



U.S. Closely Watches International Spread of Foot-And-Mouth Disease

by LAURIE FIO

Recent foot-and-mouth disease (FMD) outbreaks worldwide have American health officials on alert. Though the United States hasn't experienced a case of FMD since 1929, officials have diagnosed FMD in 34 countries in the last 18 months. The latest outbreaks occurred in the United Kingdom, Argentina, France and the Netherlands. The only continents that currently remain FMD free are North America, Australia and Antarctica.

ANIMALS AFFECTED

FMD is a highly contagious viral disease that affects cloven-footed (split hooves) animals, domestic and wild. FMD does not affect horses and is not a human health threat, but it has grave consequences to international trade and is one of the most feared animal diseases. Cattle, sheep, goats, pigs and deer are highly susceptible and usually develop clinical signs after only three to five days (incubation period can range from two to 21 days, but usually runs three to five days). Nearly all animals in an exposed herd will become ill, and in some cases, FMD can be fatal in very young animals.

CLINICAL SIGNS

Infected animals develop fever and painful blisters in and around the mouth, nose and feet that causes excessive drooling and lip smacking. In cattle, blisters and sores may also develop on the teats and udders. The blisters break and form raw patches or ulcers. Infected animals frequently show a loss of appetite, decreased milk production and lameness. Secondary complications can also occur such as mastitis, bronchopneumonia, infections in open sores, abortion and substantial weight loss. Surviving animals are

rarely restored to previous levels of productivity or health, and they remain virus carriers for up to two years or more, depending on the species. These carrier animals will shed the virus without showing any clinical signs.

HOW FMD IS SPREAD

FMD is easily spread to susceptible animals through exposure to:

- 1) infected animals added to a herd or flock;
- 2) people wearing contaminated clothing or footwear;
- 3) contaminated facilities or farm equipment;
- 4) contaminated transport vehicles or holding facilities;
- 5) contaminated water, hay, feedstuffs or feeding utensils;
- 6) contaminated hides or pharmaceuticals;
- 7) airborne virus which can spread up to 40 miles over land and 180 miles over water. The virus remains active in the environment for up to one month.

Once infected, animals can spread high numbers of viral particles to other animals and the environment. Infected swine, for instance, can release millions of viral particles when they exhale. People in contact with infected animals are capable of carrying the virus on their clothing and shoes and even in their nasal passages for up to 28 hours. The virus can also be carried in raw meat, animal products or milk from FMD-exposed or infected animals.

HOW IS FMD CONTROLLED?

Killing and disposal of affected and exposed animals is the only way to stop the spread of FMD. Horses are not slaughtered as they are not infected. Authorities must dispose of carcasses by burning, and then disinfect facilities. Restocking takes place after the facility has been vacant for a minimum of 30 days, and new animals are closely observed for recurrence of infection.

ASK THE VET Continued

WHAT IF FMD BROKE OUT IN THE U.S.?

An FMD outbreak would be a disaster for California's agricultural economy. According to a 1998 UC Davis study projecting the estimated economic impacts of an outbreak, it could cost from \$6-14 billion in control costs and lost markets — assuming control was achievable. Exports would be halted indefinitely. Producers and workers in related industries would be seriously affected, including distributors, exporters, packers, retailers and restaurateurs. Other industries, including tourism, would also stand to lose income and jobs. Consumers would lose confidence in the safety of meat food products. For at least three months after the eradication of an outbreak, an affected country is banned from shipping meat or meat products to international trading partners.

Animals in the U.S. are highly susceptible to the FMD virus because they have not developed any immunity to it. If FMD spread unchecked, deer and wildlife populations could become infected and remain a reservoir for the virus. Though there is an FMD vaccine available, authorities only use it in emergencies to create a "disease-free" zone around an infected area. Because vaccinated animals will test positive, they cannot be shipped internationally and protocols require the vaccinated animals to be destroyed as soon as the disease is eradicated.

Veterinarians are on the front lines of prevention. They would likely be the first to recognize and report FMD to authorities. If any animals have blisters in their feet and mouths, a veterinarian should be called immediately for a definitive diagnosis. Vesicular Stomatitis (VS) afflicts horses and cattle and may be confused with FMD because it also causes blisters in and around the mouth and feet. Horses could transmit VS to cattle, which would then appear to have FMD. VS is a reportable disease in California and veterinarians will diagnose it to rule out FMD.

WHAT ABOUT HORSES?

Even though horses, like humans, are not affected by FMD, they can be carriers of the disease. They can spread FMD through the mechanical movement of the virus from their

bodies, shoes and tack. Therefore, many equine events have been canceled or postponed in affected countries, and the international movement of horses has been banned in some areas and closely monitored in others with strict disinfection requirements enforced. The racing industry was taken aback when the British Horseracing Board suspended racing for seven days following initial outbreak in the United Kingdom. Even after racing was reinstated - under stringent guidelines - horse movement in the country remained restricted. Certain equestrian activities continue to be prohibited including hunting and point-to-point meetings. Australia has banned the importation of horses from the United Kingdom and Canada has halted the importation of horses from England.



PRECAUTIONARY MEASURES

Since the most recent outbreak, equestrians in the United Kingdom have been cautioned to avoid riding on farms or grazing lands and to stay off paths closed to the public because of the outbreak. Riders have also been advised to avoid areas contaminated with manure or slurry (soggy mud) and to disinfect animals' feet, person's shoes or boots, and the outside of various clothing or tack that may have been in contact with any other farm articles.

