

**Written Testimony Of
National Pork Producers Council**

On

Foot and Mouth Disease: Are We Prepared?

**United States House
Committee on Agriculture
Subcommittee on Livestock and Foreign Agriculture**

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Introduction

The National Pork Producers Council (NPPC) is an association of 43 state pork producer organizations that serves as the global voice in Washington, D.C., for the nation's pork producers. The U.S. pork industry represents a significant value-added activity in the agricultural economy and the overall U.S. economy. Nationwide, more than 68,000 pork producers marketed more than 110 million hogs in 2014, and those animals provided total gross receipts of \$23.4 billion. Overall, an estimated \$22.3 billion of personal income and \$39 billion of gross national product are supported by the U.S. pork industry.

Economists Daniel Otto, Lee Schulz and Mark Imerman at Iowa State University estimate that the U.S. pork industry is directly responsible for the creation of more than 37,000 full-time equivalent pork producing jobs and generates about 128,000 jobs in the rest of agriculture. It is responsible for approximately 102,000 jobs in the manufacturing sector, mostly in the packing industry, and 65,000 jobs in professional services such as veterinarians, real estate agents and bankers. All told, the U.S. pork industry is responsible for nearly 550,000 mostly rural jobs in the United States. The U.S. pork producers today provide 23 billion pounds of safe, wholesome and nutritious meat protein to consumers worldwide.

Exports add significantly to the bottom line of each U.S. pork producer. U.S. exports of pork and pork products totaled 2.2 million metric tons in 2014, representing more than 26 percent of U.S. production, and those exports add more than \$62 to the value of each hog marketed. Exports supported about 110,000 jobs in the U.S. pork and allied industries.

FMD a Growing Threat to North America

Foot and Mouth Disease (FMD) is one of the most economically devastating foreign animal diseases affecting animal agriculture. It is highly contagious and spreads easily through livestock movement, by wind currents, on vehicles that have traveled to and from infected farms and even on inanimate objects that have come in contact with the virus. It affects all cloven hoofed species, including wildlife such as deer and elk.

Because North America is free of FMD, an outbreak of the disease in the United States would immediately shut off all exports of U.S. livestock, meat and dairy products, creating a precipitous drop in livestock markets. Because U.S. consumers have no knowledge of the disease, there also likely would be serious disruptions in the domestic market because of decreased demand for those products.

FMD is endemic in Africa, Asia, South America and the Middle East. The FMD virus has seven viral serotypes and more than 60 subtypes, with wide strain variability. Managing and ultimately eradicating FMD requires strain-specific vaccines, making vaccination challenging and very expensive. Sporadic outbreaks with different types continue to pop up in countries around the world.

Increased travel and trade between affected countries make the U.S. increasingly vulnerable to introduction of the disease. Now, the United States has to confront the possibility of terrorists using FMD as a weapon to inflict significant damage to the U.S. economy that could also affect food availability.

U.S. Livestock Industry Vulnerable to FADs, Including FMD

The House Agriculture Committee Nov. 4, 2015, held a hearing on American Agriculture and National Security, which highlighted the vulnerability of the U.S. food supply to the potential for foreign animal disease introduction by terrorists or by accident.

While the United States faces an increasing threat, through multiple sources, of the introduction of FMD into the U.S. livestock herd, there is ample evidence to suggest the safety net in place to prevent such an introduction needs to be improved.

The bipartisan Report of the Blue Ribbon Study Panel on Biodefense, co-chaired by former Department of Homeland Security Secretary Tom Ridge and former Sen. Joe Lieberman and released Oct. 28, 2015, highlighted the need for improvements in the U.S. system for protecting the U.S. livestock herd and the nation's food supply from Foreign Animal Diseases (FADs).

Since 2013, several diseases affecting swine have been introduced into the U.S. herd, including Porcine Epidemic Diarrhea virus (PEDv), Delta Corona Virus and Orthoreovirus. Government officials responsible for overseeing port-of-entry inspections and disease risk management have been unable to specifically identify the source or means of introduction of those viruses even though the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) conducted a root cause investigation. If there is an unidentified gap in the U.S. safety net that allowed the recent introduction of these new diseases, it also remains open for FMD.

In USDA's FAD preparation strategy document on the phases and types of an FMD outbreak, Dr. James Roth, professor and researcher at Iowa State University, identified four phases of the disease: 1) confirmation of an outbreak (typically three days); 2) surveillance and epidemiological work necessary to provide timely evidence of the extent of an outbreak to support decision making by government officials; 3) recovery from the disease; and 4) freedom from the disease (possibly with vaccination).

He characterized an FMD outbreak as having six types: Type 1, Small Focal; Type 2, Moderate Regional; Type 3, Large Regional; Type 4, Widespread or National; Type 5, Catastrophic U.S.; and Type 6, Catastrophic North American, which includes Canada and Mexico.

Given the structure of the U.S. livestock industry, the likelihood of having a Small Focal or Moderate Regional outbreak is remote. The livestock industry estimates there are approximately 1 million pigs and 400,000 cattle moved daily in the United States, some over long distances. In addition, there are numerous auctions, fairs and exhibits that concentrate large numbers of animals in a single location, providing the opportunity for one infected or exposed animal to spread disease to many animals. Thus, it seems unlikely that, if the United

States had an outbreak, it would be a small focal outbreak that could be controlled without widespread administration of vaccine.

The World Organization for Animal Health (OIE) sets standards for managing and declaring freedom from FMD. Those standards range from “stamping out” (killing all infected and exposed animals) to being free of FMD with vaccination.

