

**APHIS Evaluation of FMD Status of Great Britain (England, Scotland, Wales, and the
Isle of Man)**

May 2002

**Animal and Plant Health Inspection Service
Veterinary Services**

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Executive Summary

This evaluation is the third supplement to an assessment conducted by the Animal and Plant Health Inspection Service (APHIS) [1] on the risk of importing foot-and-mouth disease (FMD) into the United States from animals and animal products originating from the European Union (EU). This evaluation assesses the current situation and risk associated with Great Britain (England, Scotland, Wales and the Isle of Man).

Restrictions were placed on the United Kingdom at the time FMD broke out in the region and the UK was removed from the list of FMD-free regions maintained by APHIS [2]. Because this action was taken separately from APHIS actions taken for other EU Member States that had outbreaks, and the risk associated with the UK remained high because of the scope, duration and magnitude of the epidemic, the UK was not considered directly in the subsequent APHIS evaluations. However, this evaluation constitutes a follow-up of the subsequent APHIS evaluations that re-assessed the risk of regions classified as "higher" risk for FMD.

The initial APHIS evaluation provided the basis for removal of France, Ireland, and The Netherlands from the list of FMD-free regions maintained by APHIS [3]. Subsequent supplements to that evaluation provided the basis for reinstating the FMD-free status of France, Ireland, Northern Ireland, and The Netherlands [2, 4].

In its initial assessment, APHIS evaluated the risk associated with export of animals and animal products from thirteen Member States, i.e., Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, and Sweden [1]. This action was taken because of concerns over the open borders and free trade in animals and animal products that exist within the EU. This initial evaluation was conducted to determine whether APHIS should continue to consider the EU as an entity or whether it could regionalize the European Union by individual Member States.

The assessment supported regionalization of the EU by Member States. In the assessment, APHIS established two risk categories. One was designated "higher risk," the other was designated "lower risk." APHIS assigned a "higher" risk classification to the three Member States (i.e., France, Ireland, and the Netherlands) in which outbreaks had been detected. The ten Member States in which no outbreaks had been detected were classified as "lower" risk. The assessment considered the States or regions in the "higher risk" category to pose an unacceptable level of risk, and those Member States were removed from the FMD-free list [4]. Member States in the "lower risk" category remained on the FMD-free list. The administrative ban on these Member States was removed, and trade could resume.

In the interim rules that removed the UK, France, Ireland, and The Netherlands from its FMD-free list, APHIS agreed to re-evaluate the FMD status of the affected Member States or regions using a regulatory process intended to facilitate animal health status recognition of regions. This process has been completed for France, Ireland, and The Netherlands.

After France, Ireland, and The Netherlands met the criteria of the Office International des Epizooties (OIE) for reinstatement of disease-free status, APHIS reevaluated the FMD status of these areas. It also included Northern Ireland in this evaluation because the number of outbreaks in the country was limited, and it is separated from the rest of the UK by water.

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APHIS solicited updated information from the Member States or regions, conducted a site visits [5-8], and summarized its findings [9, 10]. Based on the results of its reevaluations, APHIS reclassified France, Ireland, The Netherlands and Northern Ireland into the "lower risk" category and reinstated these Member States into the FMD-free list [2, 4].

In this review, APHIS presents the results of an evaluation of the FMD status of the remainder of the UK, i.e., Great Britain (England, Scotland, Wales, and the Isle of Man). This evaluation was conducted partly on the basis of documentation from the Department for Environment, Food, and Rural Affairs (DEFRA) that disease had been eradicated for at least 90 days (3 months) after destruction of the last case. This is the period of time designated in OIE recommendations for resumption of disease-free status. In fact, at the time the site visit was conducted, Great Britain had remained FMD-free for a period exceeding 4 months. The evaluation was also based on a site visit conducted jointly by the Canadian Food Inspection Agency (CFIA) and APHIS.

APHIS personnel were unable to identify significant risk factors remaining after disease was eradicated that would justify maintaining Great Britain in the "higher" risk category. Therefore, APHIS reassigned Great Britain to the "lower" risk category described in the initial assessment of the European Union.

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Introduction

On February 20, 2001, FMD was detected in the UK. Disease subsequently spread throughout the UK including Northern Ireland (February 21, 2001), and was confirmed in France (March 12, 2001), Ireland (March 20, 2001), and The Netherlands (March 21, 2001) [11].

Following the initial outbreak in the UK, APHIS issued an administrative ban on importation of animals and animal products from the UK including Northern Ireland [12]. APHIS ultimately reinforced this ban with an interim rule, incorporating the ban into its regulations [2].

