



Foot and Mouth Disease (FMD)

Patrick Mies
Graduate Research and Teaching Assistant

Foot and Mouth Disease (FMD) is of great economic importance to world livestock production. FMD is a highly contagious and severe viral disease that survives in lymph nodes and bone marrow at a neutral pH. Cattle, swine, sheep, goats, deer, and other cloven-hoofed ruminants are susceptible to this disease, but not humans. Animals infected with FMD will incur fluid-filled blisters on their mouth, tongue, teats, muzzle, and skin between their hoofs. These blisters will grow large and erupt leaving an eroded, irritated tissue, causing lameness, excessive salivation, and a decrease in appetite. In addition, FMD can cause abortions, decreased conception rates, myocarditis, and death in newborns. Thus, the economic impact of decreased milk and meat production is an enormous problem for producers. Although FMD is not a health concern for consumers, people who come in contact with the virus can spread it to animals through clothing, footwear or other equipment/materials.

The last outbreak of Foot and Mouth Disease in the United States occurred in California in 1929 and was quickly contained and eradicated. By March 2001, there were 170 confirmed outbreaks in the European Union (EU), Saudi Arabia, and Argentina. As many as 115,000 livestock have been incinerated and 31,000 head of livestock were awaiting incineration in Europe by that date.

FMD can survive in a suitable environment for up to one month. Heat, low humidity, disinfectants, and vaccinations can destroy or prevent the disease. However, vaccinating during an outbreak of FMD may contribute to problems tracking diseased animals due to similar antibody production against the vaccination and FMD. In addition, there are seven different serotypes of FMD, requiring seven different vaccinations per animal to prevent the spread of FMD. Due to these problems with vaccinations, the European Union has decided to combat the outbreak with quarantine, movement restrictions, and the slaughter and incineration of infected and suspect animals. On March 6, 2001, the EU closed all livestock markets for two weeks. By mid-March, 2001, tires on vehicles traveling through problem areas were being disinfected, and major sporting events and St. Patrick's Day parades were cancelled to stop the possible spread of the virus.

The most common form of transmission of FMD is through inhalation of virus aerosols. However, infected water, manure, hay, feed, semen, equipment, clothes, footwear, animal handling facilities, vehicles, and tires may also spread the disease. Due to the highly contagious nature of FMD, the USDA has heightened security at all ports of entry into the United States. All agricultural products are being inspected, muddy shoes of passengers traveling from Europe are scrubbed and disinfected, luggage is checked with a dog team, and cargo, especially used tractor equipment from Europe, is carefully inspected by USDA personnel.

Economic losses in the United States, if an outbreak of FMD were to occur, could potentially be severe. Unless found early and eradicated, the disease would quickly spread throughout the United States due to the amount of transportation of livestock across the country. All producers, feeders, and packing plant personnel should check for signs of FMD in cattle, swine, sheep, and goats, and contact the appropriate government and veterinary personnel to quickly stop the spread of FMD.