

Questions and Answers on Foot and Mouth Disease

What is foot-and-mouth disease?

Foot-and-mouth disease (FMD) is a highly contagious viral disease that affects mainly cloven-hoofed animals (i.e. cows, sheep, goats, pigs). Its symptoms include fever, blisters in the mouth, lesions on the feet which can cause lameness, weight loss and a drop in milk production. The disease tends to show up less prominently in certain susceptible species, but this is still a problem as these animals are still infected and can remain carriers of the virus for an extended time period, thereby acting as a source of infection to other animals. FMD is usually not fatal, except for in very young animals. However, it can cause very serious animal welfare problems, and even a single outbreak in livestock can have devastating economic consequences.

How does the disease spread?

Foot-and-mouth disease can be transmitted to susceptible animals through contact with infected animals, or humans who came into contact with infected livestock. The virus can also be transmitted through contaminated housing, equipment, transport vehicles, feeding vessels or water. Sometimes the FMD virus can also be airborne spread, although this is less common than through direct contact.

Does foot-and-mouth disease pose any threat to human health?

The FMD virus can, in theory, occur in humans, but this is extremely rare and there are no public health implications linked to the consumption of meat or products from foot-and-mouth disease infected or vaccinated animals. Nonetheless, in the case of an outbreak of FMD, EU legislation bans the movement of any animals infected with, or suspected to have, the FMD virus. Their products are also banned from being placed on the market. This is in order to prevent further dissemination of the virus.

What EU legislation is in place for the control of foot-and-mouth disease?

Directive 2003/85/EC lays down measures for the control and eradication of foot-and-mouth disease. This legislation was drawn up following the 2001 FMD crisis, taking into account the experience gained during this outbreak. The Directive sets out detailed measures to rapidly control and eradicate FMD and lays down provisions for disease preparedness, including national contingency plans and vaccine banks. It also outlines procedures for recovering "free from FMD without vaccination" status, which is important for trade, and sets the framework for the possible use of emergency vaccination as part of the control measures in an outbreak.

Under EU legislation, what measures must be taken if there is an outbreak of foot-and-mouth disease?

In the event of an outbreak of foot-and-mouth disease, the affected Member State must immediately put in place the measures laid down in EU Directive 2003/85/EC.

These include:

- Culling and destroying all susceptible livestock on the infected holding
- Tracing and destroying meat and other products from the infected holding
- Placing strong restrictions on the movement of people, vehicles or other animals in the area surrounding the infection.
- Cleansing and disinfecting the affected holding and any vehicles or equipment which entered that holding.
- Detailed conditions are laid down for the restocking of the holding, which can only take place 21 days after the cleansing and disinfection operation is complete.

National authorities must establish a protection zone with a radius of at least 3km and a surveillance zone with a minimum radius of 10km around the site of infection.

In these zones, a series of restriction and control measures are applied. These include restrictions on the movement of susceptible animals in and out of the areas, and conditions for the dispatch of products from susceptible animals from these zones. Stringent bio-security measures must also be applied on all holdings which have cloven-hoofed animals, and monitoring of all susceptible animals must be stepped up.

What are the trade implications when FMD is confirmed in a Member State?

The World Organisation for Animal Health (OIE) is the internationally recognised body for setting standards on animal health related issues. The OIE a disease-free status list related to certain diseases including FMD. That serves a guideline for countries when deciding on their import policy. As soon as there is an outbreak of foot-and-mouth disease, the whole country loses its FMD-free status. The OIE then provides for several scenarios to recover the free status, depending on whether or not vaccination is used to control the outbreak. The shortest period in which disease-free status can be recovered is 3 months after cull of the last infected animal. Until the free status is recovered, other countries can ban live animals and animal products from the affected country.

The EU follows the principles of the OIE. However, through a harmonised decision by all Member States, it may be decide to impose certain trade restrictions on the affected region alone, and to allow trade in commodities that are considered to be safe. Such products may include those that were obtained before the infection occurred or were treated in a way which would inactivate the virus.

What happened during the 2001 FMD outbreak in the EU?

