National Bovine TB Eradication Program Update

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U.S. Department of Agriculture
Animal and Plant Health Inspection Service
Veterinary Services
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United States Tuberculosis Zone Status

TB Status as of October, 2014

- **TB Free**
- **Modified Accredited Advanced**
- **Modified Accredited**

Puerto Rico
Affected Cattle and Cervid Herds, FY 1987-2014
Affected Herds, By State, FY 1998-2014\(^1\)

129 herds - 61% beef, 29% dairy, 2% mixed, 9% captive cervid. Wildlife involvement in Michigan and Minnesota.
TB Granuloma Submissions and Submission Rate, FY00 through 3rd Qtr FY 2014
Granuloma Lesion Submission in “Top 40” Adult Cattle Slaughter Plants, October 1, 2013–June 30, 2014

- ≥ 1 lesion/2,000 adult cattle slaughtered (36)
- < 1 lesion/2,000 adult cattle slaughtered (4)

TB Status as of October, 2014
- TB Free
- Modified Accredited Advanced
- Modified Accredited
M. bovis Positive Cattle from Slaughter Surveillance, FY 2001–2014

1437 total cases including 52 in adult and 385 in fed cattle including 302 cases (78.4%) in Mexican origin fed cattle
FY 2014 Slaughter Surveillance Cases

15 Histocompatible cases
- 11 Confirmed *M. bovis* cases
- 4 Not *M. bovis* cases

3 Adult cattle cases
- 1 TX beef – infection not confirmed in herd
- 1 NE beef – infection not confirmed in herd
- 1 CA/UT – investigation ongoing

8 Fed cattle cases
- 1 Sinaloa, MX
- 1 Coahuila, MX
- 1 Veracruz, MX
- 3 Holstein steers, Michigan
- 2 Holstein steers, Iowa/Nebraska/Michigan
## FY 2014 Affected Herds

<table>
<thead>
<tr>
<th>State</th>
<th>County</th>
<th>Herd Type</th>
<th>Size</th>
<th>Disclosed By</th>
<th>Herd Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Dakota</td>
<td>Mercer</td>
<td>Dairy</td>
<td>521</td>
<td>Public Health Investigation</td>
<td>Test and remove</td>
</tr>
<tr>
<td>Michigan</td>
<td>Oscoda</td>
<td>Bison</td>
<td>5</td>
<td>Surveillance</td>
<td>Depopulation</td>
</tr>
</tbody>
</table>
Animal Identification Data
From TB Slaughter Surveillance Submissions

USAHA RESOLUTION 29
Animal Identification Submitted for TB Slaughter Surveillance

• USAHA Resolution 29
  – Improve animal identification device collection and recording
  – Report findings to USAHA

• Accomplishments
  – IT and SOP developed at NVSL
    • Created new database fields
    • Official ID defined as any with official shield
    • Personnel trained

• Timeline
  – Data entry began late April 2014
  – Preliminary report 2014, annual update thereafter
Animal Identification Submitted for TB Slaughter Surveillance – Preliminary Results

- Time period: April 14–June 30, 2014
- 935 submissions with animal ID entered
- Type of ID collected
  - Any official ID \( \frac{520}{935} = 55.6\% \)
  - Unofficial ID only \( \frac{224}{935} = 24.0\% \)
  - No ID \( \frac{191}{935} = 20.4\% \)
- Future analysis will include results by individual slaughter establishment
LIVE ANIMAL TESTING

Skin testing, cattle and bison
Gamma interferon testing
Cervid skin and serology testing
Caudal Fold Testing (CFT) in Cattle and Bison, FY 2006-2014

FY 2014 partial year through August 31, 2014, with 41 States and one Territory reporting, n=474,574 CFT tests administered. Source: Veterinary Services District Offices and SCS database
Caudal Fold Test Response Fraction by State, Cattle and Bison, FY 2013

Results for 45 states with > 300 tests, n=944,309 CFT tests administered. States and territories with < 300 tests include AK, HI, MS, NJ, RI and PR. Source: Veterinary Services District Offices and SCS database.
Bovine Interferon Gamma Tests, FY 2006-2014

• Approved as supplemental test – either CCT or interferon gamma
• Commercial test kit (Bovigam™) by Prionics®
• Single tube of blood taken at CFT reading
• Six approved labs: CA, CO, MI, NV, TX, WA, and NVSL
• Approved for use in cattle only

