

REPORT OF THE USAHA COMMITTEE ON JOHNE'S DISEASE

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The Committee met on October 16, 2016 at the Sheraton Greensboro Hotel in Greensboro, North Carolina from 12:30-4:30 p.m. There were 14 members and seven guests present.

Presentations and Reports

Johne's Update from National Cattlemen's Beef Association - Kathy Simmons, NCBA

Johne's Disease Control-What Happens When We Get It Wrong - Belinda Thompson, Cornell University

NVSL Johne's Disease Fecal Proficiency Test Results - Kevin Stokes, USDA-APHIS-VS, National Veterinary Services Laboratory (NVSL)

NVSL Johne's Serology Proficiency Test Results - Jeffrey Nelson, USDA-APHIS-VS, National Veterinary Services Laboratory (NVSL)

Status of Johne's Disease Control in the US as presented at the 13th International Colloquium on Paratuberculosis - Ken Olson, American Association of Mycobacterial Diseases

MDA AAMD Update - Ken Olson, American Association of Mycobacterial Diseases

Johne's Disease Control-What Happens When We Get It Wrong

Belinda Thompson, Cornell University

Dr. Thompson's presentation reviewed several herd case examples of Johne's testing efforts which may not be contributing to progress in controlling Johne's disease or serve as an examples of a failure to apply appropriate Johne's control management practices.

Learning objectives:

1. Participants should understand the limitations of serology tests performed on serum or milk samples in characterizing animals infected with *Mycobacterium avium* subsp *paratuberculosis* (MAP)
2. Participants will learn how individual animals contributing to heavy environmental contamination might influence testing results over time
3. Participants will have an opportunity to review whole herd test examples

Herd 1: Low prevalence herd example

This herd has participated in long-term Johne's management and testing and is concerned about recent increases in test positive animals

Herd 2: Bulk tank milk ELISA test negative

This herd has participated in ELISA bulk tank testing for Johne's detection. The herd bulk tank tested negative on several occasions. Cow mortality consistent with clinical Johne's disease was investigated. Whole herd testing was performed to evaluate prevalence of MAP shedding.

Herd 3: Small purebred cow calf herd test results

Herd 4: Commercial cow calf herd with purchased untested bulls introduced

NVSL Johne's Serology Proficiency Test Results

Jeffrey Nelson, USDA-APHIS-VS, National Veterinary Services Laboratory (NVSL)

Dr. Nelson reported on NVSL's Johne's Disease Serological and Milk Enzyme-Linked Immunosorbent Assay (ELISA) Proficiency Test results. Thirty-Seven (37) laboratories participated in the milk ELISA proficiency test. Of these laboratories, 33 were located in the U.S. A total of 53 individuals participated. Fifty-one (51) individuals used the IDEXX ELISA and two used the ThermoFisher ELISA. All milk ELISA participants passed the proficiency test. Seventy-one (71) laboratories participated in the serology ELISA proficiency test. Of these laboratories, 62 were located in the U.S. A total of 84 individuals participated. Seventy-Four (74) individuals used the IDEXX ELISA, nine used the ThermoFisher ELISA, and one used the Zoetis ELISA. The percentage of individuals that passed the proficiency test using the different ELISAs was 96%, 89%, and 100%, respectively.

Status of Johne's Disease Control in the US as presented at the 13th International Colloquium on Paratuberculosis

Ken Olson, American Association of Mycobacterial Diseases (AAMD)

The report, originally presented at the 13th International Colloquium on Paratuberculosis (ICP) provided a brief overview of U.S. Johne's Disease Control and Prevention in four areas:

- National Efforts
- Research Efforts
- State Programs
- Industry Programs

While direct funding for the Johne's program has been eliminated at the national level, components do remain in place. They include:

- Interstate movement restrictions of animals positive for Johne's Disease.
- Uniform Program Standards for the Voluntary Bovine Johne's Disease Control Program. The program standards were last updated September 1, 2010.
- The USDA National Veterinary Services Laboratories (NVSL) provides milk and serum enzyme-linked immunosorbent assay (ELISA), fecal culture and fecal PCR proficiency testing. In 2015 – 7 Canadian, 4 European Union, 1 New Zealand, 1 Australian and 48 USA laboratories were in the program.
- The USDA Center for Veterinary Biologics continues evaluation, approval, licensure and monitoring of diagnostic test kits for Johne's Disease

The Mycobacterial Diseases of Animals Multistate Initiative provides a national network of research workers on the disease. Funding is currently limited, but they are pursuing additional avenues of funding, USDA-ARS also continues an active research effort.

