Epidemiologic Review of *Mycobacterium bovis* Infection in South Dakota Beef Herds

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South Dakota Animal Industry Board
TB affected counties in South Dakota
Harding County Index Herd

- Long-time family ranch
- 9,000 acres on 3 sites
- 550 Spring calving cows, 100 heifers
- Keep replacement heifers, supplement with purchases from neighbors, local auction markets
- Sell calves in fall, cull cows and bulls through local auction market
Testing in the Index herd

78 CFT responders/653 (12%)

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<tr>
<th>CCT Status</th>
<th>N hd.</th>
<th>Infected</th>
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<tr>
<td>Reactor</td>
<td>27</td>
<td>23 (85%)</td>
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<td>Suspect</td>
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<td>7 (50%)</td>
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<td>Negative</td>
<td>37</td>
<td>8 (22%)</td>
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78 CFT responders/653 (12%)
Investigation of infected and exposed herds

1. Trace Outs – 195 traces
   – Private Sales - 67
   – Auction Markets - 128

2. Contact Herds – 13
   – Fence line and neighbors

3. Trace In Herds - 21
   – Source Herds
Harding county TB investigation

- Index herd
- Herd #2 (Harding) – Contact herd
  - 1 infected animal, Negative herd test
- Herd #3 (Butte) – Trace-out herd
  - 1 infected animal, Negative herd test
284 traces to 12 states
10,249 hd.
Index Herd Harding County

Backgrounder Roberts County

Livestock Auction Market

Private Sales

2013
2014
2015
2016
SD Change of Ownership Requirement

- **All cattle or buffalo for breeding purposes over 18 months of age shall have official identification recorded when a change of ownership occurs.**
  
  (SD Admin Rule 12:68:05:02.02)

- Official ID: metal tag, AIN tag, registration tattoo
- Applies to all sales – public and private
- Reports are sent to AIB
Tracing exposed cattle
Index herd disposition

• CEAH modeling
  – Depopulate?
  – Test and remove?

• Availability of Indemnity funds?

• Shipping to slaughter
  – Plant willingness to deal with the hassle
  – Shipping cost reimbursement?

• Restocking costs
Test and Remove Plans

• Two negative Removal tests at least 60 days apart.
• Verification test 6 months later
  – Quarantine released
• Annual Assurance testing – 5 years
Other species on infected premises

- Horses
- Sheep
- Dogs
- Cats
Wildlife surveillance

• Targeted Surveillance in Susceptible species
• 55 white-tailed deer
• 56 mule deer
• 42 pronghorn
• 9 raccoons
• 37 coyotes
How did bTB get into SD?
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bTB

- bTB occurs rarely, but has significant economic impact to affected producers.
- ID and accurate records assist in successful traceback.
- Limited availability of indemnity funds threatens future timely response.
- Novel diagnostic tools are needed to aid in test and removal plans to allow for continuity of business.