

EPDR Certificate Course Curriculum

The University of Delaware will offer the ninth annual Emergency Poultry Disease Response certificate course to participants from around the world in 2017. Up to 22 participants will share their experiences and learn the latest information on avian influenza and its control during the five-day course. Topics will include understanding the influenza virus, surveillance, biosecurity, outbreak response and control, incident command structures, depopulation, disposal, composting, and decontamination. The course presents the “Delaware Model,” which emphasizes close cooperation between government, industry and educational institutions to successfully manage and control avian influenza outbreaks utilizing best management practices and technologies. Hands-on practical training exercises are a key feature of the course. Participants will earn continuing education units (CEU) necessary for veterinary or veterinary technician continuing education requirements: 3.2 CEUs (32 training hours)

Topic Descriptions:

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”.

Avian Influenza and the Current Global Disease Situation: What is the “Avian bird flu”? What are hemagglutinin and neuraminidase, and what do they do? How are new influenza subtypes created? What is the current status of avian influenza outbreaks in poultry and wild birds around the globe. Which subtypes are playing a significant role in these outbreaks?

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.

USDA Animal and Plant Health Inspection Service (APHIS) Prospective: Most of the participants for this year’s EPDR course are supported through the efforts of USDA APHIS. Participants will have the opportunity to learn more about the role and programs of USDA APHIS.

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.

Avian Influenza Vaccination as a Control Measure: What AI vaccines are currently available and what are the results of recent AI vaccination studies. What are the implications of using a vaccination program on exports and disease control? Why vaccination is not currently used in the US. How are vaccines being used internationally?

Personnel Protective Equipment: What types of personal protective equipment (PPE) are required during an 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.

Zoonotic & Foreign Animal Diseases One Health Concept: Why do existing and emerging zoonotic and foreign animal diseases represent a continuing threat to national and international agriculture, human health, and national security? How the confluence of veterinary and human health should require the “One Medicine Concept” approach to dealing with the problem.

One Health Concept and the Human Health Side of AI Outbreaks: Certain avian influenza viruses are zoonotic causing human infections and death. This is an example of when human health must be protected during a response and on a larger perspective for human populations in general requiring the One Health Concept.

Building Capacities - Strengthening Health Systems and Response Networks: What are the elements required to support and strengthen health systems and laboratory capacity building for zoonotic disease detection, reporting, risk assessment, and response?

The Live Bird Market System: The East Coast of 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.

International Backyard flocks and Live Bird Market Systems: Live bird markets and village/backyard flocks present a unique challenge for both developed and developing nations. How do backyard flocks and live bird market systems differ internationally and what are different AI control strategies and their impact on human health.

Picture Exchange: Participants local live bird markets: This is an opportunity for participants to share pictures of their home country’s live bird markets, backyard flocks and share comments of the challenges on dealing with avian influenza outbreaks in these situations.

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.

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.

Incident Command Structures (ICS) and Perdue's Lesson Learned: ICS has been used for avian influenza disease outbreaks. In this module, representatives will discuss how ICS was part of Perdue's response during regional poultry disease emergencies.

Tour of the Delmarva Broiler Industry: This is a bus tour to include visiting a commercial hatchery, broiler (meat) farm and processing plant. The tour will be followed by a visit to Rehoboth Beach located on the Atlantic Ocean for dinner and shopping.

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 discussed.

Evaluation of Ventilation Shutdown for Mass Depopulation: Learn about the effectiveness of ventilation shutdown (VSD) as a method for depopulating table-egg layers. How humane is this controversial method? Learn what equipment is required and what safety procedures need to be followed. How can you monitor the process?

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.

Biosecurity: A Response Tool: How do biosecurity procedures change during and outbreak. What is the purpose of the quarantine process and how is the process implemented and how are biosecurity procedures affected?

An Overview of USDA AI Surveillance Programs, Preparedness and Indemnification: What are the current USDA surveillance, preparedness and indemnification programs and how do they operate?

Depopulation Demonstration: Different water based foam depopulation methods will be demonstrated along with equipped used to depopulate individual birds. Depending on time and conditions, participants will have the opportunity to operate the equipment.

AI 2017 Tennessee Outbreak-Industry Experience: An overview will be presented on the AI outbreak on commercial farms in Tennessee in 2017 from a poultry veterinarian's prospective.

Current Home Country Methods for Dealing with Avian Influenza: Participants, if they wish, can briefly present information on how they are dealing with AI outbreaks in their country.

Mass Carcass Disposal Options: 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. The advantages and disadvantages of different disposal options including on-farm burial, landfilling, incineration, and composting are 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 Lesson Learned from Recent AI Outbreaks: The recent avian influenza outbreak in the US have affected different sectors of the poultry industry including turkeys, caged layers and broilers. These sectors have different housing and production methods that affect emergency response including depopulation and disposal. Composting methods along with lessons learned will be discussed.

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

Decontamination Methods and Verification: What are the different currently approved methods for decontaminating poultry facilities after an AI outbreak? What are the advantages and disadvantages of these different methods? What methods are used to verify premises are free of AI?

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.