

Foot and mouth disease: Fresh cause for concern

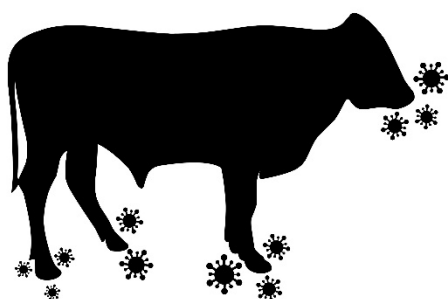
SUMMARY

It has been 14 years since the last outbreak of foot and mouth disease (FMD) in a European Union (EU) country. However, three water buffaloes have recently tested positive for the disease in Germany. While FMD poses no risk to human health, it is a highly contagious viral disease that can affect various cloven-hoofed animals. The speed with which the disease spreads makes it essential to cull all animals hosted on the affected farm once an outbreak is detected, and to apply strict biosecurity measures. This results in significant economic losses.

As a result of the 2001 outbreak in the United Kingdom (UK), over 6 million animals were culled in one year, costing more than £3 billion (more than €6.5 billion at current prices) in public expenditure and having a huge impact on the tourism sector.

The EU has legislation in place outlining rules for the prevention and control of animal diseases such as FMD, including a notification system integrated into the World Animal Health Information System to facilitate a coordinated approach. The European Commission also cooperates with the United Nations Food and Agriculture Organization (FAO) to fight the spread of the disease.

Since 1990, the use of preventive vaccines against FMD has been prohibited in the EU, except for in certain cases and in emergencies. Although conventional FMD vaccines protect livestock from developing the disease, vaccinated animals may still become infected and carry the disease.



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Introduction

Foot and mouth disease (FMD) is a highly contagious viral disease targeting [cloven-hoofed animals](#). Although the disease is rarely fatal in adult animals, its economic impact is significant, causing substantial losses in productivity and hindering international trade.

Although the disease poses no threat to human health, the disastrous economic consequences that its spread can cause obliges Member States to have contingency plans in place.

Foot and mouth was the first disease to prompt the World Organisation for Animal Health (WOAH) to create an official list of member countries that have achieved disease-free status. This status can be granted to entire countries or specific zones within countries, allowing for targeted recognition of areas that have successfully eradicated FMD.

What is foot and mouth disease?

[Foot and mouth disease](#) is a viral, [non-zoonotic](#) (i.e. not transmissible to humans), disease affecting cloven-hoofed ruminants (i.e. cattle, sheep, goats and pigs, among others). It is caused by an aphthovirus of the *Picornaviridae* family. Transmission occurs through direct contact with infected animals, who carry the virus in their excretions and secretions, as well as through contact with contaminated objects such as boots, clothes, tyres, equipment, hay, feed, water, milk or biological material). The virus can also be transmitted through ingestion of infected meat or animal products.

Foot and mouth disease virus (FMDV) can survive on organic matter for extended periods under specific environmental conditions. Reported [survival](#) times include up to 20 weeks on hay, 4 weeks in cow hair at mild temperatures, 14 days in dry faeces, 39 days in urine, 6 months in slurry during winter, and 28 days in soil during autumn. FMDV has been detected in bovine semen, and even when frozen at -50°C , the virus can remain potent for up to 320 days. Additionally, typical pasteurisation processes do not inactivate the virus, which can still be found in milk, cheeses and butter. FMDV has been found 4 months after slaughter in frozen liver and after 352 days in salted hides.

Clinical [symptoms](#) vary depending on the species affected and the viral strain involved. In cattle, where symptoms are more severe, they can include fever, sores and blisters on the feet, lips, tongue or inside the oral cavity. This can lead to extreme lameness, reluctance to move or eat, reduced milk yield (up to 80 %), shivering and smacking of lips. While mortality is generally low in adult animals (1–5 %), recovered animals may remain debilitated and may still carry the virus, potentially causing new outbreaks. Mortality can reach 20 % in young animals, usually due to multifocal myocarditis.

Suspicious about the presence of FMD can be based on clinical signs, but the disease cannot be clinically distinguished from other vesicular (blister-causing) diseases such as swine vesicular disease, vesicular stomatitis and vesicular exanthema.

