Bovine Tuberculosis - Texas Situation Report

Presented by
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Texas Animal Health Commission

SAHA 2015

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TB Cases in Texas, CY 2014 - 2015

• Two cases in separate lots of feeder animals imported from Mexico
• Two dairy complex investigations:
  – 2014 Dairy Complex: Two large dairies and associated feed yard, first confirmed in October 2014
  – 2015 Dairy Complex: Two organic dairies and an associated feed yard, first confirmed in June 2015

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Two Concurrent TB Investigations

Facilities of Interest – Miles Apart
2014 Dairy Herd 1

- Located in Texas panhandle
- Dairy established in 2003, total approx. 10,500 head, moved from California and purchased in Texas
- 4800 cows in milking string
- 5700 dry/springer/calves
- All heifers raised in-house, bull calves sent to feed yard
- Overflow heifers and cows sent to co-owned dairy (Herd 2)

Typical Dairy in Texas Panhandle
Dairy Testing Schedule

- USDA guidelines, test dairy at 60+ day intervals
- All CFT reactors to be removed from herd
- First dairy test November 2014
- Subsequent tests based on results

2014 Dairy Herd 1

- Test Schedule and Herd Plan
  - Nov. 2014: 10, 316 tested, 520 CFT responders, 149 confirmed with TB
  - Feb. 2015: 9,045 tested, 935 CFT responders, 161 confirmed with TB
  - Jul. 2015: 8,894 tested, 314 CFT responders
  - USDA Risk Model, to achieve 95% confidence interval at <5% prevalence, 19 removal tests needed
  - Herd Plan – depopulate with indemnity ASAP
Extensive lesions seen in many animals

Dairy 1&2 Genotype Report
Root Cause Investigation

- On-site investigation conducted in March 2015
- Source not identified to date
- Pathways under consideration: animal movement; exposure to Mexico origin feeder steers; exposure to infected humans

Biocontainment Recommendations

Calf / heifer management:
- Pasteurize colostrum
- Assure waste milk properly pasteurized
- Sanitize bottles/nipples between calves
Biocontainment Recommendations

• Heifers: Separate heifers from Dairy 1 and Dairy 2 by >30'
• Discontinue offering milking string feed refusals

Biocontainment Recommendations

• Adults: Feed refusals were fed to dry cows and heifers. Feed to terminal animals only.
• Clean water troughs daily
2014 Dairy Herd 2

- Same owner as Dairy Herd 1
- Dairy established in 2009, approximately 11,000 head, from same CA dairy as Herd 1, and heifers from Herd 1. Closed herd since, except for cows from Herd 1.
- 5000 in milking string
- 6700 dry/springer/calves
- Heifers sent to calf raisers, then to common feed yard with Dairy 1. Bull calves sent to calf raiser, then to terminal feed yard
- Some cows sold to outside dairies at approximately 60 days in milk

2014 Dairy Herd 2

- Test Schedule and Herd Plan
  - Nov. 2014: 11,763 tested, 51 CFT responders, 1 confirmed with TB
  - Feb. 2015: 11,633 tested, 76 CFT responders, none confirmed with TB
  - Apr. 2015: 11,373 tested, 27 CFT responders, none confirmed
  - June 2015: 11,143 tested, 20 CFT responders, none confirmed
  - USDA Risk Model, to achieve 95% confidence interval at <5% prevalence, 4 removal tests needed
  - Herd Plan – assurance test Dec. 2015, then 5 annual tests after release

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2015 Dairy Complex

- 6 dairy steers confirmed with TB at slaughter in 3 lots over 4 mo. period in early 2015
- Cattle traced to 3 feed yards, then to 2 organic dairies under the same ownership/management (two had NUES tags issued to one of the dairies)
- Apr. 2015: A combined total of 5102 cows tested in Dairy 3 and 4, with 58 CFT responders. All negative on Bovigam (PPD lot 301). One cow confirmed on culture in June 2015.
- May 2015: 3322 heifers tested at feed yard, with 28 CFT responders. Two Bovigam positive, 4 CCT reactors, 6 confirmed with TB

Dairies 3 and 4 and associated feed yard tested in May, July and September. To date, 21 animals confirmed with TB: 1 cow, 14 heifers, and 6 steers

- After two herd tests, stochastic modeling by USDA indicates 8 removal tests are needed to release these herds.
- Replacement heifers sold to five other states. These states have been notified. Trace of culls pending – sales records being collected
- Genetic sequencing: 2014 and 2015 isolates not related
- TB may have been introduced into the grower yard through purchased additions, then spread to the dairies.
Low Resolution Tree of *M. bovis* isolates

- The isolates of interest are located in group 16

A close up view of groups 16, 17, 23 and 22. The Affected dairy heifers, along with the recent Holstein steer isolates group tightly together and identified as Texas Dairy 15-A.
SNP Table of the 21 isolates associated with the 2015 Dairy Complex

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