

REPORT OF THE COMMITTEE ON TRANSMISSIBLE DISEASES OF SWINE

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The Committee met on October 13, 2009 at the Town and Country Hotel, San Diego, Calif., from 12:30 pm to 5:20 pm. There were 19 members and 22 guests present.

Dr. Carter Black, State Veterinarian, Georgia, presented the report from the Feral Swine Subcommittee on Brucellosis. Dr. Black provided a brief history of the subcommittee and provided a report of the activities of the committee. The subcommittee was provided updates from:

- Southeastern Cooperative Wildlife Disease Study (SCWDS) on the new publically available Feral Swine Mapping System (www.feralswinemap.org)
- USDA Wildlife Services regarding FAD and Program Disease surveillance activities and an FMD research study in Feral swine
- Texas Animal Health Commission on *B. suis* in cattle
- USDA Swine Health Programs regarding program diseases
- University of Illinois on research regarding sequencing of PRV virus from feral and domestic origins

More detailed information can be found in the Report of the Feral Swine Subcommittee on Brucellosis and Pseudorabies, included at the end of this report.

Panel Session: Response to H1N1 what did we do. What did we learn?

Novel H1N1 2009 Influenza – Implications for the US Swine Herd

Dr. Patrick Webb, National Pork Board

The U.S. pork industry continues to take a proactive approach towards managing the novel H1N1 event, which has caused significant economic repercussions to an industry already experiencing 21 months of financial losses. When news of the novel H1N1 outbreak in humans hit in late April, crisis management plans were ready to be put into action. These actions included rapid communications out to producers explaining the issues and actions they needed to take on the farm to better protect the U.S. swine herd.

To address the H1N1 outbreak in a comprehensive way, the National Pork Board joined with the National Pork Producers Council, the U.S. Meat Export Federation and the American Association of Swine Veterinarians to focus on four main objectives:

- To reassure U.S. consumers and America's international trading partners that U.S. pork is safe.
- To protect the U.S. swine herd from becoming infected with novel H1N1.
- To monitor the coverage of novel H1N1 by the media, social media, government and industry, and supply these organizations with science-based, accurate information.
- To be prepared to protect and defend the U.S. pork industry against unwarranted attacks and allegations.

As this event continued to unfold, the pork industry worked closely with USDA Animal and Plant Inspection Service, USDA Agricultural Research Service, Centers for Disease Control, State Veterinarians and State Public Health Officials to address research, surveillance and response issues. The industry is supportive of the USDA approach to surveillance and the USDA response guidance that uses a monitored approach, to mitigating the discovery of novel H1N1 in the U.S swine herd, which will not disrupt the commerce or threaten the welfare of swine. The industry will continue to proactively address novel H1N1 issues and U.S. pork producers are prepared to act in the best interest of the public, the animals in their care, their employees and their communities.

H1N1: The Gift that keeps on Giving

Dr. Jen Greiner, National Pork Producers Council (NPPC)

National Pork Producers Council has been very active at the national and state levels making sure that policy makers have science based information regarding novel H1N1 and the safety of pork. The NPPC trade team has been active engaging trading partners to ensure comprehension of the safety of U.S. pork. Currently NPPC is working with members of the U.S. House and Senate to send a letter to the Obama administration requesting dollars for pork purchases under Section 32 and adequate funding for integrates and comprehensive swine disease surveillance. State Pork Producer Associations have been active interfacing with the State Veterinarian, State Public Health Officials and local media delivering messages regard the safety of pork.

Pandemic H1N1 Influenza AASV Response

Dr. Harry Snelson, American Association of Swine Veterinarians (AASV)

The AASV has been actively disseminating accurate information to its' membership and encouraging engagement at the local, State and National level to mitigate the novel H1N1 event. AASV has been actively engaging USDA Center for Veterinary Biologics to improve the process to rapidly bring vaccines to market. An Ad hoc working group developed a position statement regarding novel H1N1 and swine workers, swine heard vaccination, vaccine strain selection, and swine movements that were approved by the AASV Board of Directors (www.aasv.org)

SIV Surveillance Highlights

Dr. Sarah Tomlinson, USDA-APHIS-VS

Multiple lessons were learned from the novel H1N1 event. Preplanning and collaboration that was accomplished under an SIV pilot project prior to novel H1N1 event was valuable to implementing novel H1N1 surveillance. A comprehensive approach to disease surveillance is necessary for rapid response to emerging disease issues and USDA can play a crucial coordinating role to bring stakeholders together when these events occur. This response to the novel H1N1 event represents a good example of a one health approach to emerging diseases.

