

# Animal welfare consequences in England and Wales of the 2001 epidemic of foot and mouth disease

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## Summary

The ethical issues surrounding slaughter as a means of control of a disease epidemic are discussed and the use of this method as at least one component of the eradication of foot and mouth disease (FMD) is justified. The Royal Society for the Prevention of Cruelty to Animals received numerous complaints of suffering at slaughter during the FMD epidemic in the United Kingdom in 2001 but none led to prosecution because of lack of evidence. Movement restrictions imposed as part of the disease control strategy caused major welfare problems on farms which were unaffected by disease. These issues are detailed. Significant breaches of transport regulations appear to have occurred.

## Keywords

Animal welfare – Foot and mouth disease – Great Britain – Risk assessment – Slaughter – United Kingdom – Vaccination.

## Introduction

The foot and mouth disease (FMD) epidemic of 2001 led to the killing of larger numbers of animals as a means of disease control than any other epidemic in the last forty years. Inevitably the general public, who saw images of funeral pyres of thousands of animals on their television screens nightly, questioned the efficacy of such large-scale slaughter as a means of disease control in the 21st Century. The public were upset further by the poor welfare conditions which existed on many farms as a result of other restrictions imposed as part of the disease control strategy adopted by the Ministry of Agriculture Fisheries and Food (MAFF) and its successor ministry, the Department for Environment, Food and Rural Affairs (DEFRA). Animal welfare has therefore been a significant element in the public discussion about the eradication of the disease. The Royal Society for the Prevention of Cruelty to Animals (RSPCA) expended considerable effort during the course of the epidemic to minimise suffering to animals. At the height of the epidemic, a quarter of the RSPCA inspectorate workforce, supported by a large number of administrative staff, worked exclusively on the

consequences of FMD to attempt to minimise the resultant animal suffering.

## Ethics of slaughter as a means of disease control

The arguments for eradication of FMD may be made on both economic and direct welfare grounds. The welfare benefits of eradication are founded on the prevention of suffering to those individual animals which become infected and suffer varying degrees of pain from the lesions caused. While this suffering is likely to be controlled by euthanasia for domesticated species if stamping-out is practised, the suffering of susceptible wildlife species is liable to be prolonged and most unlikely to be controlled in any way other than by natural predation. Significant welfare penalties would therefore be likely for susceptible wildlife if FMD were endemic.

The RSPCA considered that, where animals showed severe signs of FMD, euthanasia was justified to alleviate the suffering

of the affected animal. Similarly, where an animal was at a high risk of transmitting the disease to another, either in the same group or in another with which it had had significant contact, the RSPCA supported the slaughter of the infected animal to control the epidemic and therefore prevent the suffering of other animals.

The economic benefits of the continuing ability to export meat and dairy products have been debated at length but are not of primary concern to the RSPCA. However, a change in the value of an animal should it show signs of disease is often associated with a subsequent change in attitude of the owner of the animal. Significant resources are unlikely to be expended on the health and welfare of production animals of low capital value, whereas high-value animals receive significantly better treatment. Therefore, anything which has the effect of reducing the fiscal value of farm animals is likely to have an impact on their welfare. The loss of export markets inevitably reduces the value of animals and so exports do indirectly affect welfare. Needless to say, the RSPCA is strongly against live export because of the welfare penalties implicit in long distance transport, but a carcass trade is still an important stimulus to the value of farmed animals.

The issues surrounding the use of vaccination as a means of disease control will no doubt be debated elsewhere. Regrettably, the public debate on such matters during the epidemic was generally of poor quality and supported by little sound science or acceptance of what was commercially available at the time. Little effort or resources have been committed in recent years to developing modern vaccination schemes for use as part of a disease control programme. This omission may well have had a significantly adverse effect on overall animal welfare.

However, the slaughter of large numbers of apparently healthy animals as a part of the contiguous cull caused significant disquiet and was a policy to which the RSPCA was opposed from the outset. The logic of killing animals which are assessed as being likely to be infected and not yet showing clinical signs is entirely supportable. However, the unnecessary killing of animals which are unlikely to be infected can be prevented by proper risk assessments for each group of animals. These assessments should be carried out locally, taking into account a number of factors including geography and weather, as well as other means of potential disease spread from infected premises. Important disease vectors include humans and vehicles. Biosecurity is therefore an essential factor which should also be included in risk assessment. From the information available, it seems clear that in many instances, no proper risk assessment was conducted and many animals were apparently killed without good cause.

