



Foot and Mouth Disease Guide for Producers

Foot and mouth disease (FMD) is a severe, highly contagious viral disease that infects cattle, swine, sheep, goats, and other cloven-hoofed animals. FMD is considered a foreign animal disease in the US, with the last outbreak of FMD occurring in California in 1929. The disease is widespread in much of the world. Asia, Africa, Europe, and the Middle East, have experienced re-occurring FMD outbreaks over the past several years.

The detection of FMD has immediate and severe implications to domestic and international trade in addition to direct and indirect production losses. The painful lesions associated with the disease create serious animal welfare concerns. FMD is one of the most feared animal diseases worldwide. Awareness and early detection of this disease are critical.

Transmission

The FMD virus spreads to susceptible animals by direct contact with infected animals and their secretions and excretions (including urine, saliva, or semen). Airborne spread is possible for up to 40 miles over land and 180 miles over water. Animals may also be exposed to FMD by:

- Being fed raw or improperly cooked garbage containing FMD-infected meat or meat products,
- Contact with infected animals,
- Contact with contaminated facilities, equipment, or vehicles,
- Exposure to contaminated water, hay, feedstuffs, hides, or pharmaceuticals, and
- Contact with humans wearing contaminated clothing or footwear.

Disease Development

Susceptible animals exposed to FMD develop signs of illness in 3-5 days (range: 1-14 days). Clinical signs may vary with the species affected and the viral strain involved. Virus is present in all excretions and secretions of infected animals. Virus may be present in milk and semen up to four days before clinical signs appear. Cattle may recover from FMD, but can become carriers of the disease for 6-42 months. FMD can impact weight gains, milk production, and conception.

Consequences of FMD

FMD outbreaks are devastating to animal production, animal industries, the economy, and international trade. If FMD is diagnosed, severe trade restrictions, including a ban on export of all cloven-hoofed animals and their products, are inevitable.

Clinical Signs in Cattle

- Fluid filled vesicles of the feet, mouth, nostrils, muzzle, or teats,
- Drooling, lip smack, and teeth grinding,
- Hoof lesions - vesicles on coronary band and between the digits,
- Lameness, and reluctance to move,
- Lack of appetite,
- Fever, and
- Decreased milk production.



Severe oral lesions on cow tongue



Subtle foot lesions on back of cow hoof

Clinical Signs in Sheep and Goats

- Lesions similar to cattle, but often less apparent,
- Erosions on dental pad from ruptured vesicles, and
- Redness of coronary band with or without vesicles.



Sheep dental pad with erosion

Clinical Signs in Pigs

- Foot lesions - vesicles on coronary band, heels, and digits,
- Vesicles and open sores on snout,
- Oral lesions less commonly seen, and
- Lameness.



Vesicles on pig snouts



Pig foot lesions



Report Clinical Signs

If you observe clinical signs compatible with FMD, promptly notify state or federal animal health officials and your private veterinarian. A Foreign Animal Disease Diagnostician (FADD) will be sent to assess the situation. An FADD obtains a thorough history and physical examination of suspect animals. Samples of blood, vesicular fluid, and tissues will be collected and transported to the laboratory. If FMD is suspected, procedures to contain and prevent the spread of the disease are implemented. Other diseases that may show clinical signs similar to FMD include vesicular stomatitis, bovine viral diarrhea, bluetongue, malignant catarrhal fever, swine vesicular disease, and infectious bovine rhinotracheitis. Prompt accurate assessment and appropriate diagnostic testing are essential to differentiate FMD from other diseases.



Painful oral lesions cause lip smacking and drooling

Emergency Response Measures to FMD

- Strict quarantine, biocontainment, and enhanced biosecurity of infected premises,
- Depopulation of animals on FMD-infected premises; prompt destruction and appropriate disposal of carcasses and contact materials,
- Movement restrictions on animals, their products, and their germplasm,
- Closure of livestock markets,
- Trace in and out of infected premises, and
- Thorough cleaning and disinfection of all infected premises, followed by 30 days of vacancy.

Protect California's Livestock Industry

Livestock producers and their veterinarians may be the first to suspect a foreign animal disease based on compatible signs. Oral lesions in livestock may be caused by infectious agents or feed related mechanical trauma. All suspicious cases should be reported and investigated as a potential FAD. A delay in reporting may result in significant spread of disease.

To Help Prevent FMD:

- Promptly report any compatible clinical signs observed in your animals to your veterinarian, or to a state or federal animal health official,
- Implement and maintain farm biosecurity practices,
- Feed only cooked food waste to pigs,
- Avoid visiting U.S. livestock facilities for a minimum of five days after visiting livestock facilities in foreign countries, and
- Consult your veterinarian or local animal health official for specific biosecurity recommendations for foreign travelers or visitors.



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For more information, please visit:
www.cdfa.ca.gov/ahfss/animal_health

For more information and resources:
[Animal Health Branch Biosecurity](#)
[Foot and Mouth Disease \(FMD\) Information](#)

BE PROACTIVE!

Help Keep the U.S. Free from Foot and Mouth Disease!