Infected Cattle Herd and Circle Testing in Ottawa County

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Overview

• Historical Significance of Bovine Tuberculosis (TB)
• How U.S. and Michigan Addressed TB Problem
• TB Positive Herd in Ottawa County
• Circle Testing
• Questions and Answers
Historical Significance of Bovine TB
Bovine TB’s Impact on Human Health

• In 1900, TB was the leading cause of death in people

• 25% of TB cases in children were caused by “bovine” TB

• Likely 20%-30% of all human TB cases in 1900 were related to cattle or cattle products
Bovine TB’s Impact on Agriculture

- In 1915, 10% of dairy cattle and 2% of beef cattle were infected.

- In 1917, 2/3 of all condemned carcasses were because of TB.

- In 1906 TB cost the US economy $1.1 million/year ($430 billion/year now).
How The US Addressed the Problem
Since the 1920’s, pasteurization has ensured milk safety.

USDA Food Safety and Inspection Service continues to monitor for disease during meat processing.

- Of the 32 million cattle processed annually, bovine TB is identified less than 30 times per year.
Cattle TB Program

• **1917:** National Bovine TB Eradication Program established

• **1979:** Michigan gained bovine TB free status
  • Presently 95% of Michigan counties have TB free status

• Having TB free status does not mean disease doesn’t appear in a state occasionally
TB in USA Since 2013

- 2013 – MI, CA, ND, WA
- 2014 – MI, TX
- 2015 – MI, TX
- 2016 – MI, IN
- 2017 – MI, SD, NM, NE
Bovine TB in Indiana

• 2009 – beef herd – Franklin Co.
• 2009 – farmed deer – Franklin Co.
• 2011 – beef herd – Dearborn Co.
• 2016 – beef herd – Franklin Co.
• 2016 – 1 free-ranging deer – Franklin Co.
• 2016 – beef herd – Franklin Co.
TB Positive Herd in Ottawa County
Ottawa County Herd Time Line

December 19
Two animals with lesions at processor-samples sent to lab

December 22
Quarantine placed and investigations started

January 5
Lab confirmed bovine TB

January 23
Cattle removed and samples sent to lab

February 2
Genotyping confirmed Indiana link

Current status of infected herd:
Depopulated – January 23, 2018
Cleaning and disinfecting premises – Pending
TB Genome Testing

• Similar to DNA testing in people, we can sequence the TB genome to see what it’s related to

• When we find bovine TB we compare it’s genome to past cases to see if it’s related

• This test takes five to eight weeks to complete

• This testing confirmed the Ottawa County animal had the same bovine TB as the bovine TB found in Indiana
Circle Testing
Why We Test

- Testing around an infected herd is required by law
  - Size of circle testing is determined by USDA

- Testing ensures that bovine TB hasn’t spread to nearby farms
Herds in the Circle

- Herds are not under quarantine until testing begins
- Quarantine released once the TB test is completed
- All cattle herds in circle must be tested unless:
  - No cattle on premises until after Jan. 23, 2018
  - Arrange herd plan to test later
  - Feedlot agreement to only sell to slaughter
Requirements of Testing

• Each herd must test within six months

• If testing is not complete by August 14, 2018, the herd will be placed under quarantine

• Herds may use private veterinarian to TB test if they have a fee-basis contract with MDARD
  • No charge for test with either a MDARD, USDA, or private veterinarian
What Animals are Tested

- Cattle and bison 12 months or older
- All cattle and bison of any age not born in herd
- Goats six months or older that are housed with cattle or bison
- Farmed deer 12 months or older that are housed with cattle or bison
Herd Testing Days

• Each animal must be uniquely identified with official ID
  • RFID is not required

• Discuss handling equipment with your veterinarian

• Make sure you have adequate help for both testing days
Test 1: Caudal Fold Test (CFT)

• First screening step in the TB-testing process

• Tuberculin injected between the layers of the skin, under the tail

• Injection site examined 72 hours later, plus or minus six hours
Test 1: Caudal Fold Testing (CFT)

- The veterinarian will examine the injection site for a “response”
  - Swelling, redness or hardness

- 5-7% will respond - animal may have been exposed to another disease like bird TB or Johne’s Disease

- Animals that respond (suspects) will need further testing
  - If only one animal responds, the herd is still under quarantine
Test 2: Comparative Cervical Testing (CCT)

• The comparative cervical test is the second test for suspect animals

• Test distinguishes between bovine TB and bird TB

• Two injections on the neck and evaluation three days later—Negative, Suspect or Reactor
Laboratory Testing

• Just because an animal responds to both tests doesn’t mean it has bovine TB

• Suspect animals are taken for necropsy where veterinarians look for:
  • Internal lesions, swollen lymph nodes and other signs of disease
Laboratory Testing

• When signs of bovine TB are found, samples are collected and a microscopic lab test is conducted

• Simultaneously, the lab will also start a culture and attempt to “grow” the bovine TB

• The culture will only “grow” if it is bovine TB positive
  • If nothing has grown after two months the culture is negative
Testing Timeline

At this point there could be re-testing options that may affect the timeline.

- **On-Farm Test 1 (CFT)**: 3 days
- **On-Farm Test 2 (CCT)**: 3 days
- **On-Farm Evaluation Found Swelling**: varies
- **Animal Sent for Necropsy**: 1 day
- **Tissue Samples Sent for Testing**: 2-3 days
- **Results Confirmed**
Quarantine is released when:

• There are no suspect animals after the first or second test

OR

• If there were suspects after the second test:
  • There are no signs of bovine TB when the animal goes for necropsy
  • The microscopic test is negative
  • Exceptions: Animals with lesions/positive microscopic test at necropsy or CCT reactors
Scheduling Testing

• Call Torri Nighbert at 517-284-5675

• Need to call even if you are using a private veterinarian
Questions?

Stay connected with MDARD.

@MichDeptoAg  Mlagriculture  Michigan Department of Agriculture  Michigan Department of Agriculture  @Michiganagriculture
Bovine TB in Michigan

- First bovine TB positive cattle herd detected in Alpena in 1998
- Statewide testing from 2000-2003
- Since 1998, bovine TB found in 72 cattle herds and five feedlots
Since 1998:

- Bovine TB found in seven counties in northern Lower Peninsula 1998-2016
- Bovine TB found in five counties associated with Saginaw dairy herd in 2013-2014
- Two herds linked to bovine TB in NE Lower Peninsula in 2016-2017
- One herd linked to bovine TB from Indiana in 2017 and two in 2018