State programs have declined significantly due to funding cuts; however, efforts are ongoing in several states. The New York State Johne's Disease Control Program was identified as one example of an ongoing program. It operates as part of the New York State Cattle Health Assurance Program and follows the national program standards. State funding is provided. The focus is on farm owners working with veterinarians to craft herd health programs that are tailored to each herds own goals and resources. 2015 statistics: 70 beef herds, 590 dairy herds, 14 mixed beef and dairy herds and eight small ruminant and captive cervid herds were in the program.

On the Industry side three efforts are ongoing:

The Dairy Herd Information System and their Quality Certification Services make testing available to producers across the country. Milk ELISA testing is offered as an option with milk production testing. Training on certified milk ELISA sampling is provided with 50 laboratory technicians and over 300 field technicians currently certified. They also have a Laboratory ELISA Proficiency Program with 13 U.S. certified laboratories and two Canadian certified laboratories.

Producer programs that address herd health, with Johne's as a component of them include the National Dairy FARM Program that is coordinated by National Milk Producers Association and offered by

cooperatives. On the beef side the Beef Quality Assurance Program is coordinated by the National Cattlemen's Beef Association and offered by state associations.

MDA AAMD Update

Ken Olson, American Association of Mycobacterial Diseases (AAMD)

The Mycobacterial Diseases of Animals (MDA) multi-state initiative carries on from Johne's Disease Integrated Program (JDIP) and is focused on two mycobacterial disease complexes - paratuberculosis (Johne's disease; JD) and the tuberculosis complex of diseases (TbC; i.e. bovine tuberculosis). The initiative includes five objectives:

Objective 1: Increase understanding of the epidemiology and transmission of Mycobacterial diseases in animals, including predictive modeling;

Objective 2: Develop and implement new generations of diagnostic tests for JD and TbC;

Objective 3: Improving our understanding of the biology and pathogenesis of Mycobacterial diseases, as well as the host response to infection;

Objective 4: Develop programs to evaluate and develop new generations of vaccines for JD and TbC; and,

Extension/Outreach: Develop and deliver education and outreach material related to JD and TbC in electronic and print form

Highlights for the MDA in 2016 include:

- Members of the team coordinated a workshop in Rabat, Morocco for the Bill and Melinda Gates Foundation on "Accelerating bTB Control in Developing Countries"
- The event drew 40 experts from 16 countries in North and South America, Europe, Asia, and Pacifica
- After Action Report is almost complete
- Includes three need areas, seven topic areas and six strategies
- GRAbTB is operational
- Working on plans for a Joint MDA meeting with Mexico
- Explore interface with other programs

The American Association of Mycobacterial Diseases is a new 501c3 not-for-profit organization formed to:

"To assist producer groups, researchers, regulators, and funding agencies by promoting scientific research, education and extension activities in developing and implementing science based solutions for the prevention and control of mycobacterial diseases". Highlights for the year included:

- 501c3 status being granted by Internal Revenue Service (IRS)
- JDIP repository serum, milk and fecal samples are available for sale and are being used
- Communications including meetings with ten trade publication editors during World Dairy Expo and making information available to attendees
- Hosted interest session at 2016 American Dairy Science Association (ADSA) American Society of Animal Science (ASAS) Joint Annual Meeting
- 4th Annual Meeting will be December 4, 2016 with Conference of Research Workers in Animal Diseases (CRWAD) in Chicago
- Working on plans for a Joint MDA meeting with Mexico

It was suggested that MDA Community, JD and TB Committees need to help refine strategy and prioritize tactics for addressing Johne's and TB by identifying:

- What is slowing progress in disease control? (Technology? Biology? Resources?)
 - What are the key inflection points?
 - Do we have a strategy to address potential public health concerns for MAP and bTB?
- Roles of ARS, APHIS, Academia, Industry, Global Alliances?

Committee Business:

The committee discussed proposed reorganization of USAHA committees, relative to impact on Johne's committee. After discussion, all committee members present were in support of the concept.