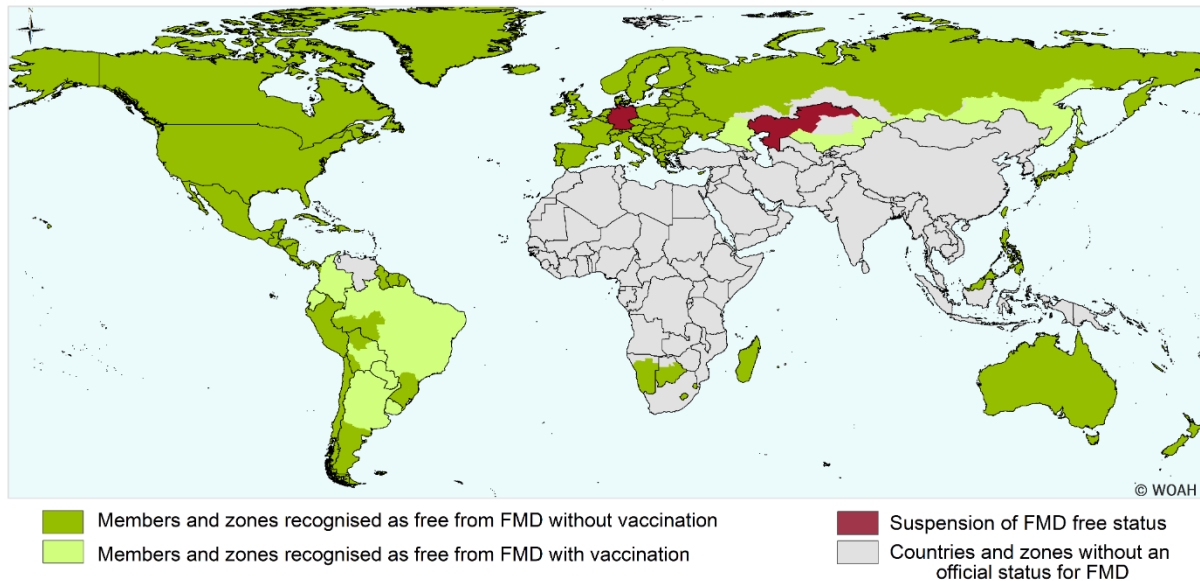
In 1990, the European Union implemented a policy prohibiting the use of FMD vaccination as a preventive measure. While vaccination with conventional FMD vaccines can protect animals from developing the disease, it does not prevent infection and could result in an animal becoming a carrier. [Commission Delegated Regulation \(EU\) 2023/361](#), which lays down rules for the use of veterinary medicinal products, including vaccines for the prevention and control of certain listed diseases such as FMD, includes specific conditions for emergency protective vaccination (as outlined in Annex VII).

Reporting an outbreak in the EU

When an outbreak of FMD or another [notifiable disease](#) is discovered, the competent authorities of the affected state must report it in the [EU Animal Diseases Information System](#) (ADIS). The WOAH defines notifiable diseases as 'transmissible diseases that have the potential for very serious and rapid spread, irrespective of national borders, that are of serious socio-economic or public health consequence and that are of major importance in the international trade of animals and animal

products'. Developed in collaboration with the [WOAH](#), ADIS serves the purpose of simplifying data exchange with the [World Animal Health Information System](#) (WAHIS), while also enabling the exchange of information between competent national authorities and tracking how the disease is progressing.

Figure 1 – WOAH members' official FMD status map (last update January 2025)



Source: [World Organisation for Animal Health](#), 2025.

On 10 January 2025, the German authorities [notified](#) an outbreak of FMD in a water buffalo establishment in Brandenburg, where three out of the fourteen animals hosted died. The National Reference Laboratory and the [EU Reference Laboratory for FMD](#) confirmed that the identified virus is FMD serotype O. Notably, its genetic sequence closely matches a strain previously detected in Turkey in December 2024, as well as in Middle Eastern countries. Germany immediately applied all legal provisions envisaged during an outbreak.

This is the first outbreak in an EU country since the 2011 incident in Bulgaria, which occurred around 2 km from the Turkish border. In that case, three wild boars were shot and their carcasses tested positive for FMD.

EU legislation

[Regulation \(EU\) 2016/429](#) (Animal Health Regulation) provides the legal framework, while detailed rules for the prevention and control of category A diseases (such as FMD) are outlined in [Commission Delegated Regulation \(EU\) 2020/687](#). According to Article 5 of Regulation (EU) 2020/687, operators who suspect the presence of a category A disease in an establishment must isolate all suspected animals, as well as manure, litter and used bedding, and protect them from insects and rodents. They must also:

- implement additional biosecurity measures;
- cease all movements of kept animals to and from the establishment;
- prevent non-essential movements from the establishment;
- update production, health and traceability records;
- follow instructions from the competent authorities.

Article 12 of the same Regulation describes the steps to be followed in the event of a confirmed outbreak:

- all animals must be killed as soon as possible on site within the establishment;
- all appropriate and necessary biosecurity measures must be taken;
- bodies or parts of kept animals that have died or have been killed must be disposed of in accordance with [Regulation \(EC\) No 1069/2009](#);
- any potentially contaminated products, materials or substances in the establishment must be isolated until they are disposed of or processed, cleaning and disinfection measures are completed, and disposal is completed under the supervision of official veterinarians.

