



Background

Porcine Epidemic Diarrhea Virus (PEDv) is a coronavirus that affects swine, causing diarrhea and vomiting, and death of 50-100 percent of infected piglets. Adult pigs can become infected but generally do not have mortality. Despite Federal, State, and industry actions since the May 2013 confirmation of the virus' presence in the U.S., PEDv has persisted and even spread, and now has been detected in 27 states. USDA's Animal and Plant Health Inspection Service (APHIS) is moving forward on the recommendation to deem PEDv a reportable disease. USDA's Agricultural Research Service (ARS), Farm Credit Agency (FCA), and National Institute of Food and Agriculture (NIFA) are also involved in measures related to the outbreak of PEDv.

New APHIS Action: Disease Management under Emergency Authority

A Federal Order will be issued requiring disease reporting with associated premises identification numbers (PIN). The order would also require tracking movements of pigs, vehicles, and other equipment leaving affected premises so potential movement of the virus would be identified; however, movements would not stop. Safe movement protocols to mitigate spread of virus, developed with industry input, would be required (e.g., vehicle cleaning, disinfection, and other biosecurity). In addition to the reporting requirement, USDA announced a number of other actions to help producers who have experienced PED virus outbreaks, including transferring \$5 million immediately for related activities while USDA works to refine the program and funding needs:

- Disease Surveillance measures to include passive surveillance; ongoing observational surveillance at the individual herd level; monitoring of infected herds; and upgrading data management systems to support increased reporting and test result messaging volumes
- Movement Tracking: agreements/other support to enhance State/Federal tracking capabilities; contracting for use of a portal for the collection of private sector data streams, if needed
- Herd Monitoring: diagnostic testing costs for affected herds participating in monitoring program (via contracts with NAHLN laboratories); enhancements to producer's biosecurity programs
- Epidemiological and Technical Support: development, validation, and standardization of diagnostic tests, isolate analysis (pig inoculation studies, genetics); epidemiological investigations; trade support

Previous Actions by APHIS

Throughout the PEDv outbreak, APHIS has worked closely with the swine industry to identify risk factors in the transmission of the virus and minimize its impact on producers and industry.

APHIS is part of a task force with the Food and Drug Administration and State and industry stakeholders, including the American Association of Swine Veterinarians (AASV), National Pork Producers Council (NPPC), National Pork Board (NPB), veterinary diagnostic laboratories (VDLs), and State Animal Health Officials (SAHOs). This task force aims to investigate the virus, identify and trace risk factors in the transmission of the disease, and keep producers informed. The group is voluntarily collecting epidemiological information on PEDv that will help us identify additional cases; determine how the disease got here and how it spreads; evaluate strategies for PEDv control and elimination; create a Tool for Assessment of Intervention Options (TAIO); and evaluate options for an active surveillance plan.

At this point, the task force has accomplished the following:

- Established PED virus case definition and diagnostic testing protocols (PCR and virus isolation);
- Sequenced the PED virus and deposited the information in GenBank;
- Completed two feed ingredient investigations that examined feed as a potential source of PED infection, and looked at imported feed, domestically-produced feed, and feed that could have been contaminated during processing or distribution;
- Banked paired specimens (serum matched with diaphragm tissue) to use to develop future diagnostic tests;
- Summarized and aggregated National Animal Health Laboratory Network (NAHLN) laboratory accessions with positive test results each week (this report is posted weekly on the AASV website);
- Completed a case-control analysis of infected premises; and
- Produced several communications products, including a technical note, an etiology and ecology document, and internal talking points.

The task force continues to work on the following:

- Evaluating commercial diagnostic tests (unlicensed ELISAs, but thus far none have met requirements);
- Validating the Indirect Fluorescent Antibody (IFA) for antibody detection;
- Developing a SN/VN test;
- Completing a comprehensive pathways assessment that looks at the potential for exotic swine viruses to enter the U.S.; and
- Conducting three epidemiology studies
 - a spatial epidemiology study of a cluster of infected premises in Oklahoma and adjacent states;
 - a lateral spread study of infected premises in North Carolina; and
 - a preliminary analysis of intervention options.

Farm Credit

Farm Loan Programs is working with producers to provide credit options, including restructuring loans, similar to how FSA worked with livestock producers affected by the blizzard in South Dakota.

All FSA direct and guaranteed loan programs are available to existing and new FSA borrowers.

For existing direct and guaranteed borrowers FSA loan officers have been instructed to release income from sales normally earmarked for FSA debt repayment back to the borrowers so they can use the proceeds for recovery efforts.

Loan officers for lenders participating in the guaranteed loan program are being advised and encouraged to maximize repayment schedules for both existing and new loans. FSA will allow existing debt to be rescheduled for up to 15 years with the option of up to a 5 year deferral of payments. In addition, new loans made to replace breeding livestock can be amortized over 15 years with as much as a 5 year deferral in payments.

Research

Both ARS and NIFA have provided assistance to researchers looking into this disease.

ARS is working with the National Animal Disease Center in Ames, Iowa to make models of the disease transmission and testing feedstuffs. Their modeling work is contributing to some experimental vaccines to treat animals with the disease. ARS is also open to further

collaboration on this research with industry including research on vaccines. ARS also sits on the Swine Health Board.

NIFA provides competitive grant funding through the Agriculture and Food Research Initiative program, and the current Request For Applications for funding proposals closes on May 1. NIFA expects some applications on PEDv to come in this round of funding. There are also some formula funds going to states and universities through the Hatch Act and National Animal Health Disease Section 1433 for research activities surrounding this disease.

Farm Service Agency

Unfortunately, none of the livestock disaster programs can provide assistance to producers due to limitations within the statute.

- The Livestock Indemnity Program (LIP) only covers deaths due to adverse weather or attacks by animals.
- The Livestock Forage Program (LFP) provides assistance to producers who suffered forage losses due drought or fire.
- The Emergency Assistance Program for Livestock, Honey Bees and Farm Raised Fish (ELAP) provides emergency assistance to eligible producers due to disease, adverse weather or other conditions not covered by LFP and LIP. While technically this could be a potential pot of money to use, payments are capped at \$20 million per fiscal year.