Not Enough Vaccine to Address FMD Outbreak

After watching countries such as the United Kingdom, Korea and Japan, whose livestock populations pale in comparison to the United States, struggle to manage an FMD outbreak by killing large numbers of animals, APHIS changed its existing policy on managing the disease from “stamping out” to using vaccine to limit the spread. This policy change was endorsed by the livestock industry as a cheaper and more practical alternative given the enormous size of the U.S. livestock herd and the rapid movement of livestock around the country. The United States simply cannot “kill” its way out of an FMD outbreak!

After reviewing the impacts of the policy change, it became readily apparent under the current structure of the FMD vaccine antigen bank that APHIS did not have the quantity of vaccine needed to implement this new policy, nor could vaccine be obtained in a timely manner in the event of an outbreak.

At APHIS’s request, the U.S. livestock industry began a series of meetings with its senior officials to develop a strategy for improving the vaccine antigen bank and vaccine availability. There has been significant progress in FMD preparedness through the development of secure supply plans for milk, pork and beef, and APHIS continues to work with the livestock industry to improve its preparedness capability. Fixing the antigen bank capacity and improving vaccine availability must be a priority in future preparedness efforts.

Current U.S. law prohibits live FMD virus from being introduced onto the U.S. mainland, so foreign production companies are the only source of finished vaccines. It has been suggested that recombinant DNA vaccines that do not use live FMD virus can be produced in the United States, thus avoiding the legal prohibition of having live virus on the mainland. However, current data is not sufficient to determine how quickly, and indeed whether, such vaccines provide protection outside of the laboratory environment and for all species.

The United States likely is years away from the development and commercialization of such novel vaccines. But the U.S. livestock industry must have vaccines that are protective against the strain of FMD that might be in a sample sitting at the Plum Island Animal Disease Center (PIADC) for analysis at this very moment!

The United States is the only country in the world to maintain its own antigen bank, located at the PIADC. The bank maintains antigen for a limited number of FMD strains. APHIS contracts with foreign vaccine production companies to produce finished vaccine from the antigen stored at Plum Island. If an outbreak occurs, the antigen is shipped to Europe to produce vaccine, and the finished product is shipped back to the United States. Based on the current production contract, after three weeks, this process would produce only 2.5 million doses of vaccine, and there is no surge capacity to produce more.

Iowa State's Dr. Roth estimates that the U.S. livestock industry would need 10 million doses for the first two weeks of an outbreak.

The FMD vaccine bank is currently funded at \$1.9 million, and there have been no requests for a substantial increase in the President's budget despite the fact that Homeland Security Presidential Directive 9 (HSPD9) requires an adequate vaccine stockpile to be maintained.

Although APHIS is the agency charged with managing and controlling FADs, there is no logical reason there could not be mutual cooperation with the Department of Homeland Security on funding an enhanced vaccine bank and improving vaccine availability.

Another factor complicating upgrades to the vaccine bank is it also serves as the North American Bank and thus includes Canada and Mexico. NPPC believes it is appropriate to include those neighboring countries, but the United States should not wait for negotiations with those countries to be completed before making necessary improvements that are so critical to the U.S. livestock industry.

There is concurrence in the livestock industry that fixing the vaccine bank will require the following actions: 1) Contract for an offshore, vendor-maintained vaccine antigen bank that would have available antigen concentrate to protect against all 23 of the most common FMD types currently circulating in the world; 2) Contract for a vendor-managed inventory of 10 million doses (the estimated need for the first two weeks of an outbreak); and 3) Contract with an international manufacturer(s) for the surge capacity to produce at least 40 million doses.

For more than a year, NPPC and others in the livestock industry have urged APHIS to identify changes needed to modernize the antigen bank and increase vaccine availability by requesting information from vaccine producers to identify the cost of fixing the vaccine problem. The industry anticipates that the agency soon will make that request.

FMD Outbreak Could Be Economically Devastating

NPPC knows that fixing the vaccine shortage will require a significant increase in budget outlays. However, that cost pales in comparison to the cost of an FMD outbreak. Iowa State University economist Dermot Hayes estimates revenue losses to just the U.S. pork and beef industries from an FMD outbreak at \$12.9 billion per year over a 10-year period; the corn and soybean industries are estimated to lose \$44 billion and \$24.9 billion, respectively. A recent study by Kansas State University estimates cumulative losses to consumers and livestock producers at \$188 billion, with an added cost to the government of \$11 billion for eradication efforts if vaccination is not employed. Depending on the vaccination strategy employed, the study estimates the losses to consumers and producers could be cut by 48 percent.

Given the huge economic impact on the livestock industry of an FMD outbreak and the cost of dealing with it, APHIS has insisted that the industry must share in the costs associated with making improvements to the vaccine bank. While several options have been discussed, none have produced a viable method by which equitable contributions from each sector of the livestock industry could be made. The type of outbreak and its location will determine which sector of the livestock industry is most seriously affected in the initial phase of an outbreak. None of the options discussed thus far would provide any significant funds, and APHIS has

not offered any kind of a plan that would be equitable among components of the industry. Frankly, the industry believes it would be impossible to develop such a plan.

The history of government involvement in disasters like an FMD outbreak is that, once an outbreak occurs, unlimited resources are committed to getting control of the situation. In the case of FMD, there is a clear opportunity to invest in a robust vaccine bank that would limit the economic impact on producers, feed suppliers and consumers and reduce the government's cost for control and eradication of the disease.

NPPC urges the committee and Congress to work with the Administration to address the alarming gap in the preparedness for an FMD outbreak. Whether the disease introduction is the result of terrorism, careless travelers or carried on traded commodities, the calamitous result is the same: devastation to the U.S. livestock industry.