When disease spread to France, Ireland, and The Netherlands, APHIS issued a second administrative ban that prohibited imports of susceptible animals and their products from the thirteen remaining EU Member States that APHIS had recognized as free of FMD at the time of the outbreaks [12]. This action did not affect Greece since Greece was not recognized free at the time the ban was implemented.

Before implementing an interim rule removing all thirteen of the Member States from its FMD-free list, APHIS evaluated the risk of exporting infected animals and animal products from the EU to the US. This evaluation identified the actual occurrence of outbreaks in an individual Member State as the factor contributing most to the risk of exporting infected animals or products [1]. Therefore, APHIS published an interim rule that removed France, The Netherlands and Ireland from its FMD-free list [4].

In its initial evaluation of the thirteen EU Member States that APHIS had recognized as free of FMD at the time of the outbreaks, APHIS classified each of the Member States into two general categories, one of "higher" risk and one of "lower risk." Primarily because of the outbreaks, France, Ireland, and The Netherlands were assigned to the "higher" risk category. Since APHIS could identify no risk factors that it felt could justify removing all of the Member States under consideration from its list of FMD-free regions, the ten remaining Member States were assigned to the "lower" risk category. By implication, although not stated directly in either the initial assessment of the continental Member States, APHIS classified the UK including Northern Ireland in the "higher" risk category.

After France, Ireland, and The Netherlands met the applicable OIE criteria for reinstatement of freedom, APHIS re-evaluated the FMD status of these Member States. France and Ireland were evaluated first [13, 14] since these Member States met the OIE criteria for resumption of FMD-free status before The Netherlands did. The fact that The Netherlands used emergency vaccination as a tool in eradication of the disease meant that it took longer for the Member State to achieve disease-free status.

Northern Ireland was evaluated along with the The Netherlands, separately from the rest of the UK because it was separated by water, only two FMD outbreaks were detected, and Northern Ireland met the OIE criteria for resumption of disease-free status while disease outbreaks continued in the rest of the UK. APHIS subsequently reassigned the three Member States and Northern Ireland to the "lower risk" category [9, 10] and reinstated these countries to the list of FMD-free regions [2, 4].

On September 30, 2001, the UK reported its last case of FMD. This document reports the results of an evaluation by APHIS in conjunction with the Canadian Food Inspection Agency (CFIA) of Great Britain's FMD status. This evaluation was conducted after Great Britain

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(England, Scotland, Wales, and the Isle of Man) had met the OIE criteria for reinstatement of its FMD-free status and had been recognized by OIE as regaining this status.

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Objective

The objective of this review is to evaluate the risk associated with the resumption of trade in susceptible animals and animal products from Great Britain (England, Scotland, Wales, and the Isle of Man) to the US. This evaluation is intended to provide a basis for estimating the risk of releasing restrictions from Great Britain, recognizing England, Scotland, Wales, and the Isle of Man as free from FMD and reinstating Great Britain to the APHIS FMD-free list.

APHIS Approach to Regionalization

The Department for Environment, Food, and Rural Affairs (DEFRA) provided information to APHIS and CFIA regarding the status of its FMD eradication efforts. In addition, a team of APHIS personnel conducted a site visit jointly with personnel from CFIA and the State Veterinarian of Arizona to validate the information provided and evaluate the FMD situation in these regions. The evaluation is based on documentation provided by DEFRA [13-21], published work [22, 23], OIE reports [11], and observations made during a site visit [10, 21].

Evaluation Format

This document represents a third supplement to an initial assessment [1]. As a supplement, it relies on the initial assessment for details of the scope of the evaluation, a summary of European Commission (EC) legislation, and a statement of the OIE standards for length of disease-free periods recommended to reestablish disease-free status in regions that have experienced FMD outbreaks. This information applies to Great Britain, even though the region was not considered directly in the initial evaluation.

The primary OIE criterion that is applicable to this reevaluation is the criterion that, when FMD occurs in an FMD-free zone where vaccination is not practiced, 3 months must lapse after the last case when stamping out and serological surveillance are applied [24]. The last case in Great Britain occurred in September 2001, the animals were slaughtered immediately, and more than three months had elapsed by the time this evaluation was conducted.

