test-and-Remove Model completed by CEAH

- TX 22A ➔ Still conducting WHTs of herds within complex
  - Confirmed July 2022
  - Test-and-Remove Model completed by CEAH
  - Epidemiologically linked to NM 22B
## Bovine TB Cases Identified through Routine Slaughter FY2022 Q4 (July- Sept.2022)

<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></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No slaughter cases identified in FY 22 Q4**
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.”
- **DSA**: Designated Surveillance Area
- **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