Controlling the disease without crippling the industry

Response to any outbreak must consider the needs of both farmers and consumers.

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It is difficult to believe that Foot and Mouth Disease (FMD) could be a present day threat to the U.S., since it was eradicated here in 1929. To accomplish this, FMD-infected herds of cattle were gathered into deep trenches, shot and buried. There was more recently a major outbreak in the United Kingdom in 2001, during which infected livestock were euthanized and carcasses were incinerated in open pyres.

The risk of FMD entering our country is very real and ever present because of its highly contagious nature and presence in approximately two-thirds of the world. North America is presently free of FMD, but an invasion could occur either through the import of infected animals or animal products, by the virus being carried on people or objects, or through an intentional agro-terrorism event. FMD could be considered the most economically damaging livestock disease in the world and it is not an easy foe to fight for many reasons.

Response would be much different

If an outbreak of FMD occurred within our borders today, the response would be very different from the 1920s or 2001 because so much has changed about livestock markets. Livestock and their products must “move” to keep producers in business, yet in the face of an FMD outbreak infected livestock and their products must “stop” to keep the disease from spreading. The challenge is, how will we manage that tension and keep non-infected or unaffected livestock and their products in the channels of commerce to provide food for the nation and the world?

In the face of a FMD outbreak the most effective and efficient response could only be possible through a collaborative effort between the states, federal entities and the livestock industry. State departments of agriculture, along with brand inspectors, state patrol personnel, state departments of transportation and local law enforcement need to work together to develop specific protocols for check points to control livestock movement during a disease incident. In addition, cooperation and compliance with livestock movement restrictions by the livestock industry would be a key factor in a successful emergency response to FMD.

An FMD outbreak in the U.S. would have a major impact on the whole country. Not only would it negatively affect livestock health and well being, there might be possible environmental health risks due to the need for carcass disposal of mass mortalities of animals. Consumers might question whether they should eat meat or drink milk, leading to a dramatic decrease in the consumption of both and thereby affecting producers and processors. Finally, the U.S. could lose some of its international trade markets for meat and milk products for a period of time. The total result would be a huge economic calamity.

In many western states, agriculture is one of the largest sectors in their economies. The dairy industry not only sells a product (milk) but it is also a significant contributor to the beef supply. There are areas in the western states where there are very high concentrations of animals. The FMD-susceptible species (cattle, sheep, goats and swine) in Colorado alone, for example, total more than three million head.

Outbreaks of FMD occur around the world, most recently in Egypt and Korea. These countries have found that one of the most important components to effectively and efficiently stop its spread is to institute appropriate livestock movement controls. The problem is, they can also cripple markets.

If livestock movement restrictions are too lax it results in uncontrolled disease and both the livestock industry and consumers suffer. If excessive controls are put in place then agricultural commerce shuts down, with the end result being that both the livestock industry and consumers suffer. Therefore, appropriate livestock movement restrictions during an outbreak must not be too loose or too tight, because the end result may be the same – and it is not good.

Preparedness and response planning

FMD preparedness and response planning has been occurring at the Federal, state and industry levels. USDA-APHIS has written a detailed FMD Response Plan ("The Red Book") addressing many components of an FMD outbreak. It discusses the history, impact, transmission, diagnosis, immunity and vaccination protocols for FMD. In addition, it contains an incident management plan and outbreak response tools.

One major change in U.S. FMD response since the 1920s is the inclusion of vaccination as one option for responding to an outbreak. During South Korea’s last outbreak, its president reported that...
“traditional quarantine efforts have limits and FMD vaccination may be the best solution.” Traditi-
onal response plans for FMD have been to quarantine, depopulate and eradicate disease. New vaccination strategies bring new options and hope for a more effective response.

On the state level, most states have written extensive livestock emergency preparedness and response plans that detail their response activities relating to a significant livestock disease outbreak. But it is not only the states that have developed emergency plans; livestock industries and associations have done detailed planning in this area too. Therefore, state livestock plans must be integrated with livestock industry plans and it is important to test and validate them through exercises and training events.