H1N1 Research – What we know now

Dr. Marcus Kehrl, USDA-ARS

The National Animal Disease Center-USDA-ARS Virus and Prion Diseases of Livestock Research Unit prioritized novel H1N1 research to rapidly address this issue. Dr. Kehrl provided a brief review of SIV prevalence in the U.S. swine herd which highlighted that the gamma cluster influenza were the dominate subtype. The research unit was involved early in the novel H1N1 event a result of prior relationship built with CDC regarding swine influenza. As a result ARS was successful in developing diagnostic tests that were shared with the National Veterinary Services Laboratory for validation and use in the National Animal Health Laboratory Network. In conjunction ARS was able to undertake pathogenesis and transmission studies in swine using novel H1N1 isolated from humans and demonstrated that the novel H1N1 acts similar to endemic strains of SIV in the U.S. Research was also done that provided evidence that the novel H1N1 is not found outside of the respiratory tract in swine. There is early evidence from ongoing research at ARS that U.S. swine herd may have some cross protection to the novel H1N1 virus from current circulating strains of SIV and some commercially available vaccines. There was

discussion after Dr. Kehrl's presentations in the audience regarding the need for more funding for ARS to improve research and response capabilities for emerging issues.

National Surveillance for Swine Influenza Virus in Swine

Dr. Sarah Tomlinson, USDA-APHIS-VS

Dr. Tomlinson discussed a brief history of SIV in the swine industry, current SIV control measures including vaccination and bio security and challenges for designing a surveillance program for a non regulated disease. It is recognized that there is a need to better understand the current SIV picture in the U.S. swine herd and work was undertaken in prior years to work with industry, CDC and USDA to address this issue. This work was vital to the development and implementation of the novel H1N1 surveillance plan. The current plan utilizes three streams for sample collection which include swine epidemiologically linked to H1N1 positive humans, swine with exhibiting influenza like illnesses (ILI) at exhibitions and diagnostic laboratory submissions of swine with a history of ILI. To date 36 NAHLN labs are participating in the program and 18 labs have reported SIV testing. There have been 164 samples tested using the Matrix PCR, 18 using the N1 PCR, and 20 test using virus isolation and to date the novel H1N1 virus has not been detected in the U.S. swine herd. USDA is very open to proactively work with the industry on addressing challenges help increase the level of surveillance occurring in the U.S. herd.

The meeting continued with additional presentations.

USDA Swine Health Programs Update

Dr. Troy Bigelow, USDA-APHIS-VS

Dr. Bigelow provided an overview of feral swine issues in the U.S. and the work veterinary services has been doing with the Southeastern Cooperative Wildlife Disease Study (SCWDS) on the new publically available Feral Swine Mapping System (www.feralswinemap.org). An update was provided on Swine Brucellosis and PRV and program activity. Currently all States are free of swine brucellosis except for Texas which is at Stage two. All states are PRV free and three transitional swine herds were indemnified for PRV using USDA funds. Dr Bigelow reviewed the PRV surveillance plan. There are significant reductions in Sow boar surveillance all samples are being directed to USDA regional laboratories and a database tracks samples submissions. USDA will not removed sow boar surveillance completely until other streams are brought online. USDA is bringing on line a diagnostic laboratory stream to aid in early disease detection. USDA is also looking in the future to bring online stream for high risk farms and high risk farms with documented feral swine exposure. A PRV plan implementation manual that describes the streams more in depth will be available soon. Dr. Bigelow provided an update on the process to codify swine brucellosis and pseudorabies program standards and the Swine Disease Analysis Program concept. He also provided an update on the Swine Health Protection Act (SHPA). There are 1400 licensed premises with half of those located in Puerto Rico. There were 200 violations of the SHPA in 2009 and 104 violations at non licensed feeders. Discussion after the presentation included the need for developing a better way for breeding swine delivered direct to a packer as an identified group to be sampled for PRV and results sent to the state of origin. There was a question regarding the use of private veterinary practitioners on a fee basis to accomplish PRV surveillance when down the road testing is used. It answer give was that the State AVIC would make that determination.

National PRRS Eradication, Can it be done? When will it be done?

Dr. Paul Yeske, Swine Veterinary Center

Dr. Yeske provided an overview of the history of control of porcine reproductive and respiratory syndrome (PRRS) in the U.S. swine industry and a growing grass roots effort supportive of PRRS. It is estimate that the industry loses 1.5 million dollars a day to the effects of PRRS on production. With the financial down turn of the industry there may be an opportunity to make inroads into PRRS eradication. The industry has been successful in eliminating PRRS at the farm level and 3 regional control efforts are underway including one in Minnesota that has been successful in eliminating PRRS on a county basis. National PRRS eradication has been discussed on a grass roots level. Those at the grass roots level are working to get widespread industry buy in for PRRS eradication which could start voluntarily but at some point need to move to a mandated regulatory program.

Washington Watch

Dr. Jen Greiner, National Pork Producers Council

Dr. Greiner provided a policy update. This included an overview of the current priorities Obama administration which included the economy, banking reform, health care, climate change, and alternative energy reform. The Obama administration has been responsive to the pork industries needs regarding H1N1 especially in trade talks and would like to see a more aggressive trade policy. Dr. Greiner also outlined the priorities and accomplishments of the 111th congress. NPPC has been very active in mitigating the U.S. pork industry economic crisis, environmental legislation, child nutrition act, food safety reform, antibiotic legislation, competitive livestock markets and trade.

