

Science Media Centre Fact Sheet

Foot and Mouth Disease (FMD)

What is it?

- It is an infectious disease caused by a virus.
- Affects wild and domestic cloven-hooved animals (sheep, pigs, goats, deer) and also elephants, hedgehogs and rats.
- Doesn't usually cause death of animals, except in severe cases in older animals and it sometimes can cause heart failure in lambs. Animals can recover after 2-3 weeks but the discomfort is severe and long term health effects are common.
- Secondary infections can sometimes worsen the effects of FMD
- In cattle it is particularly serious for the long-term health of the cow and can lead to loss of milk yield, chronic mastitis, abortion, sterility and chronic lameness and sometimes chronic heart disease.

How does it spread?

- Mainly by the movement of infected animals and the movement of infectious material carried on the wheels of cars, or on people's boots
- Usually spreads between animals via contact with fluid from blisters, saliva, milk and dung either directly or from contaminated objects.
- In some cases can be spread via airborne virus if the climatic conditions are right

Does it affect humans?

- There has only ever been one case of FMD in a human in Great Britain and that was in 1966. This person was only very mildly affected.
- The condition "hand foot and mouth disease" in humans is not related to FMD
- The FSA advises that there is no risk from the human food chain.

What are the symptoms?

- The main symptoms in cattle are due to the effects of blisters (Vesicles) that form in the mouth and around the tops of the hoofs – these then ulcerate between the cleat (what would be toes on humans) and also just above the hoof.
- These are very sore and painful to the animals and so cattle show signs of lameness due to pain in the feet – so some cows may be reluctant to rise – and also will salivate excessively due to producing saliva to ease the pain of the blisters in the mouth and also because it is sore to swallow. They tend to show excessive tongue movements and smacking of the lips.
- In the initial stages before the blisters develop then the animal may stop eating and will have an elevated temperature which can lead to depression in the animal and decreased milk yields in dairy cows.

What are the distinctive clinical indicators that identify foot and mouth, rather than something else?

- Like all diseases not all animals show all of the clinical signs at any one time. The only way that you can definitely confirm it is with clinical tests. (Other diseases can produce ulcers in the mouths of cows).
- One of the main differences from other diseases in cattle is the ease with which the disease can spread and the number of animals affected on a farm at anyone time. The welfare implications of the disease are probably greater than for most of the other endemic diseases in the country.
- There are a variety of diseases endemic in the UK which can be confused with FMD such as Bovine Viral Diarrhoea (BVD) but they tend to affect only small number of animals at anyone time.

Does the disease differ in other species? Do they show similar symptoms?

- In other species the symptoms in pigs are relatively similar – and pigs produce more virus per animal than cattle.
- The disease is less severe in sheep and the lesions tend to be more difficult to spot.

In the event of an outbreak

- disinfection of people and equipment coming into contact with infected animals is very important
- the disease control policy is to slaughter all animals on the affected premise and any others that may have been in contact with infected animals
- movement restrictions are put in place with protection and surveillance zones
- there is an option for vaccination that could be taken up in addition to slaughter

Vaccination

- Vaccination can be used as part of a wider control strategy for foot and mouth but not as an overall solution due to several limitations
- The vaccination must be tailor-made for a particular strain as immunity is virus type-specific. This causes delay in the vaccination programme
- Current vaccines only provide 6 months' protection at best
- There is a danger that vaccinated animals, although protected against the disease, may become carriers if they are exposed to a new outbreak of the virus

How long can the virus survive?

- This depends on the conditions and the material the virus is harboured in.
- Survival times vary from 14 days in dry faeces up to around a month in urine.
- It's possible that the virus could have survived for the past month or longer if harboured in slurry.
- Survival time on the ground varies from 3 days in summer to 28 days in winter.

Sources & further information

<http://svs.mri.sari.ac.uk/NewsFM.htm>

<http://www.defra.gov.uk/footandmouth/about/qanda.htm>

Graham Brooks, President, British Cattle Veterinary Association

Professor Ian Jones, Director of Research, Biomolecular Science, University of Reading

Dr Laurence Tiley, Senior Lecturer in Molecular Virology, Cambridge University

Royal Veterinary College
<http://www.warmwell.com/>

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