In February 2001, an outbreak of foot-and-mouth disease was confirmed in Essex, in the UK. The disease spread rapidly and the crisis lasted for 10 months in the UK. During this time there were 2 034 outbreaks, extending to 10 124 farms and leading to the slaughter of around 4 million animals. In addition, more than 2 million animals were slaughtered because of the welfare problems that arose when they were confined to farms following movement restrictions. The 2001 crisis also affected France (two outbreaks), Ireland (one outbreak), and the Netherlands (26 outbreaks).

Overall, for the 2001 FMD crisis, the total expenditure declared by all affected Member States (France, Ireland, Netherlands, and the UK) was about 2,693.4 million EUR, of which 1,616 million EUR was claimed for Community reimbursement. This covered for compensation for slaughter and destruction of animals as well as disinfecting of farms and equipment.

Following the decision to reimburse losses related to the FMD crisis of 2001, the EU paid a total of 465.6 million EUR to Member States from the EU Veterinary Fund.

Does the EU provide any funding for losses incurred through a FMD outbreak?

Yes. The EU provides 50% co-funding to compensate for measures required under EU legislation to bring the disease situation under control. This includes the destruction of animals and their products, cleaning and disinfection of holdings, losses incurred to farmers due to restrictions on the marketing of their products, sometimes transport of carcasses to rendering plants. The funding is provided through the EU Veterinary Fund.

Is vaccination against foot-and-mouth disease possible?

Prophylactic vaccination has been banned in the EU since 1992 (Directive 90/423/EEC), although it is carried out by certain countries in other parts of the world.

With regard to emergency vaccination, the FMD Directive states that when there is an outbreak of the disease in a Member State, the authorities must immediately prepare a complete vaccination campaign as a precautionary measure. From the second outbreak, the Member State authorities may choose to start vaccinating if necessary. The FMD Directive 2003/85/EC provides guidance for national authorities in deciding whether or not to carry out emergency vaccination. Aspects to be taken into account are the threat of the disease becoming widespread in the affected Member State, or the risk of the disease spreading to other Member States, the density of the susceptible population, the delay in disease reporting, the involvement of pigs producing a lot of airborne virus, etc.

What are the restrictions and trade rules for vaccinated animals?

Vaccination is carried out in a pre-defined vaccination zone. established around the area where the vaccinated animals are located. The live animals from that zone cannot be moved for 6 months after vaccination, in line with the OIE provisions. From 30 days after vaccination onwards every vaccinated animal must be individually tested. If they are found to be free from any sign of previous contact with the virus, then they can be moved within their own Member State, 6 months after the last outbreak or the last vaccination. However, they may not be traded to other Member States or countries that are free of FMD without vaccination.

Regarding the meat and products of vaccinated animals, there is no threat to human health. Within the first 6 months after vaccination, the meat from vaccinated animals must be matured and de-boned as a precautionary measure, to prevent any potential spread of the virus. After the 6 month period has passed, and the animals have undergone this individual check, the meat can be placed on the market as normal, just like meat from any other animal vaccinated against a variety of other diseases.

Is it possible to differentiate between vaccinated and infected animals?

Vaccination with the currently available vaccines does not guarantee protection against infection, although it protects against the disease. However, it is possible to detect, with a high degree of certainty, those animals within a vaccinated herd that had contact with the virus. The detection systems work on the basis that modern inactivated vaccines are highly purified

from certain proteins which are generated during virus replication. The EU is well equipped to use such detection systems. A huge amount of work has gone in to surveillance and differentiation techniques, and all the technology is in place to test for viral antigen, viral genome and antibodies against the virus. The tests to check this have been approved and validated and Member State experts are fully trained to carry out the checks.

Are there bio-security rules in place for FMD (and other research) labs?

Strict rules for the security measures that must be applied in any EU laboratory handling the foot-and-mouth virus are laid down in Annex 12 of the FMD Directive. Under these rules, labs must meet or exceed the biosecurity measures laid down by EUFMD (most recently updated in 2005) and endorsed by Council Decision 91/666/EEC. These include safety precautions such as the use of inactivated virus when possible, the prevention of illegal access to the lab, proper cleaning and disinfection facilities for staff and equipment that are in contact with the virus and safe disposal of animal carcasses. The labs are also subject to relatively regular inspections, including unannounced checks.