1Provisional data for FY 2014 through July 31, 2014. Source: State laboratories and NVSL
### Single Cervical Test Performance – Cervids
#### FY 2006–2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Cervids Tested</th>
<th>SCT Suspects</th>
<th>Response Rate&lt;sup&gt;2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>25,421</td>
<td>374</td>
<td>1.5%</td>
</tr>
<tr>
<td>2007</td>
<td>10,353</td>
<td>231</td>
<td>2.2%</td>
</tr>
<tr>
<td>2008</td>
<td>19,147</td>
<td>287</td>
<td>1.5%</td>
</tr>
<tr>
<td>2009</td>
<td>21,473</td>
<td>381</td>
<td>1.8%</td>
</tr>
<tr>
<td>2010</td>
<td>11,029</td>
<td>182</td>
<td>1.7%</td>
</tr>
<tr>
<td>2011</td>
<td>22,350</td>
<td>354</td>
<td>1.6%</td>
</tr>
<tr>
<td>2012&lt;sup&gt;1&lt;/sup&gt;</td>
<td>19,721</td>
<td>368</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

<sup>1</sup>FY 2012 for the period Oct 1, 2011 – Aug 31, 2012

<sup>2</sup>The expected response rate for cervids has not been determined.

Source: AWBDS and Area Offices
Cervid Serological TB Testing

• 16,300 cervids have been tested in FY 2014
  – 13,142 white-tailed deer (80.5 percent)
  – 2,604 elk (16 percent)
  – 375 fallow deer (2.3 percent)
  – 156 red deer (1.0 percent)
  – 23 reindeer (0.14 percent)

• Statistically developed optical density reader cut-off values are used to determine if the sample is negative or positive on the DPP test
# Cervid Serologic TB Testing, FY 2014

Testing With DPP as Primary and Secondary Test

<table>
<thead>
<tr>
<th>Species</th>
<th>No. DPP Tests for each species</th>
<th>No./% 1st DPP Positive</th>
<th>No./% 2nd DPP Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elk</td>
<td>1101</td>
<td>4 or 0.36%</td>
<td>3 or 0.27%</td>
</tr>
<tr>
<td>Red deer</td>
<td>68</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>White-tailed deer</td>
<td>4718</td>
<td>8 or 0.17%</td>
<td>3 or 0.06%</td>
</tr>
<tr>
<td>Fallow deer</td>
<td>119</td>
<td>1 or 0.8%</td>
<td>0</td>
</tr>
<tr>
<td>Reindeer</td>
<td>19</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>6025</td>
<td>13 or 0.22%</td>
<td>6 or 0.09%</td>
</tr>
</tbody>
</table>

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1Through September 27, 2014

Note: Stat-Pak testing ended in March 2014. All DPP results based on OD reader cut off points previously established. No DPP positive animals necropsied have cultured positive for *M. bovis*. 
Cervid Serological TB Testing

• Production of the CervidTB Stat-Pak was discontinued by the manufacturer in 2014

• VS revised the guidance document, VSG 6701.2 and amended the 9 CFR 77.34 to make the DPP the primary test and also the secondary post 30 day test

• NVSL started testing of serum samples with the DPP as both the primary test and secondary test in March 2014
TB Serum Bank

• A repository of well-characterized serum samples for evaluation of developmental serological tests at the NVSL.
• Samples collected in collaboration with Mexico, United Kingdom, and Canada
• Includes
  – 2792 serum samples from cattle (444 are from infected animals)
  – 3584 samples from cervids (92 are from infected animals)
• Samples are welcome, especially from TB test positive animals going to necropsy
Other Activities

- TB slaughter surveillance awards guidance document updated effective FY15
- EMRS2 implemented for TB traces
- Lelystad tuberculin currently under evaluation in Michigan; produced by Prionics, Netherlands
- Evaluation of new and developmental tests being planned for FY 2015
  - IDEXX serologic test in recently imported Mexican origin fed cattle
  - A synthetic tuberculin produced by *E. coli* that expresses specific *M. bovis* antigens
- Developing a bovine qualified accredited veterinarian (QAV) standard
- Development of Cattle Health Sharepoint site for VS
Collaborations with Mexico

- Regular meetings of VS and SAGARPA
- Joint Strategic Plan finalized Dec 2013
- APHIS has participated in pre-certification reviews in seven Mexican States
- APHIS conducted State TB Program Reviews in Chihuahua and Sonora
- As a result of the review, APHIS VS advanced Chihuahua’s A zone from accreditation preparatory to modified accredited for 12 months beginning July 1, 2014
- APHIS participated in two courses organized by Mexico on bovine TB epidemiology, infected herd management, and TB surveillance in Zacatecas and Hidalgo.

Map courtesy of SAGARPA
Proposed TB/Brucellosis Regulations
Next Steps and Timeline

• In Progress
  – Departmental review of the proposed rule and program standards

• Calendar year 2015
  – Publish proposed rule in the Federal Register
  – Post program standards on www.regulations.gov
Questions?