Some derogations to these rules are provided for in Article 13 of Regulation (EU) 2020/687.

The regulation also outlines additional control measures, measures to be applied in the restricted zone (Article 22), measures to be applied in establishments within the protection zone (Article 25), specific conditions for authorising movements (Articles 29 to 37), and the duration of disease control measures in the protection zone (Article 39).

Chapter V details measures to be taken in the event of a suspected outbreak (Article 62) or an outbreak (Article 63) in wild animals. When an outbreak is confirmed in wild animals, the competent authorities must form an operational expert group to assist them in assessing the epidemiological situation and its evolution, defining the infected zone, establishing the appropriate measures to be applied in the infected zone and their duration, and developing an eradication plan, if necessary.

Impact on the economy

When FMD appears in a country, the impact on the economy is immediate. To contain the disease, infected or at-risk animals must be culled and destroyed without undue delay, and enhanced biosecurity measures must be implemented. At farm and producer level, this results in a loss of the entire livestock population and its products, leading to a fall in revenues and increased costs for putting biosecurity measures in place.

Internationally, in accordance with Article 6 of the [World Trade Organization's Sanitary and Phytosanitary Measures \(SPS\) Agreement](#), trade should continue outside restricted regions in line with the standards

set by the WOH. Trade partners should adhere to the [regionalisation principle](#), which defines the boundaries of affected regions from which animals and/or their products cannot be moved or commercialised. While the WOH standards aim to protect trade partners from the spread of the disease, they may create significant [trade barriers](#), particularly if emerging requirements are difficult to meet.

The [2001 outbreak](#) of foot and mouth disease in the UK

Between 20 February and 30 September 2001, the UK reported 2026 outbreaks of FMD affecting various species. The first outbreak was discovered in pigs at an abattoir in Essex. From there, the disease spread to more than 2 000 other livestock farms across 44 counties. The outbreak had a devastating impact on the farming sector, resulting in the slaughter of over 6 million animals and an expenditure of £3 billion (more than €6.5 billion at current prices) for the public sector. The graphic images of burning animal carcasses, widely broadcast by the media, deterred both international and local visitors from travelling to rural areas. The British tourism sector and its supporting industries bore the brunt of this impact. Estimated losses were over £5 billion (almost €11 billion at current prices).

European Commission for the Control of Foot and Mouth Disease

The [European Commission for the Control of Foot and Mouth Disease \(EuFMD\)](#) has been a leading organisation in the fight against FMD in Europe since its establishment in 1954, and operates under the umbrella of the UN Food and Agriculture Organization. With cooperation from its 39 member

nations, the EuFMD strives to increase their [readiness](#) to respond to outbreaks, as swift action is essential in preventing the disease from spreading further. The EuFMD also collaborates with 20 priority countries in the European neighbourhood, working to establish effective and sustainable control programmes that reduce the impact of FMD, while also advocating for the global strategy for progressive control of FMD (GF-TADs Global Strategy). The EU's European Commission is an active partner of the EuFMD and is supporting [Georgia](#) and [Turkey](#) in their activities against the disease by distributing the FMD SAT-2 vaccine and monitoring the progress of the vaccination campaigns.

European Parliament

In 2016, the European Parliament and the Council adopted the [Animal Health Law](#) (AHL), a comprehensive regulatory framework designed to consolidate and simplify the legislation in place. The AHL was further supported by delegated and implementing acts, which allowed for flexibility to adapt to changing circumstances. Additionally, Members of the European Parliament [ensured](#) that both the Parliament and the Council would have a role in developing and updating a list of high-risk diseases, such as African swine fever, avian influenza, and foot-and-mouth disease, in close consultation with experts from the European Food Safety Authority (EFSA).

As early as 2002, the Parliament adopted a [resolution](#) on measures to control foot-and-mouth disease in the European Union in 2001 and future measures to prevent and control animal diseases in the European Union. The Parliament recommended that the Commission review its overall strategy for preventing and controlling livestock diseases, taking into account the impact of globalisation on the spread of animal diseases. Furthermore, the Parliament suggested that the Commission consider supporting national compulsory insurance schemes for livestock farmers or providing financial assistance to affected Member States. Additionally, the Parliament recommended that the Commission publish a communication on possible insurance schemes or guarantee funds to cover the costs of FMD and other livestock diseases.

MAIN REFERENCES

European Commission, [Foot and Mouth Disease](#), website.

European Union Reference Laboratory for [Foot and Mouth disease](#), website.

Food and Agriculture Organization of the United Nations (FAO) and the European Commission for the Control of Foot-and-Mouth Disease ([EuFMD](#)).

World Organisation for Animal Health, [Foot and Mouth Disease](#), website.

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