The USDA has instituted precautionary measures for horses that are imported into the U.S. from infected areas.

When horses arrive at the U.S. airports, they are sprayed and/or sponged down with a disinfectant and their hooves are cleaned and disinfected as well as the footwear of personnel accompanying the horses(s). All tack and accompanying equipment is also inspected and disinfected. Crates and transportation vehicles are cleaned and disinfected and all feed, hay, straw and manure must be placed into bags for incineration. Importers are advised to strictly limit the equipment accompanying horses that are imported.

The USDA may employ additional precautionary measures pending current circumstances. Different states are enforcing precautionary measures, beyond the USDA regulations, just to be safe. The UC Davis Center for Equine Health is the west coast's USDA CEM Quarantine Station for horses. Like many U.S. livestock facilities, the Center for Equine Health is also taking extra precautions to ensure that horses coming in or leaving the facility do not spread the disease.

The USDA also prohibits travelers from carrying any agricultural products, particularly animal products, into the U.S., that could spread the disease. Veterinarians and producers should limit foreign visitors to farms to reduce risk of infection. In California, horse owners and handlers should follow the recent California Department of Food and Agriculture's travel alert, regarding precautions needed to avoid bringing the disease into farms or other livestock areas after visiting countries where FMD has broken out. Interested parties should visit the CDFA's Web Site at http://www.cdfa.ca.gov/animal/animal_health/ahweb/BSE_FMD.htm for more information.

UC DAVIS IS PREPARED TO HANDLE INFECTIOUS DISEASE OUTBREAKS

The UC Davis School of Veterinary Medicine has prepared to handle possible infectious disease outbreaks such as FMD by:

- 1) Educating veterinarians to recognize emerging and foreign animal diseases, to manage herd health and to examine other issues in production medicine;
- 2) Training faculty (11 individuals) at USDA's Plum Island Animal Disease Center in New York to recognize FMD;
- 3) Supporting surveillance and diagnostic programs statewide, through the California Animal Health and Food Safety Laboratory System (CAHFS) located at UC Davis;
- 4) Collaborating with state and federal agricultural agencies to recognize the disease, report it immediately and respond in an emergency. Selected faculty members participated in an emergency response exercise led by CDFA and the USDA in 1998 to assess preparedness;
- 5) Developing biosecurity precautions that incorporate control of outside contaminants, visitor restrictions and disinfection procedures on the farm;
- 6) Providing information on infectious diseases to veterinary practitioners through veterinary medicine extension contacts throughout the state, including online access to FMD information: http://www.vetmed.ucdavis.edu/vetext/INFDA_Fadavma2.html;
- 7) Engaging in research—more than 25 faculty are discovering the causes, impacts, treatments, and prevention of infectious disease.

Foot-and-mouth disease concerns the equine industry, as its economic livelihood would be threatened by an outbreak. To prevent such a catastrophe, the UC Davis School of Veterinary Medicine dedicates many faculty and laboratory resources to the prevention of infectious diseases that could directly or indirectly affect horse health. Several faculty members have traveled to England to assist in the containment of FMD. The experience they gain will be of utmost importance to educate U.S. veterinarians in disease control.

If FMD appeared in California, a disaster would be

declared and the Office of Emergency Services (OES) would take charge. Working closely with CDFA to control the disease spread, OES would have the authority to place into service any employee of the State including UC Davis School of Veterinary Medicine faculty.

WHAT CAN YOU DO?

Your participation is vital in preventing FMD in the U.S. The successful eradication of the disease depends on the early recognition of possible clinical signs and the prompt notification to veterinary officials. Follow the USDA's regulations for your horses and if you are traveling abroad, take precautions:

- Avoid contact with animals or areas where animals have been held, for at least five days before returning to the U.S.;
- Before returning to the U.S., launder or dry clean all clothing, jackets or coats;
- If you have visited a farm abroad, if you've traveled and plan to visit a U.S. farm or if you live on a farm, shower, shampoo and change into clean clothing;
- Remove all dirt or organic material from shoes, luggage, personal items, etc. and wipe with a disinfectant;
- Don't bring prohibited products home;
- When you get home, avoid contact with livestock or wildlife for at least five days.

The APHIS Emergency Operations Center has been activated to assist the public and industry members with their FMD concerns. Call 1-800-601-9327 from 8:00 a.m. to 5:00 p.m., Eastern Standard Time, seven days a week. You can also contact the emergency programs staff at 301-734-8073, 800-940-6524 or via e-mail at EMOC@APHIS.USDA.GOV.

For more information, you can visit the following Web sites or simply search the Internet for foot-and-mouth disease as new information appears daily.

Ministry of Agriculture, Fisheries, and Food—UK:
<http://www.maff.gov.uk/animalh/diseases/fmd/default.htm>>

USDA-APHIS FME Home Page:
<http://www.aphis.usda.gov/oa/fmd>

American Horse Shows Association that contains more links:
<http://www.ahsa.org>

Federation Equestre Internationale Press News Page:
<http://www.fe.ch/fei/index.lasso>

Guardian Unlimited Special Report:
<http://www.guardian.co.uk/footandmouth/>

RTE news online:
<http://www.rte.ie/footandmouth/>