The increase in the numbers of animals to be killed also imposed additional strain on the resources mobilised for the slaughter procedures and consequently reduced the quality of slaughter. This issue will be addressed later. A further likely

consequence was an increase in the interval between the diagnosis of disease and slaughter, with animals continuing to excrete virus during this period. Published epidemiological models (3) show that reducing the diagnosis-to-slaughter interval is a critical factor in controlling the disease and it seems likely that the increased numbers, and hence increased interval, may have contributed to the spread of disease in addition to augmenting the numbers of animals killed. The many additional movements of personnel and vehicles necessitated by the increased slaughter may also have contributed to the spread of the disease.

In spite of the fact that a lot of prime breeding stock was culled, a large proportion of the animals would have been slaughtered as part of the normal production process. However, the fact that their death may have served no real purpose does affect the attitudes of society and engenders a sense of waste and so, moral indignation.

## Slaughter

The animals slaughtered directly as a result of FMD were mainly killed on farms. The slaughter technique varied according to the conditions on the farm and the age and species of animal to be slaughtered. The three main techniques used were as follows:

- captive bolt weapon followed by pithing or bleeding
- free bullet weapon
- chemical.

In addition, many uninfected animals subjected to movement restrictions were killed at slaughterhouses and their carcasses rendered. The monitoring of such slaughter was undertaken in the usual way and the RSPCA has no evidence to suggest that standards in abattoirs were any different from those pertaining in normal circumstances.

The slaughter of animals both in abattoirs and for disease control is regulated by the 1995 Welfare of Animals Slaughter or Killing Regulations (WASK) which stipulate the method of slaughter for each species (1). Different schedules relate to different circumstances where killing may be undertaken. Schedule 9 relates to slaughter for the purpose of disease control and when a captive bolt is used to stun the animal, the Regulations state:

‘(e) captive bolt, provided that:

- i) the animal is either pithed or the blood vessels in its neck are severed without delay afterwards and in any event before the animal regains consciousness and
- ii) apart from the requirements in i) above, nothing more is done to the animal before it has been ascertained that the animal is dead.’

The RSPCA received complaints during the FMD epidemic from members of the public relating to slaughter incidents on 130 premises, with 83 being fully investigated. In spite of having extensive biosecurity training, RSPCA inspectors were unable to gain access to the majority of slaughter sites and were therefore unable to effectively monitor the efficacy of slaughter techniques. However the complaints received were all investigated with a view to raising charges of causing unnecessary suffering, under the 1911 Protection of Animals Act. Inevitably, there was no access to forensic material for any case as carcasses had been disposed of by the time that the RSPCA managed to reach the location. This is largely the reason why no case has come to prosecution.

The complaints varied considerably in nature. In a significant number of cases, animals were said to show signs of consciousness some hours after being stunned with a captive bolt pistol; some were even said to be standing. Most killing was carried out by slaughtermen seconded from abattoirs. In an abattoir, stunning with a captive bolt pistol is followed rapidly by bleeding and the blood loss causes death. On a farm situation and because FMD virus is carried in the bloodstream, it was not desirable to bleed animals. The animals should have been pithed, but this process has now been altered in slaughterhouses by Statutory Instrument 2001 No. 447 of The Restriction on Pithing (England) Regulations 2000 (2), as part of the control measures of transmissible spongiform encephalopathies. Many slaughtermen seemingly failed to pith animals after stunning or to ensure they were dead, which led to recovery of consciousness later which is in clear breach of WASK regulations.

In general, veterinary surgeons appear to have supervised slaughter, but at the height of the epidemic, veterinarians were tasked to concurrently supervise multiple slaughter sites which might be many miles apart. Clearly, proper supervision of slaughtermen in such circumstances is impossible and this operational decision by MAFF may have contributed to some instances of inappropriate slaughter.

On other occasions, animals which were unused to restraint were apparently slaughtered using free bullet weapons. Where such animals were adequately penned before slaughter, few problems were reported to the RSPCA. However, where penning was not used, a number of instances were reported where attempts of the slaughtermen at killing led to the panicking of the animals and on occasions, their escape.

A small number of mass slaughter sites were established where dangerous contact animals were killed. At the largest of these sites at Great Orton in Cumbria, the RSPCA provided inspectors to monitor slaughter almost throughout the operation. A temporary slaughterhouse, comprising short-term holding pens and covered slaughter pens, was erected by the

army, and carcasses were buried on site. The site was well supervised and the welfare of animals safeguarded.