Information on FMD in Great Britain

Detailed information on the sequence of events, the scope of the epidemic, traceback information, slaughter policy, surveillance procedures, import restrictions, control measures, restocking, and swill feeding are described in detail in the two site visit reports [25, 26]. These reports were generated independently by APHIS and CFIA personnel after a joint site visit was conducted from January 28 through February 1, 2002. The Arizona State Veterinarian also participated in the review.

Because these reports adequately describe the situation during the epidemic and discuss the efficacy of the control and surveillance procedures, the information is not repeated here. Rather, both site visit reports are attached.

Appendix A is the report from the CFIA, "Evaluation of FMD Status of Great Britain, On-site visit report," March 12. The document represents a combined site visit report and evaluation of the FMD risk in the UK.

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In its report, CFIA concluded the following:

1. *Based on the review of control and eradication measures taken by DEFRA and results of surveillance performed so far, it was concluded that the risk of the presence of FMD virus in Great Britain at this date is negligible.*
2. *The ban on swill feeding in the UK adopted in May 2001 is a very important mitigating measure for preventing FMD. Compliance verification of this ban as well as compliance verification of adequate disposal of waste food taken from ships, aircrafts or vehicles entering Britain are critical. Although illegal imports remain an important risk factor in the UK, the work undertaken by DEFRA is a positive step in addressing this issue. On the question of legal importation of meat we can observe that some commodities imported in the EU from some trading partners and under specific requirements would not be allowed into Canada. The UK will emphasize on the 100% documentation and identity checks for meat imported from FMD countries.*
3. *Results of investigation have shown a delay between introduction of the virus in the country and reporting. The earliest date for the introduction of virus in the first infected premise has been estimated from epidemiological investigations as the 2nd February 2001. The delay between introduction of disease and its reporting constitutes a period at risk where FMD susceptible commodities could be traded. However, during the epidemic, prompt detection and recording of disease was observed in general and this level of awareness can certainly result in a higher capacity to detect and report new incursions of exotic disease in the future.*

The problem of tracing capability through proper animal identification has not yet been resolved.

The CFIA report stated further, *“Following a meeting of the Disease Status Evaluation Team (DSET) of CFIA held on February 21, 2002, it is recommended that CFIA officially recognizes Great Britain free of FMD with no vaccination.”*

The APHIS report, “APHIS/CFIA site visit – FMD outbreak in Great Britain” is contained in Appendix B. In its report, APHIS concluded the following:

1. *Great Britain had implemented adequate surveillance and control measures to eradicate FMD.*
2. *Great Britain had maintained FMD-free for 3 months, thereby meeting OIE criteria for reinstatement of FMD-free status.*
3. *DEFRA had addressed the issues of swill feeding, control of international waste, and illegal imports adequately, with the caveat that all risk from these areas can never be completely mitigated.*
4. *Because the magnitude of the outbreak was so great and its effects were so devastating to the United Kingdom, DEFRA has developed an increased level of sensitivity and an enhanced level of awareness of the potential for disease incursions. Relevant to this, two suspect cases were reported to international trading partners after the outbreak was controlled. These were detected and reported rapidly, and DEFRA quickly confirmed that neither case was FMD.*
5. *The risk of exporting FMD-affected animals and products from Great Britain is so low as to be negligible.*

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Summary and approach to evaluation of risk factors

The initial analysis that APHIS conducted focused on the outbreaks that occurred within the EU. APHIS identified the occurrence of an outbreak as the major risk factor associated with animals and products exported to the United States. Eradication of disease should mitigate that risk.

After disease moved beyond the UK, disease spread was not nearly as extensive as it had been in the UK. In fact, it appeared that low risk areas might remain on the European continent. In an attempt to define those low risk areas, APHIS identified risk factors associated with non-UK EU Member States. APHIS evaluated these risk factors and assigned individual Member States to "higher" and "lower" risk categories.

This evaluation is intended to assess whether Great Britain can be reassigned from the "higher" risk to the "lower" risk category.

Risk Factors applicable to Great Britain

Delay in detection of disease

The delay between the estimated time of introduction of disease and detection permitted relatively widespread movement of infected animals. In this regard, the outbreak coincided with a time in which large numbers of animals were being transported for slaughter to serve as food for cultural events.

Although it required a considerable amount of time to accomplish and major adjustments in policy and practice throughout the course of the epidemic, ultimately control and eradication were achieved. The measures used to accomplish this included a stamping-out policy in conjunction with movement control measures, serological surveillance, import controls, a complete ban on swill feeding, and enhanced control of international waste.

The epidemiological investigation of the outbreak raised the possibilities of various illegal activities. These include possible swill feeding, animal movement, and import issues. These have been addressed in various ways to the satisfaction of APHIS.

