

UC Davis Veterinary Medicine Extension, March 2001

Foot and Mouth Disease

Foot and mouth disease is not considered a human health threat. California has not experienced an outbreak of foot and mouth disease since 1929. Yet because of its highly contagious nature and severe economic consequences, the disease is a serious concern in international animal health and a threat to California's beef, dairy and swine industries.

ABOUT THE DISEASE

Foot and mouth disease (FMD) is a highly contagious, debilitating viral disease affecting cloven-footed domestic and wild animals such as deer. Species affected include economically important cattle, sheep and pigs. Because it spreads rapidly and widely, and has grave consequences to animal welfare and international trade, FMD is one of the most feared animal diseases.

FMD can be transmitted to susceptible animals when they are exposed to the following: people wearing contaminated clothing or footwear; infected animals added to a herd or flock; contaminated facilities or equipment on the farm; contaminated transport vehicles; or contaminated water, hay, feedstuffs, hides, or pharmaceuticals. Airborne spread is possible up to 40 miles over land and 180 miles over water.

Current policy for eradication is to establish quarantines, depopulate sick and exposed animals, dispose of animals and disinfect facilities. Vaccination against FMD is considered the last option and is not used except in FMD endemic areas, because vaccination lowers the value of products and limits access to markets.

ECONOMIC IMPACTS

An FMD outbreak would be a potential agricultural disaster. It could cost from \$6-14 billion in control costs and lost markets—assuming control was achievable—according to a 1998 UC Davis study projecting estimated economic impacts of an outbreak. Exports would be halted. Movement of animals within the state and the country would be severely restricted. Note that California income in 1998 alone from exports of milk and cream products was \$275.1 million and from beef products, \$252.7 million. Those exports would stop immediately. Rebuilding farm industries would involve additional expenses and time. Producers and workers in related industries would be affected, including distributors, exporters, packers, retailers and restaurateurs.

WHAT NEEDS TO BE DONE IN THE FACE OF AN OUTBREAK?

FMD must be reported to authorities. Veterinarians are the first to recognize and report FMD to regulatory veterinarians. State and federal agency veterinarians have programs in place to decrease the risk of introduction into the United States and to respond to an outbreak. Authorities require that producers quarantine facilities housing animals suspected of infection with FMD, restrict animal movement on surrounding farms and ranches, and halt exports of animals.

Killing and disposal of affected animals and exposed animals is the accepted method to stop the spread of FMD. Authorities must dispose of carcasses by burial or burning, and disinfect facilities. Restocking is done after the facility has been vacant for a minimum of 30 days, and new animals are closely observed for recurrence of infection.

It is not known how likely an outbreak would be in the United States. Vigilance is critical. There is concern that foreign travelers and visitors from other countries may introduce the disease into the United States without knowing it. When outbreaks occur worldwide, veterinarians and producers should limit foreign visitors to farms to reduce risk of infection. Basic on-farm biosecurity would include disinfectant solutions such as foot baths, disposable boots and disposable coveralls.

VETERINARIANS AND FOOT AND MOUTH DISEASE

Because control is so difficult, preventing introduction of the disease is crucial. Veterinarians assist producers in facing the challenge of recognizing and reporting FMD and would be called upon to participate in the depopulation, disposal, disinfection and evaluating facilities for restocking.

The UC Davis School of Veterinary Medicine plays a key role in being prepared for FMD and other kinds of infectious diseases outbreaks in the following ways:

- Educating veterinarians and providing faculty expertise.
- Training veterinarians to recognize emerging and foreign animal diseases, manage herd health and work on other issues in livestock and poultry medicine.
- Providing information to veterinary practitioners on infectious diseases through online immediate access (foot and mouth disease is included in the following article: [Review of Clinical Signs of Foreign Animal Diseases Which a Mixed Veterinary Practitioner Might Encounter on a Dairy](#)).

- Supporting surveillance and diagnostic programs through the California Animal Health and Food Safety Laboratory System (CAHFS).
- Collaborative efforts with state and federal agricultural agencies to recognize the disease, report it immediately and cooperate in emergency response activities.
- Preparation of key faculty (11 individuals) through training at Plum Island Animal Disease Center to recognize FMD. CAHFS faculty stand ready to assist with response if FMD occurred in California, and selected faculty members participated in an emergency response exercise led by CDFA and the USDA in 1998.
- Conducting of research on infectious diseases--causes, impacts, treatments, and prevention
- Helping to ensure food quality, food safety and availability of low-cost food.

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