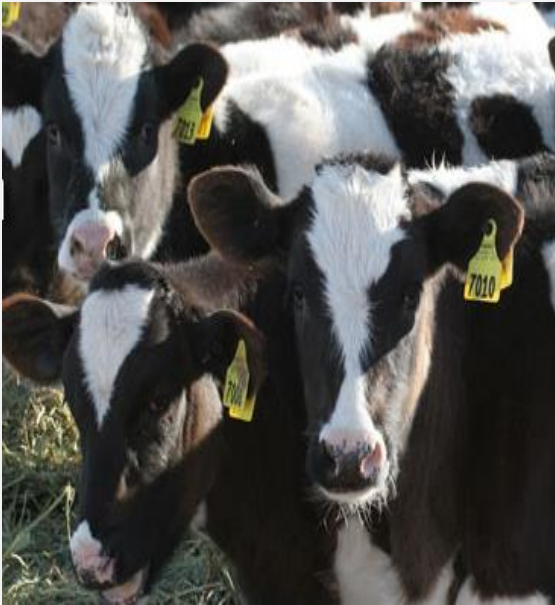




United States Department of Agriculture



U.S. BLUETONGUE SURVEILLANCE STRATEGY: PILOT STUDY UPDATE

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Background

- USAHA combined resolutions 6 and 11 (2014) and 3 and 7 (2015)
- No large-scale BTV surveillance since 2002
- Recommendations from the 2013 USDA ARS *Orbiviruses* Gap Analysis Workshop



Proposed Strategy

Multi-tiered BTV surveillance strategy:

- Tier 1: Serologic surveillance of cattle slaughter brucellosis samples
- Tier 2: Aggregation of testing data from bovine semen collection centers
- Tier 3: Sentinel and vector surveillance

Objectives

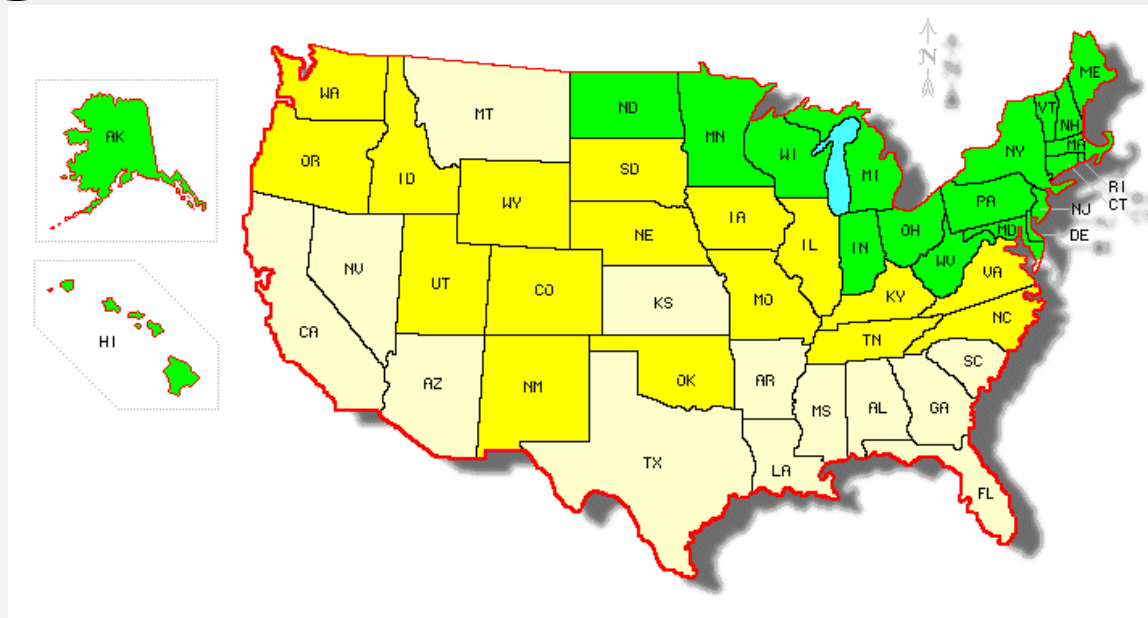
- Identify low prevalence or free areas of BTV, per OIE guidance for trade support
- Based upon BTV prevalence and distribution; assess current ecology and weather patterns
- Begin to establish a BTV serotype distribution map to monitor future changes
- Help develop national BTV surveillance strategy

Serologic Surveillance Methodology



- Provide baseline information
 - State or region seroprevalence
- If State or region seroprevalence <2.0%
 - Low prevalence or free
- Traceback of positive samples
 - Origin of cattle
- Limitations
 - Infection timing, serotypes, geography
- Utilizes routinely collected samples (majority for brucellosis)
 - CIS approach

Serologic Surveillance Methodology



- n= 600 sera per each low incidence/ free State or region for a total of ~6600 samples
 - ME, MA, CT, RI, VT, and NH (New England)
 - DE/MD (one region)
 - NJ/PA (one region)
 - NY, WV, OH, MI, IN, WI, MN, and ND

Serologic Surveillance Methodology



Testing Protocol

KY Federal Laboratory
VMRD cELISA



Positives



NVSL sero-repeatability



VMRD cELISA
VDT cELISA
+/- AGID



Traceback investigation 7

Diagnostic Testing Challenges

- Initial discrepancies in sample results found with repeatability testing
- KY Federal Brucellosis lab and NVSL worked extensively to troubleshoot sample selection and testing protocol
- Delayed testing several months and necessitated restarting serologic surveillance
- No performance issues identified with the VMRD test kit

Testing Troubleshooting

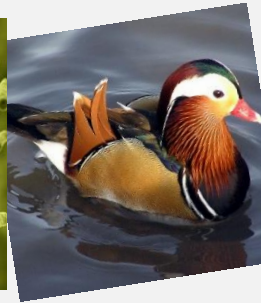
- Testing variables investigated:
 - ✓ Sample quality and collection method
 - ✓ Sample temperature
 - ✓ Software used to run plates
 - ✓ Wavelength filters
 - ✓ Wash solution
 - ✓ Plate washing method
 - ✓ Plate washer calibration

Current Status Update

- All (6,626) samples collected
- Initial testing completed
- Finalizing trace-backs
- Results from tier 1 anticipated at the beginning of 2018



Questions?





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