Significant numbers of very young lambs were killed. In general, this was undertaken by injection of pentobarbitone sodium using the intracardiac route. The route is specifically mentioned as appropriate on many data sheets for the drug and on those occasions when the author witnessed the method used by veterinary surgeons, the technique appeared not to cause any suffering. However, questions were raised about whether the technique was appropriate and a few veterinary anaesthetists expressed concern. Further research would be helpful to clarify whether such concern is justified.

In summary, there is some evidence of inappropriate slaughter on a significant number of occasions with clear breaches of WASK regulations and in many of these instances, supervision was clearly inadequate. Where supervision was good and adequate facilities provided, animal welfare seems to have been satisfactory.

One other issue was raised during the epidemic. The epidemic started at the height of the gestation period for sheep and because the majority of infected animals to be slaughtered were sheep, many animals killed were heavily pregnant. The fate of the foetuses, which were often at full term, caused some adverse comment as it was not clear whether death by inevitable anoxia following the death of the ewe was free from distress. No specific evidence could be found to support the assertion that no distress was caused. The RSPCA therefore suggested, on the precautionary principle, that heavily pregnant animals should first be sedated with a suitable drug which crossed the placenta. While this advice was followed on some occasions, there were many others where it clearly was not. Further research in this area would be helpful.

## Movement restrictions

Movement restrictions inevitably play a major part in the control of an epidemic. In the FMD epidemic, these restrictions resulted in significant animal welfare consequences. While these have been in part ameliorated by Government-sponsored slaughter schemes, the RSPCA used up to a quarter of its inspectors to provide assistance to farmers at the height of the epidemic.

British farming methods entail significant movements of livestock. These may be as simple as movement of dairy cattle within a farm, movement of fat animals to slaughter or transport of ewes to and from winter keep. During the FMD epidemic, all such movement was at first halted and later performed under licence only. The licence system was slow and bureaucratic and, at least at first, insufficiently resourced. It is believed the consequence of this was more animal suffering than that caused to animals slaughtered directly. A number of different circumstances caused difficulty.

In intensive farming systems, the space in fattening pens is limited although the input from new-born stock is continuous. This is particularly true for the pig industry so that, if fat stock are not regularly sent for slaughter, overcrowding rapidly becomes a problem, potentially resulting in cannibalism. This became a feature of the epidemic at an early stage. Once movement to slaughter was licensed the problem was resolved, particularly in disease-free areas which fortunately included most areas of the country where the majority of pig farms are located.

Hill sheep are generally over-wintered on lowland keep which may be many miles from the home farm. In particular, root crops in East Anglia are used. As the epidemic began in mid-February, many pregnant ewes were still on winter keep and could not be moved to other neighbouring fields or returned to their home farms. Spring 2001 was one of the wettest for many years and the fields rapidly became a quagmire. Farmers were often many miles away and therefore unable to properly monitor their stock. To compound the welfare difficulties of these animals, many began to lamb and some farmers were unable or unwilling to provide any significant assistance. The RSPCA deployed a task force of staff to East Anglia and undertook an extensive and successful lambing programme for many thousands of these ewes.

The Livestock Welfare Disposal Scheme (LWDS), introduced by the Government, was intended to alleviate overstocking where this was causing welfare problems on farms. Animals were initially valued at a relatively inflated price which increased demand well beyond the capacity of the bureaucracy and significant delays between a farmer applying to enter stock into the LWDS and removal of the stock to slaughter were therefore observed. Where welfare conditions on farms were relatively good, this did not cause a problem, but in many instances conditions were such that in normal circumstances, the RSPCA would have considered prosecution under the 1911 Act. To allow better prioritisation of applications to the LWDS, RSPCA inspectors were tasked to visit farms and assess the welfare of the animals being introduced. Where welfare was very poor, farmers were provided with the resources (often financial) to allow them to improve conditions until the animals could be removed as high priority cases. Up to 80 inspectors, a quarter of the inspectorate, were relieved of their normal duties and deployed on this task for many weeks at the height of the epidemic.

In general, the most scarce resources were forage and bedding. The RSPCA ran a brokerage system in an attempt to bring together those farmers who were prepared to donate or sell items to those desperately in need. The scheme ran locally initially but was later extended nationally. However, the scheme was most successful in the south-west in co-operation with the Arthur Rank Centre (ARC)-Addington Fund and received matched funding by the Government. Although there was considerable local variation in shortages and a mercifully late

autumn meant grass continued to grow for longer than usual in many areas, brokerage schemes remained active well after the last reported case of FMD.

