

Foot and Mouth Disease: Keeping it a foreign disease

Foot and Mouth Disease (FMD), the most contagious virus disease affecting livestock, is spreading in parts of Asia and Africa. In this age of rapid, global travel FMD outbreaks anywhere in the world have the potential to spread rapidly to other parts of the world, including North America. As of June 10th 2010, a new outbreak of FMD in Zimbabwe has been reported to the World Organization for Animal Health (also known as OIE). Other outbreaks of FMD are currently active in South Korea, China and Japan . Japan's current foot and mouth disease (FMD) crisis has so far resulted in the destruction of over 152,000 pigs and 33,000 cattle in an attempt to contain the disease .

FMD virus affects cloven-hooved animals including cattle, pigs, sheep, deer, and bison. The virus has seven different serotypes, of which, serotype O is the current strain present in Japan, South Korea, and China. FMDV is highly contagious and can be spread from secretions and excretions of the infected animals. Infected animals can spread the virus up to four days prior to showing clinical signs of the disease. The typical incubation time varies depending on the species of animal infected. Cattle typically have an incubation period from two to 14 days; pigs can have an incubation period as short as 18-24 hours but typically range from two days or longer. Sheep, who generally show mild symptoms of the disease, have an incubation time around three to eight days. The FMD virus can also be readily spread to other animals via the clothing and footwear of people handling the infected animals. Vehicle tires can similarly help spread the FMD virus from farm to farm.

Clinical signs of FMD include vesicle (blister) formation in the oral cavity, lips, and nose as well as lesions around the coronary band, between the claws of their hooves, and on the mammary glands. The ulcerations in the mouth and on the feet are very painful and cause excessive salivation, difficulty eating, and severe lameness. Animals that stop eating because of the painful erosions in the mouth lose weight, milk production stops, and some animals may die from other long term complications.

The United States has not had a case of FMD since 1929 however other diseases such as bovine viral diarrhea mucosal disease, bluetongue, infectious bovine rhinotracheitis (IBR), foot rot in cattle, swine vesicular disease, and vesicular stomatitis have similar symptoms to FMD. Vesicular stomatitis, a virus disease of livestock and horses, has been diagnosed in Arizona in May 2010, which is of particular significance as it is clinically identical to FMD in cattle. Rapid recognition of animals with excessive salivation, vesicles in the mouth and foot lesions causing lameness are classical signs of FMD and Vesicular Stomatitis is critical if the disease is to be stopped from spreading. Any disease in which vesicles are noted in the mouth must be reported to your local veterinarian or State veterinary office. On April 9th 2010, a local veterinarian in Japan was presented with a cow showing signs typical to FMD, but the official diagnosis was not made until April 20th. Such lapses in time before FMD is diagnosed and quarantine control measures implemented can result in the rapid dissemination of the disease.

Should FMD be diagnosed in the United States, the current plans to control and eradicate the disease will entail quarantine of all infected premises, stop movement of all livestock from the affected areas, and depopulation and disposal of all infected animals. It is paramount that the FMD be recognized and reported rapidly to the State Veterinarian in order that the disease be contained. If not diagnosed early and the FMD virus is allowed to spread unknowingly, the economic impact of the FMD on the US economy would be catastrophic!

Biosecurity is key to preventing the introduction of FMD. Preventative measures such as foot bath disinfectants, accurate knowledge of the health status of new animals, and timely quarantine (greater than a week) of all new animals arriving at a facility are critical steps. Since FMD virus can persist on clothing and foot wear, foreign and domestic visitors should provide information about recent visits to farms and other animal contact. This is especially important if international travel involves parts of Asia and Africa where FMD is currently active. Now is not the time to have a bus load of international tourists coming to visit your farm or ranch! Harvey Wagner with the Saskatchewan Pork Development Board in a May 25th article for *Farmscape* urged similar action in regard to FMD biosecurity. "...for this particular disease outbreak...avoid visitors if all possible to the farm but particularly visitors from Asia or if they have been to Asia...they shouldn't be there [on your farm/ranch] for at least 14 days after they've left Asia." When hiring foreigners to work on ranches and dairies, it is very important to consider where the person has recently come from, and to provide appropriate clean clothing and foot wear for working around animals..

In an article from the *Cattle Network* titled "It's Your Responsibility to Fend Off Foreign Animal Diseases" the New York animal health commissioner was quoted as saying, "The current FMD outbreak in Japan should be a wake-up call to all of our livestock producers, as well as the businesses that serve them." The economic impact of a FMD outbreak would be devastating to the agricultural community of the U.S. Tighter biosecurity measures should be implemented and rapid diagnosis is key. Animals showing signs of vesicles or blisters around the mouth, lips, tongue, mammary glands, and/or feet should be promptly and properly diagnosed by your local or state veterinarians. Prompt action is essential to decrease the economic impact of FMD crisis if it were to arrive in the United States.

For further information about FMD, the outbreak in Japan, and biosecurity measures please visit:

<http://www.oie.int>

http://www.cfsph.iastate.edu/Factsheets/pdfs/foot_and_mouth_disease.pdf

<http://www.cfsph.iastate.edu/DiseaseInfo/disease.php?name=foot-and-mouth-disease>

<http://www.aphis.usda.gov>

<http://www.businessweek.com/news/2010-06-09/japan-sees-high-risk-of-foot-and-mouth-expansion-update1-.html>

http://www.promedmail.org/pls/otn/f?p=2400:1001:57555:::F2400_P1001_BACK_PAGE,F2400_P1001_ARCHIVE_NUMBER,F2400_P1001_USE_ARCHIVE:1001,20100420.1284,Y

http://travel.state.gov/travel/tips/health/health_1182.html

<http://www.agmkt.state.ny.us/AI/FMD.html>