Of note is that two suspect cases have been reported since the end of the epidemic. Both were quickly identified, reported, and confirmed as diseases other than FMD.

Import controls

DEFRA is examining methods to enhance its import controls further. The agency has taken various actions including checking all consignments of meat from FMD affected countries, increasing the level of surveillance for undeclared consignments, developing "stop and search" authority, attempting to increase public awareness, reviewing procedures to dispose of waste from ships and airplanes, and initiating a project with sniffer dogs. It is also considering new options to control passenger baggage.

Finally, DEFRA is conducting a risk assessment intended to identify relevant risk pathways and increase efficiency of targeting mitigations. This should assist in identifying appropriate mitigations that can be implemented to reduce risk.

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Role of sheep in the epidemic

Prior to the epidemic, the role of sheep in transmission of FMD was not clearly recognized. In fact, before the disease was detected, many of the large numbers of animals being transported were sheep. Clinical signs were mild, making detection difficult. Sheep management practices, such as grouping or gathering of animals at central locations and movement of shearers also contributed to disease spread.

The increased level of consciousness over the role of sheep in disease transmission has promoted regulatory changes intended to address the issue. Relevant to this, DEFRA prohibited markets for sheep until May 15, 2002. Although DEFRA subsequently allowed these markets to reopen, they are now to operate only under very stringent licensing and movement control procedures. Also, DEFRA informed producers and industry representatives to maintain procedures that permit differential diagnosis for FMD, especially during the lambing period when there are abortion signs.

Role of swill feeding

Improperly cooked swill appeared to constitute the original source of disease. To address this issue, the UK banned swill feeding in May 2001 [13, 15, 19, 27]. The measure taken by DEFRA is positive action and should reduce risk from this source. Compliance with this ban is critical.

New test procedure for serological surveillance

DEFRA was criticized initially for use of outdated serological procedures that were too cumbersome to keep up with the sample load. DEFRA developed a new test that was simpler, faster, and effective. The test has been validated by DEFRA. Sensitivity and specificity have been assessed and are acceptable, although sensitivity was assessed with a relatively small number of samples. Results have been documented and submitted to OIE for evaluation and inclusion in the Manual of Diagnostic Standards [28] as an internationally recognized test.

Conclusions

APHIS cites the following factors as relevant to the situation in Great Britain:

- No new outbreaks have been detected more than three months after the last infected animal was slaughtered.
- DEFRA was able to effectively control FMD despite the magnitude and scope of the epidemic.
- DEFRA officials learned valuable lessons during the epidemic. These have raised the level of governmental and public consciousness concerning disease risk and fostered the development of new regulations to address that risk.
- Disease control and subsequent surveillance has been effective. Identification and follow-up of suspect cases has been swift.
- DEFRA has banned the practice of swill feeding.

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Risk Evaluation

Staff officers from APHIS, Veterinary Services, evaluated the risk and developed a general consensus opinion on the relative risk associated with Great Britain in the same context as described in the previous evaluations for France and Ireland [9], The Netherlands and Northern Ireland [10], and the original assessment of the thirteen EU Member States [1].

In this regard, APHIS could identify no additional risk factors currently applicable to Great Britain that would justify keeping England, Scotland, Wales, and the Isle of Man off the list of regions APHIS considers as FMD-free. However, APHIS recognizes that compliance with new measures such as the ban on swill feeding and implementation of new controls on imports and international garbage are critical to maintain disease-free status.

Risk categories considered were "lower" and "higher." Previously, by implication, Great Britain was classified as being in the "higher" risk category. In this re-evaluation, Great Britain (England, Scotland, Wales, and the Isle of Man) was reassigned to the "lower" risk category.

