

Bovine TB News MICHIGAN STATE UNIVERSITY EXTENSION

May 5, 2009

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Michigan Update:

Breeders in northern Michigan calling to start verification process

Following Wildlife Risk Mitigation meetings conducted by MSU Extension, livestock producers and especially cattle breeders have been contacting MDA to set up an appointment to move the producer through the process of becoming verified as wildlife risk mitigated. Over 125 calls had been received by mid-April. While visits have been occurring in Alcona, Alpena and Cheboygan counties, work orders for farms that had called in the remaining MAZ counties just started going out May 4.

Producers of breeding stock need to get verified in 2009 or their buyers will be targeted for whole herd testing in 2010. Producers should call MDA at 517-241-0236 to get involved. To date, 40 producers have become verified. The goal for 2009 is 300.

Source: Michigan Department of Agriculture

Progress on MOU continues

MDA continues to negotiate with USDA on the new Memorandum of Understanding (MOU) through weekly conference calls. The process has been going on now for over a month and may take an additional month. Following agreement, there are regulatory processes, including the publishing of an interim ruling, that must take place with associated timeframes. The goal is to have the new MOU effective October 1, 2009.

Source: Michigan Department of Agriculture

Animal handling facility grants

MDA will be sending out letters detailing the application procedure Animal Handling cost-share in early May with an application deadline of July 1. The cost-share is for \$1000 with an equal contribution from the producer. Money will be primarily for holding pens and alleyways. For producers who already have these built, the money can be used toward a chute. If you have questions, contact Dr. Mark Remick of MDA at 517-749-7755 or Dr. Janice Rumph of MSU Extension at 231-839-3001.

Source: Michigan Department of Agriculture

National Update:

Livestock genome sequencing published

The first full genome of a domestic cow has been sequenced at a team of veterinary and animal scientists at the University of Massachusetts. In a paper published in the journal Science, researchers from the Bovine Genome Sequencing Project estimate that the genome of the cow contains approximately 22,000 genes. The sequencing project included more than 300 scientists in 25 countries and was funded in part by USDA's Cooperative State Research, Education and Extension Service, and Agricultural Research Service. In addition, major funding was provided by the National Human Genome Research Institute.

Through this study is the potential to better understand bovine immunology and the gamma T cell which could give researchers "critical information on how to fight diseases such as tuberculosis and leptospirosis."

Source: DVM Newsmagazine

New herd suspected with bTB in Texas

A 2600 head dairy herd in west Texas was preliminarily diagnosed with bTB. Animals being prepared for sale reacted to the caudal fold test and tested positive on the blood gamma interferon test. After slaughter, lesions compatible with bTB were identified and PCR confirmed the presence of genetic material associated with bTB in four cows. Results of cultures are pending.

One positive herd will not change the "TB-free" status of Texas which regained free status in fall 2006. Texas would like to depopulate this herd but it is not known yet if federal indemnity funds will be available. An epidemiological investigation has been launched to determine the source or possible spread of the disease.

Source: Texas Animal Health Commission News Release

Herd set to come off quarantine in California

Maddox Dairy (not the associated RuAnn Dairy) will have their quarantine releasing test this month, 12 months after being quarantined. If they clear this test then the herd will only be required to have annual whole herd test for the next three years.

The recent San Bernardino County herd infection has been confirmed by PCR and culture. The source of infection is unknown and the strain type differs from that identified in the other California herds in the current cases (2007-09) or in the 2002-03 cases. The herd is currently on a test and removal plan, the same as what was offered to the RuAnn Dairy. No other infected animals have been detected in this herd to date.