Committee Business:

Two resolutions were put forward by members.

The first resolution put forward was regarding the Failure of importing countries to follow OIE guidelines for importations of animals. There was little discussion and a motion by Greg N. Hawkins, to accept the resolution the motion was seconded by Dr Jen Greiner and the motion was carried unanimously

The second resolution put forward regarding market swine surveillance. . There was some discussion to clarify USDA's intent to fund slaughter surveillance through FY 2010. The point was made that collectors contracts will expire in the 1st quarter in 2010 and there is no indication that they will be replaced. Lack of collectors means no samples in the slaughter stream. There was some discussion on changes to the language to reflect the FY 2010 funding. A motion to accept was made by Jon Caspers and seconded by Sam Hines and the motion carried unanimously.

REPORT OF THE FERAL SWINE SUBCOMMITTEE ON BRUCELLOSIS AND PSEUDORABIES

Chair: Dr. C. Carter Black, Atlanta, GA
Co-Chair: Dr. Joseph L. Corn, Athens, GA

The Subcommittee met on Sunday, October 11, 2009. Twenty-three persons were in attendance at the meeting, including 10 members of the Subcommittee. Reports were provided on a number of disease issues of interest to USAHA and its members. A summary of the reports is included below.

Dr. Joseph L. Corn, Southeastern Cooperative Wildlife Disease Study (SCWDS), University of Georgia, provided an update on the National Feral Swine Mapping System (NFSMS). SCWDS produced nationwide feral swine distribution maps in 1982, 1988 and 2004 by working directly with state and territorial natural resources agency personnel. In 1982, 17 states reported feral swine in a total of 475 counties. In 2004, 28 states reported feral swine in 1014 counties. With support from USDA-APHIS-Veterinary Services (VS) the SCWDS has now developed the National Feral Swine Mapping System (NFSMS), an interactive data collection system to be used to collect and display real time data on the distribution of feral swine in the United States. The real time feral swine distribution maps are produced using data collected from state and territorial natural resources agency personnel and from USDA-APHIS-Wildlife Services (WS). The real time map is available to be viewed by the public on the NFSMS home page. Distribution data submitted by agency personnel are evaluated by SCWDS on a continual basis, and the real time distribution map updated with verified additions on a monthly basis. Feral swine populations and/or sightings are designated on the map either as established and breeding populations, or as sightings. The 2008 map revealed that feral swine are currently in 35 states. The NFSMS is accessed via the internet at <http://www.feralswinemap.org/>.

Mr. Seth Swafford, USDA-APHIS-WS gave an update on the Wildlife Services' activities. Wildlife Services has conducted projects on trap monitors, feral swine barriers and experimental foot-and-mouth disease (FMD) infection in feral swine at the Foreign Animal Disease Diagnostic Laboratory (FADDL). They worked on projects in North Carolina, Nebraska and Kansas in addition to depopulation projects in Michigan, Tennessee and Pennsylvania. Wildlife Services conducted Comprehensive Disease Surveillance for classical swine fever (CSF), FMD, brucellosis, pseudorabies virus (PRV), trichinae and toxoplasmosis in feral swine.

Dr Greg Hawkins reported on *B suis* infection in cattle in Texas. There have been 46 head of cattle in 31 herds infected with *B suis* from 1998 through 2009. They are concerned that there may be cow to cow transmission of *B suis*. With termination of first point testing these animals will be detected at slaughter and the state will not be able to determine if *B suis* is the cause of the titer.

Dr. Troy Bigelow, USDA-APHIS gave an update on the swine programs. USDA is funding the SCWDS feral swine mapping project and Wildlife Services feral swine disease surveillance project. Dr. Bigelow reported that there was three transitional swine herds infected with swine brucellosis (SB) in Georgia. All states are SB Free except Texas which is stage 2. All states are Stage V (Free) for PRV. Dr. Bigelow also reported on the new surveillance system that will be conducted at the NAHLN and Regional laboratories. USDA is also working on swine diseases regulatory changes and updates.

Dr. Edwin Hahn, University of Illinois, reported on his studies of pseudorabies viruses from feral origin and domestic origin. Most strains that have surfaced in transitional outbreaks can be distinguished by sequencing within the gene for gC. Virus strains from feral swine in the

South Central States showed the greatest variation in gC sequence.

Sixty-three feral samples were also tested for the viral gene for gE. Absence of the marker gE gene would be an indication of the presence of marker vaccine virus. No evidence of marker vaccine was found in feral swine samples, suggesting that vaccines were not circulating.

Detection of viral DNA in most feral pig oral tissues suggests that the virus uses oral spread as part of the transmission mechanism in addition to what has been shown about venereal transition. Highest virus load was in tonsils, but viral DNA was also found in salivary glands, taste buds and mucosa near the

tusks. The development of a real time PCR assay to quantify the actual number of genome copies in a tissue was described that represents a powerful tool for both detection and research in viral pathogenesis.

There was one resolution presented and passed concerning SB and is forwarded to the Committee on Brucellosis adjourned at 4:10.