PDMOR Certificate Course Curriculum

This is a three day certificate course on Poultry Disease Outbreak Management and Regionalization designed to provide international participants a better understanding of how the United States is able to regionalize and control avian influenza outbreaks through a coordinated system of planning, incident command management structures, surveillance of wild birds and poultry, quarantine, biosecurity, depopulation, disposal, disinfection, and multi-jurisdictional cooperation. The training program presents and utilizes the "Delaware model," which emphasizes close cooperation between government, industry and educational institutions to manage avian influenza outbreaks utilizing best management practices and technologies related to controlling outbreaks of avian influenza and other catastrophic disease outbreaks.

Descriptions of Course Topics:

Outbreak Response: An overview of poultry disease outbreak response will be presented using avian influenza outbreak response as the focus and discussing the "Delaware Model".

Overview of US Poultry Industry: An introduction to the US poultry industry will be presented including production methods for commercial table-egg and meat production.

An Overview of the USDA AI Surveillance Programs, Preparedness and Indemnification: What are the current USDA surveillance, preparedness and indemnification programs and how do they operate? How do these help to ensure proper planning, surveillance, management and regionalization of AI outbreaks.

Influenza Viruses Basics: What is the "Avian bird flu"? What are hemagglutinin and neuraminidase, and what do they do? How are new influenza subtypes created? How can influenza viruses be detected?

Avian Influenza Status Update and the 2014 – 2015 HPAIV Outbreak: A summary of the 2014-15 HPAI US Outbreak and a status report on current avian influenza outbreaks globally.

Surveillance in Poultry and Wild Birds: A critical step in emergency poultry disease preparedness and response involves wild bird and commercial poultry surveillance programs. These programs involve the testing of migratory birds nationally and internationally including the USDA, DOI and its cooperators (including the State of Delaware and the University of Delaware). In January 2006, the U.S. commercial poultry industry initiated an avian influenza testing program. All broiler flocks from participating companies, including all broiler companies on the Delmarva Peninsula, are tested and confirmed AI negative before going to slaughter.

Personnel Protective Equipment: What types of personal protective equipment (PPE) are required during an AI outbreak response? The use and appropriateness of N95 masks, powered air purifying respirators and self-contained breathing apparatus will be discussed.

PPE and Biosecurity Procedures for Proper AI Surveillance Swab Collection: What types of personal protective equipment (PPE) and biosecurity procedures are required to collect surveillance field samples properly?

Proper Surveillance Swabbing: Hands-On: Demonstration and participation in proper collection of field samples and the use of personal protective equipment.

Biosecurity-A Day to Day Tool: Risk Assessment: Biosecurity is one of the principle steps in preventing the spread of disease. Biosecurity is the one aspect of avian influenza control that can be practiced on a daily basis. Examples of current methods, including risk assessment biosecurity programs will be discussed.

Guidelines, Methods and Criteria for Depopulation: There are a limited number of mass emergency depopulation procedures. Guidelines from the US Department of Agriculture, American Veterinary Medical Association, OIE, and others guide the selection of appropriate depopulation techniques. The advantages and disadvantages of several gas depopulation techniques will be covered.

Foam Depopulation: Foam depopulation was developed as a fast, humane, and easy method to implement mass emergency depopulation. The procedure reduces the number of people required and can rapidly depopulate floor reared poultry. Participants will learn the characteristics of foam, the science behind the procedure, and how to implement foam depopulation.

Depopulation Demonstration: Different water based foam depopulation methods will be demonstrated. Depending on time and conditions, participants will have the opportunity to operate the equipment.

Biosecurity during an Outbreak: How do biosecurity procedures change during an outbreak? What is the purpose of the quarantine process and how the process is implemented. How are biosecurity procedures affected? What are the proper decontamination procedures used to ensure that both personnel and equipment are properly cleaned and disinfected before leaving a hot zone?

Regionalization and Trade: Explanation of the role of USAPEEC with US poultry and egg exports and other industry and agricultural trade associations both foreign and domestic. Discussion of current issues affecting AI regionalization and trade policy issues with global markets.

Mass Carcass Disposal Options and Decision Making: After catastrophic poultry emergencies, such as avian influenza and heat stress, disposing of large numbers of birds is necessary. One of the critical concerns in selecting a disposal method is biosecurity. Depending on the circumstances, the options may be limited. The advantages and disadvantages of several disposal options including on-farm burial, landfilling, incineration, and composting will be reviewed.

Implementing Composting: Composting is an effective on-farm means of inactivating avian influenza virus. Composting is suitable for international and domestic carcass disposal. Composting has been used for both daily and catastrophic mortality disposal. Daily mortality disposal has been successfully used on Delmarva since the 1980's, while in-house composting is slightly newer. Procedures for both daily and catastrophic mortality are reviewed, including the mix & pile and layering techniques.

Composting Demonstration: Both daily and catastrophic composing will be demonstrated.

Live Bird Market System: The United States has a number of regional live bird markets that are managed differently than the larger integrated commercial poultry industry. These differences can pose biosecurity challenges. Strategies to deal with the challenges of the US live bird market system will be discussed.

Application of Incident Command Systems (ICS) to Poultry Emergencies: ICS is a scalable framework designed for emergency response. ICS can be used for emergencies such as fire protection to poultry

diseases response. The system provides the framework for people from multiple agencies to work together. The same framework can be used for disease response, structural incidents, and similar.

Decontamination Methods and Verification: What are the options for decontamination poultry facilities following a HPAI outbreak? What are the advantages and disadvantages of these different methods? What procedures are used to verify that the decontamination procedure used has been effective?

Instructors:

The speakers/instructors for the course are a diverse and varied group of faculty and professionals, from universities, regional departments of agriculture, the poultry industry and USDA. Many of the instructors developed their experience while responding to avian influenza outbreaks in the poultry industry, a H1N1 outbreak on campus, or similar situations. The instructors also include experts who not only are actively doing researching or furthering science, but who developed the procedures being presented as part of the course.