Most states have indeed created some type of ready reserve of emergency responders in order to build their capacity to respond more efficiently and effectively to an emergency incident. Here in Colorado we have developed the Colorado Rapid Response for Ag & Livestock (CORBAL) system in which we organize our livestock emergency planning and response activities. One of its key components is the building of a ready reserve of veterinary responders to join a concerted effort by the Colorado Department of Agriculture (CDA) and livestock industries to respond to a potentially damaging livestock disease.

Business continuity planning

Agreements or Memorandums of Understanding (MOUs) between agencies, organizations and other states’ animal health officials are another vital way to increase the ability of states to quickly respond and mitigate infectious livestock disease outbreaks in the event that one occurs. One of the important MOUs that CDA has in place is with the Colorado Department of Public Health and Environment (CDPHE). It gives CDA the lead authority in the state to direct and manage the disposal of livestock carcasses in the event of any “hazards” event that results in mass livestock mortality. Some states have been in discussion with USDA-APHIS and EPA to discuss procedures and decision making tools for the disposal of a large number of livestock carcasses that could occur during a FMD outbreak.

Also, states have done extensive planning and have implemented functional exercises with the USDA-APHIS National Veterinary Stockpile (NVS) program. These efforts have produced state NVS logistical plans, which are key since logistics involved in response activities are often one of the most challenging aspects of any disease outbreak. The NVS holds a reserve of many needed supplies and equipment that would be vital if an FMD outbreak were to occur, in addition to being the conduit to deliver FMD vaccine to affected areas. The vaccine is held in a multi-national reserve called the North American FMD Vaccine Bank and is a joint effort between Canada, the U.S. and Mexico.

MOUs between some states have been developed that allow for movement of both unaffected livestock and personnel across those states’ borders in the face of an outbreak. This ability would be particularly important for those states that have livestock industries that move significant numbers of animals and products into surrounding states or regions via boundary gateways.

These MOUs between states are designed for the business continuity of their stakeholders; therefore the national planning for business continuity of livestock industries spearheaded by USDA-APHIS Veterinary Services is most welcome by industry and state animal health officials. Basically, agricultural business continuity planning has taken place to ensure that livestock producers and agriculture-related industries can retain their businesses in the face of a disease outbreak.

One of those business continuity plans is the Secure Milk Supply (SMS) Plan. This project is intended to identify and address key FMD response issues so that government and industry are better prepared to respond to FMD and to ensure business continuity of the dairy industry in the face of an outbreak. It is a joint project of USDA-APHIS, Iowa State University, University of California-Davis, and the University of Minnesota, along with representatives from industry, state and federal government and academia. It is an issue that is extremely important to federal/state animal health officials, dairy producers, processors, allied industries, policy makers, emergency management, consumers and the nation’s economy. Various states and regions are now in the process of taking the national SMS Plan and applying it to their state or region’s unique dairy industry.

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“This project and regional efforts under way to apply its plan components to that region’s unique dairy industry will provide for specific biosecurity protocols and standards so that if FMD occurs in a country, biosecurity plays a vital role in preventing unaffected farms from getting the disease. For those unfortunate farms that have infected animals, biosecurity is very important in containing the virus so it is not transmitted to other farms.

Last year during South Korea’s FMD outbreak, the country was having a very difficult time getting it under control and the agriculture ministry declared that “all visitors and vehicles should undergo disinfection before they enter any of the locations hit by the outbreak.” South Korea found that to effectively control the outbreak, biosecurity needed to be ramped-up. The SMS project and regional efforts under way to apply its plan components to that region’s unique dairy industry will provide for specific biosecurity protocols and standards so that if FMD does occur in the U.S., needed biosecurity can be ramped-up and quickly implemented.

It would benefit all dairy farms to evaluate their current biosecurity practices for disease prevention and to look for gaps that exist before FMD or another significant livestock disease occur in the U.S. In addition, if we can do some pre-planning, some of the issues that will challenge us during an outbreak may not be so overwhelming when, or if, it ever reappears in our country.