Emerging Diseases Council Report

2014 NIAA Annual Conference

Wednesday, April 2, 2014

The Emerging Diseases Council met on Wednesday, April 2, 2014 from 8:00 a.m. to 11:30 p.m. during the 2014 NIAA Annual Conference in Omaha, Nebraska, with about 35 people present. Dr. Carla Huston and Dr. Hailu Kinde served as Co-Chairs.

The council session focused on the use biotechnology and emerging animal diseases. The following speakers presented relevant information pertaining to the precautionary principle:

David R. Smith, DVM PhD DACVPM – Mississippi State University College of Veterinary Medicine, presented "What We know (and don't know) About Pneumonia in Beef Calves Prior to Weaning."

This presentation discussed pneumonia in pre-weaned beef calves as an emerging disease. Increased awareness and disease recognition may play a big part in this disease emergence. The cost of pre-weaning pneumonia has been estimated at $204 mil. Risk factors including herd size, use of creep feeders, and estrous synchronization in beef cattle herds. BRD investigations identified calf characteristics of age of dam and gender of calf. At the herd level outbreaks, patterns of pneumonia were identified sporadically in young calves and larger outbreaks in older calves. Potential causes for these patterns could be failure of passive transfer and loss of maternal antibodies.

Ronald L. Stotish, PhD. President and Chief Executive Officer of AquaBounty Technologies, presented "Aquaculture: Unfilled Needs and Opportunities."

This presentation focused on the unfilled needs and opportunities that could be addressed through the use of biotechnology. The small number of drug and vaccine approvals for aquaculture was noted. The lack of advanced diagnostics also hinders the ability to detect and prevent emerging diseases such as Taura and Early Mortality Syndrome (EMS) in shrimp. Challenges to the industry include intensive production which can lead to rapid spread of diseases, lack of effective vaccines or treatments, poor management and biosecurity, and delivery of potential preventatives and treatments. Opportunities for aquaculture include improvement of management and biosecurity, improved genetics, novel vaccines and therapeutics, and novel delivery systems.

Paul Sundberg, DVM PhD Dipl ACVPM – Vice President, Science and Technology, National Pork Board, presented "PEDV - Lessons Learned in Preparation for the Next Event"

This presentation focused on several lessons learned during the current PED outbreak, with the emphasis that we are still learning about the disease. One of the biggest obstacles faced is diagnostic data sharing and the differences between confidential versus secure data for the purposes of monitoring and surveillance. Other lessons learned included lessons in biosecurity, epidemiology and transmission, immunity, and environmental load. Additional newly identified swine viruses that were mentioned include Porcine circovirus type 2B (china), PED, porcine kubovirus, and porcine deltacoronavirus. The NPPC developed a resolution in 2014 dealing with emerging swine diseases which requests a listing of non-reportable swine diseases not in the US, responsibilities of stakeholders, coordination of response

and management strategies, information sharing, and other general strategies to strengthen the defense of the US pork industry.

Peter Timoney, MVB – Professor and Holder of the Frederick Van Lennep Chair in Equine Veterinary Science University of Kentucky, presented "Re-emergent Threat of Equine Herpesvirus-1 Neurologic Disease"

A general comparison on EHV-1 and EHV-4 was provided. While EHV-1 itself is not an emerging disease, this presentation focuses on the mutant neuropathogenic strain of EHV-1 (EHM), which is caused by a single point mutation. Cases of neurologic disease caused by EHV-1 have increased from less than 10 cases every 5 years in 1970 – 2000 to 33 cases between 2001 – 2006. Industry concerns include the economic impacts of abortions worldwide, the distressing nature of the disease, and the lack of a commercial vaccine for EHM. These cases were associated with increased morbidity and case fatality rates. This hypervirulent mutant (neuropathogenic) genotype variant (G2254) of the disease has been designated as a potential emerging disease by the USDA.

Old Business:

- No old business was brought forward.

New Business:

- One new resolution on PED was accepted, with the expectation that synergy with the resolutions proposed by the swine committee would likely occur.
- No existing resolutions were amended or revised, and no resolutions were removed.
- Consensus Points for NIAA White Paper Development

  The presentations fit the overall theme of this year's meeting very well.
  1) Biotechnology/genomics are here to stay and are positively changing the way animal diseases are diagnosed and monitored.
  2) The disciplined use of biotechnology/genomics leverages our ability to feed the world in 2050.
  3) The use of the precautionary principle in making regulatory decisions impedes progress in the use of biotechnology/genomics in the recognition and control of emerging animal diseases and hinders the enhancement of the food supply.

General Discussion:

Council Session adjourned at 11:30AM.