How to Spot Clinical Signs of Foot-And-Mouth Disease

During a FMD outbreak any of the following symptoms may appear in affected animals and should be immediately reported to the State Veterinarian:

- Marked rise in body temperature for 2 to 3 days, shivering;
- Vesicles (blisters) that rupture and discharge clear or cloudy fluid, leaving raw, eroded areas surrounded by ragged fragments of loose tissue;
- Production of sticky, foamy, stringy saliva;
- Reduced consumption of feed and weight loss, due to painful tongue and mouth lesions;
- Lameness or kicking with reluctance to move;
- Abortions;
- Low milk production (dairy cows);
- Myocarditis (inflammation of the muscular walls of the heart) and sudden death, especially in newborn animals.

The specific signs and their severity vary with animal species and with strain of FMDV (from complete lack of clinical signs to death).

In a naïve population, FMDV multiplies rapidly in multiple animals and spreads rapidly throughout the population. Cattle usually develop clinical signs more rapidly and more severely than other domestic species. Sheep and other small ruminants may have few clinical signs.

Fever (up to 106°F [41°C]), inappetence, and decreased milk production are generally the first signs observed, followed by shivering, lip smacking, kicking, abortion, and sudden death among young animals. These preliminary signs may be observed prior to the formation of vesicles on the oral and nasal mucosa, teats, mammary gland, coronary band, and interdigital spaces. Vesicles are the classic lesions associated with FMD and cause nasal discharge, excess salivation (in cattle), anorexia, and lameness, leading to weight loss and decreased production.[1]

Vesicles (blisters) followed by erosions in the mouth or on the feet and the resulting excessive salivation or lameness are the best known signs of the disease. Often blisters may not be observed because they easily rupture, leading to erosions.

Animals do not normally regain lost weight for many months. Recovered cows seldom produce milk at their former rates, and conception rates may be low.

FMD can be confused with several similar but less harmful diseases, such as vesicular stomatitis, bluetongue, bovine viral diarrhea, foot rot in cattle, and swine vesicular disease. Whenever mouth or feet blisters or other typical signs are observed and reported, laboratory tests must be completed to determine whether the disease causing them is FMD or not.[2]

---

[1] USDA-APHIS-VS-CEAH, National Surveillance Unit, Draft Case Definition for Foot and Mouth Disease (Draft, February 8, 2011), 1.3.
[2] USDA-APHIS-VS, Foot-and-Mouth Disease, Factsheet (February 2007), p. 1.

On-line Guides:

Clinical Signs (Food and Agriculture Organization of the United Nations [FAO], European Commission for the Control of Foot-and-Mouth Disease [EuFMD], 2011)

Clinical Signs of Foot and Mouth Disease (The Scottish Government, 2011).

Clinical Signs of Foot and Mouth Disease (U.K. Department of Agriculture and Rural Development [DEFRA], 2011).

Foot and Mouth Disease (General) and Foot and Mouth Disease (Bovine - Scientific), mpg videos (USDA-APHIS-NAHEM, 2011)

Foot and Mouth Disease, Technical Disease Card (World Organisation for Animal Health [OIE], 2011).

Foot-and-Mouth Disease, Factsheet (USDA-APHIS-VS, 2007).

How to Spot Foot and Mouth Disease (U.K. Department for Environment, Food, and Rural Affairs [DEFRA], 2011).