In the United Kingdom, cattle over thirty months of age do not enter the food chain as a precaution against bovine spongiform encephalopathy (BSE). These cattle are killed and their carcasses rendered under the Over Thirty Months Scheme (OTMS). Movement restrictions and insufficient rendering capacity for carcasses resulted in the suspension of OTMS and since the animals were not eligible to enter the LWDS, this also led to overstocking on farms. While there was no direct deleterious effect on the welfare of many of these cattle, they continued to occupy space and eat forage which compounded the shortages detailed above.

## Transport

The introduction of the LWDS and the centralisation of slaughter at some large sites such as Great Orton resulted in many animals being transported to slaughter at a stage of their life cycle which would be unusual in normal circumstances. Transport of live animals is controlled by the 1997 Welfare of Animals Transport Order (WATO). Specific exclusions of animals fit to be transported include animals late in gestation and those in the first few days of life, generally before the umbilical cord has healed, together with any animal which is unfit.

The schemes such as the LWDS, introduced to allow animals to be removed from overcrowded farms, inevitably required transport of animals under licence. However, Article 6 of the WATO does allow that, under exceptional circumstances, those animals which are usually deemed unfit for transport, can be transported providing that the intended journey is not likely to cause them unnecessary additional suffering. RSPCA inspectors intervened on a number of occasions to prevent the transport of heavily pregnant ewes which were destined for a long journey to the slaughter site at Great Orton. These animals were then slaughtered *in situ*. However, several reports of ewes lambing in transit were received.

## Conclusion

The RSPCA was heavily involved in the consequences of the FMD epidemic. There was significant evidence that the welfare of many animals was adversely affected both directly and indirectly by measures taken to control the disease. No lessons appear to have been learned from previous disease epidemics regarding the consequences of such measures. Suitable contingency planning taking into account welfare considerations as well as scientific advances will hopefully be developed in preparation for future outbreaks.

## Conséquences pour le bien-être animal de l'épizootie de fièvre aphteuse survenue en Angleterre et au pays de Galles en 2001

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### Résumé

L'auteur aborde les problèmes éthiques soulevés par l'abattage en tant que moyen de lutte contre une épizootie et justifie le recours à cette méthode comme l'une des composantes de l'éradication de la fièvre aphteuse. La Société royale pour la prévention de la cruauté envers les animaux (Royal Society for the Prevention of Cruelty to Animals) a reçu de nombreuses plaintes concernant les souffrances infligées aux animaux lors des abattages pratiqués durant l'épizootie de fièvre aphteuse qui a sévi au Royaume-Uni en 2001. Toutefois, ces plaintes n'ont donné lieu à aucune poursuite, faute de preuves. Les restrictions imposées aux déplacements d'animaux dans le cadre de la stratégie de lutte contre la maladie, ont été à l'origine de problèmes importants pour le bien-être des animaux dans les exploitations non touchées par la maladie. Ces problèmes sont examinés dans le détail. Il semblerait que des infractions graves à la réglementation sur les transports aient été commises.

### Mots-clés

Abattage – Bien-être animal – Évaluation du risque – Fièvre aphteuse – Grande-Bretagne – Royaume-Uni – Vaccination.



## Consecuencias sobre el bienestar animal de la epidemia de fiebre aftosa de 2001 en Inglaterra y Gales

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### Resumen

El autor aborda las cuestiones éticas que rodean el sacrificio sanitario como medida de control de una epizootia y justifica la aplicación de este procedimiento como uno de los elementos integrantes de la campaña de erradicación de la fiebre aftosa. La Sociedad Real de Prevención de la Crueldad con los Animales (Royal Society for the Prevention of Cruelty to Animals) recibió numerosas denuncias por los sufrimientos infligidos a los animales sacrificados durante la epizootia de fiebre aftosa que asoló el Reino Unido en 2001, pero ninguna de ellas acabó en los tribunales por falta de pruebas. Las restricciones al desplazamiento de animales impuestas como parte de la estrategia de lucha contra la enfermedad dieron lugar a graves problemas de bienestar animal en explotaciones no afectadas por la epizootia, cuestión que el autor trata en detalle. Todo parece indicar que se produjeron importantes violaciones del reglamento de transporte.

### Palabras clave

Bienestar animal – Evaluación de riesgos – Fiebre aftosa – Gran Bretaña – Reino Unido – Sacrificio – Vacunación.



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