Source: California Department of Food and Agriculture

Results of deer TB tests in from Minnesota

The winter campaign by sharpshooters to harvest more deer (beyond what were taken in the hunting season) has ended with 738 deer killed in the 165 square mile core area. To date, testing of those deer have shown only one to be bTB infected. The positive deer was a 5 ½ year old male. That finding is consistent with other bTB positive cases which have been limited to deer born in

2005 or earlier. Dr. Michelle Carstenson of the Minnesota DNR has said that this suggests that the disease hasn't spread to the younger deer in the population since it was first found in cattle in 2005 there. There were no positive deer among the 1250 deer taken by hunters in the bTB core and surrounding areas this past season. Culture results are still pending.

Carstenson said that the DNR is committed to deer surveillance until they have five consecutive years with no positive bTB cases.

Source: Grand Forks Herald

Nebraska is testing wild deer for TB

Following the diagnosis last month of Bovine TB in a captive elk and fallow deer farm in Knox County, in the northeast part of the state, the Nebraska Game and Parks Commission will kill and test for bTB approximately 40 wild whitetail deer from the area. There is no reason at this time to believe that bTB was transmitted outside of the captive facility or that it was transmitted inside from infected wild animals, but the kill will take place as an act of prudence.

Source: Omaha World Herald

International Update:

Declining dairy in the United Kingdom

Milk production in the UK for the most recent year was the lowest since 1971, a 38 year low. Under EU regulations, the UK has an annual quota of 13 billion liters, but production during the last milk year was just 1.12 billion liters, less than 10% of allocation. While milk prices are low, Ian Potter, a leading industry analyst said that: "While lack of confidence is clearly a factor in these figures, bovine tuberculosis must also be a significant factor in reducing national production and will eventually lead to more factory closures."

Source: FarmingUK

Research Update:

Risk factors of bovine tuberculosis in cattle in rural livestock production systems of Ethiopia.

Tschopp R, Schelling E, and Hattendorf J, et al., *Prev Vet Med.* 2009; 89:205-11.

In this study, the prevalence of bTB infected cattle in four agriculture regions in Africa was 3%. The major risk factors for bTB infection in a herd were purchasing cattle and the presence of other livestock. Similar to studies conducted in many other countries where bTB is endemic, this study demonstrates the importance of cattle movement in the spread of bTB. *While exposure to whitetail deer are also an important risk factor for bTB infection in cattle in Michigan, cattle movement as a significant risk factor must continue to be considered.*

Contact networks in a wildlife-livestock host community: identifying high-risk individuals in the transmission of bovine TB among badgers and cattle.

Böhm M, Hutchings MR, White PC, *PLoS ONE.* 2009; 4:e5016. Epub 2009 Apr 29.

Management of many pathogens is complicated by the pathogens' ability to cross-infect multiple host species, including wildlife. This has major implications for the management of these diseases, since the dynamics of infection are dependent on the rates of both intra- and inter-specific transmission. Using proximity data loggers, researchers quantified both intra- and inter-specific contacts using bTB in badgers and cattle in the UK as a model system of a wildlife-livestock disease system. They assessed the connectedness of individuals within the networks in order to identify whether there are certain 'high-risk' individuals or groups of individuals for disease transmission within and between species. Their findings showed that contact patterns in both badger and cattle populations vary widely, both between individuals and over time. Infrequent interactions between badger social groups were recorded, although all badgers fitted with data loggers were involved in these inter-group contacts. Contacts between badgers and cattle occurred more frequently than contacts between different badger groups. Moreover, these inter-specific contacts involved those individual cows which were highly connected within the cattle herd. The results highlight the existence of specific individuals with relatively high contact rates in both livestock and wildlife populations, which have the potential to act as hubs in the spread of disease through complex contact networks. *This study further adds insight into the complexity of disease transmission between species. Understanding the dynamics of cattle-deer interaction over time would be useful in understanding bTB transmission in Michigan and the subsequent design of more effective mitigation strategies.*

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This newsletter is meant to keep you updated about bTB in Michigan and elsewhere and to answer questions you may have. If you have a question, please send it by return e-mail. Address questions or comments to Phil Durst at 989-826-1160 or durstp@msu.edu.

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