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Bibliography

1. FMD Risk Assessment for the Export of Animals and Animal Products from European Union Member States to the United States, May 2001, Animal and Plant Health Inspection Service.
2. Change in Disease Status of Great Britain and Northern Ireland Because of Foot-and-Mouth Disease, Federal Register 66 (50), pp. 14825-14826, March 14, 2001.
3. Regions where rinderpest or foot-and-mouth disease exists; importations prohibited and restrictions on importation of meat and other animal products from specified regions, In: Title 9, Code of Federal Regulations, Section 94, Parts 1 and 11 (9 CFR 94.1 and 9 CFR 94.11).
4. Change in Disease Status of France, Ireland, and The Netherlands Because of Foot-and-Mouth Disease, Federal Register 66 (106), pp. 29686-29689, June 1, 2001.
5. Trip Report: APHIS FMD Site Visit - France, APHIS, Veterinary Services, June 11-13, 2001.
6. Trip Report: APHIS FMD Site Visit - Ireland, APHIS, Veterinary Services, June 13-15, 2001.
7. Trip Report, APHIS FMD Site Visit - Ireland, APHIS, Veterinary Services, June 13-15, 2001.
8. Trip Report, APHIS FMD Site Visit - France, APHIS Veterinary Services, June 11-13, 2001.
9. APHIS Evaluation of the FMD Status of France and the Republic of Ireland, August 2001.
10. APHIS Evaluation of FMD Status of The Netherlands and Northern Ireland, Animal and Plant Health Inspection Service, Veterinary Services, October 2001.
11. Office International des Epizooties, Disease Information (weekly reports): http://www.oie.int/eng/info/hebdo/a_current.htm.
12. USDA Announces Additional Measures to Guard Against Foot-and-Mouth Disease: Press release, <http://www.aphis.usda.gov/lpa/press/2001/03/fmdmeas.txt>. 2001.
13. Animal By-Products (Amendment), (England) Order 2001, Feeding to Livestock of By-Products from the Food Industry: Ban on Swill-Feeding, Action Note 2001/29, Emergency Instruction 2001/18/VTSET, Chapter 14, May. 2001.
14. Map: Veterinary Field Service Regional & Divisional Structure (excluding area offices), SOAEFD Drawing Office, Saughton House Edinburgh EH11 3XA.
15. Animal By-Products (Amendment), (England/Scotland/Wales) Order 2001, Feeding to Livestock of By-Products from the Food Industry: Ban on Swill-Feeding, Action Note 2001/29, Chapter 14, 23 May. 2001.
16. Laboratory Protocol: Ideal Sequence of Events to set-up a RIA - Blue Box, Alison Wiseman, Blue Box Co-ordinator, 29 January. 2002.
17. The Role of the Institute of Animal Health, Pirbright Laboratory, in the UK 2001 FMD Epidemic (FAO/OIE World Reference Laboratory for FMD), Source not identified. 2001.
18. MHS Meat Hygiene Service, Concession Form no. 29, dated 24/09/01, applicable to MHS Operations Manual Volume 1, Chapter 14, Section 1 for Foot and Mouth Disease, Control Procedures Applicable in Slaughterhouses. 2001.
19. Animal By-Products (Amendment) (England) Order 2001: Ban on the Feeding of Catering Waste as Swill to Livestock, Guidance on the Disposal of Food Waste Following the Ban on Swill-Feeding, 25 May. 2001.
20. Foot and Mouth Disease 2001, State Veterinary Service Epidemiology Report, Four weeks ending Sunday 21st October, 2001, Department for Environment, Food and Rural Affairs, in four parts: (1) Summary of the epidemic since 23rd September 2001, (2) Full description of the epidemic since 23rd September, (3) Epidemiological History of the UK FMD Epidemic, 19th February - 21st October 2001, (4) Information on Serosurveillance. 2001.

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21. Foot and Mouth Disease in the United Kingdom 2001, Department of Environment, Food, and Rural Affairs report to the OIE, January 14, 2002.
22. Gibbens, J.C., C. E. Sharpe, J. W. Wilesmith, L. M. Mansley, E. Michalopoulou, J. B. M. Ryan, M. Hudson, Descriptive epidemiology of the 2001 foot-and-mouth disease epidemic in Great Britain: the first five months, *Veterinary Record*, pp. 729-742, December 15, 2001.
23. Comment: The 2001 FMD epidemic: how the disease took hold, *Veterinary Record*, p. 721, December 15, 2001.
24. Foot and mouth disease In: *International Animal Health Code. Mammals, birds and bees*, Office International des Epizooties, eighth edition, Paris, 1999.
25. APHIS/CFIA site visit - FMD outbreak in Great Britain, APHIS report of site visit conducted with CFIA personnel, January 28-31, 2002.
26. Evaluation of FMD Status of Great Britain, on-site visit report, CFIA report of site visit conducted with APHIS personnel, January 28-February 1. 2002.
27. Action Note 2001/56, Chapter 25d, Changes to the National Feed Surveillance Programme, 7 September 2001.
28. Office International des Epizooties, World Organisation for Animal Health, *Manual of Standards for Diagnostic Tests and Vaccines, Lists A and B diseases of mammals, birds and bees*, 2000.