9. Control of animal disease epidemics

Introduction

9.1 To control and eradicate livestock disease epidemics, coordinated action on a national basis among farmers, private vets and government veterinary services is required. The method of eradication has changed little since 1714, when an epidemic of rinderpest was stamped out by destroying all infected cattle, disinfecting cow byres, quarantining in-contact herds and controlling cattle movements.\(^{195}\)

9.2 A critical step to be made before eradication measures can be required by government is for the disease to be made ‘notifiable’. This chapter describes experience of disease epidemics and eradication programmes in the UK, focusing on notifiable diseases in cattle. The warble fly eradication programme, and its role in the widespread use of organophosphates on cattle in the early 1980s, is reviewed in Annex 1. The debate about organophosphates as a possible cause of BSE is discussed in vol. 2: Science.

Monitoring the emergence of new diseases in livestock

9.3 At the time BSE emerged the identification and subsequent monitoring of new diseases in cattle relied on a ‘passive surveillance’ system, which is discussed in vol. 3: The Early Years, 1986–88. This system relied upon vets in private practice voluntarily referring novel cases to their local Veterinary Investigation Centre.

Eradication of notifiable diseases

9.4 The Animal Health Act 1981 gives the Government power to make a disease notifiable by making an appropriate Order (see vol. 14: Responsibilities for Human and Animal Health). The Government has classified as notifiable a large number of diseases that affect cattle and other livestock. When they break out on farm, these diseases must be notified to the Divisional Veterinary Officer at the local MAFF Animal Health Office. Before 1986, notifiable diseases relevant to cattle included anthrax, brucellosis, enzootic bovine leukosis, foot and mouth disease, tuberculosis and warble fly.\(^{196}\) BSE was made notifiable in June 1988.\(^{197}\)

9.5 The Government applies several criteria to establish whether a livestock disease should be made notifiable. Particular factors are whether it poses human health

\(^{195}\) M11C tab 4 p. 80

\(^{196}\) J Webster, Understanding the Dairy Cow

\(^{197}\) The Bovine Spongiform Encephalopathy Order 1988 (L2 tab 1)
risks; is a serious threat to the overall health status of the national herd, or to the productivity of the beef and dairy industry; and/or puts the export trade in associated products at risk. Under Council Directive 82/894/EEC, the EU can require notification of animal diseases in the Community. Diseases that require notification are listed in an annex, which included, for example, foot and mouth disease.\footnote{L18 tab 15; OJ L 378/58 of 31 December 1982. Commission Decision 90/134/EEC (L18 tab 21; OJ L 76/23 of 22 March 1990) added BSE to the list of notifiable diseases and required weekly notification to the European Commission of outbreaks of BSE from 1 April 1990}

9.6 Notification enables the Government to ascertain more easily the status of the disease on a national level, and to impose statutory movement controls and eradication schemes to rid the national herd of the disease as quickly as possible. Eradication timescales vary according to the notifiable disease. Although eradication schemes are usually based on slaughtering affected animals as the main source of infection, the eradication policy for BSE, at least in the early days, was based on the ruminant feed ban, which reduced the risks of transmission by cutting off the source of infection.\footnote{S92 Taylor paras 21–2} The Government provides the funding for control and eradication of notifiable diseases, and the framework through the State Veterinary Service.

**Examples of eradication schemes for other notifiable diseases**

9.7 In the section that follows, examples are given of eradication and control measures for notifiable diseases that preceded BSE. A common feature of the schemes described is that the disease could be detected in a live animal. This was not the case with BSE, which could only be confirmed by examining the brain of the slaughtered animal. The notification and accompanying slaughter and compensation policy for BSE is discussed in vol. 3: *The Early Years, 1986–88*. Annex 2 describes the on-farm notification procedures for BSE.

**Foot and mouth disease**

9.8 Since 1892 UK policy for eradicating foot and mouth disease has relied on slaughter of infected herds, for example, during the serious epidemic in 1922. Isolation was also used if it was thought the disease could be contained, but since 1925 the slaughter policy has been rigidly applied: infected animals are slaughtered immediately, and remaining animals on the farm are slaughtered following valuation. During the last major outbreak of foot and mouth disease in 1967–68, compensation for affected animals was set at their value immediately before they become affected. In every other case compensation was set at the value of the animal immediately before it was slaughtered.\footnote{M52 tab 8 p.60}

9.9 When a MAFF officer suspects a case of foot and mouth disease, a five-mile movement restriction zone around the farm is imposed and, upon confirmation, the zone is extended to ten miles.\footnote{M52 tab 7 paras 130–3}

9.10 There are vaccines against foot and mouth, and it is anticipated that these may have to be used to help control any future large-scale outbreaks.\footnote{J Webster, *Understanding the Dairy Cow*, p. 265}
Brucellosis

9.11 Brucellosis was first recognised in the UK in the 19th century, but national schemes to deal with the disease were not developed until the middle of this century. The main stages of the brucellosis eradication efforts are as follows:

i. 1942–79: calves were vaccinated under the ‘Panel Scheme’, ‘Calfhood Vaccination Scheme’, and ‘Free Calf Vaccination Scheme’. These schemes were voluntary, and were designed to prevent the spread of infection in affected herds.

ii. 1967–79: disease-free herds could be accredited under the ‘Brucellosis (Accredited Herds) Scheme’ and the ‘Brucellosis Incentives Scheme’. The aim was to build up a reservoir of disease-free stock, and farmers were encouraged to participate by a combination of slaughter and compensation, government payments to accredited herds, and higher prices obtainable by accredited stock.

iii. 1971–79: compulsory eradication in designated areas under the ‘Brucellosis Eradication Scheme’. The least infected areas were the first to come under the Scheme, and those cattle failing tests were slaughtered, with compensation. This left heavily infected areas with high cattle density where it would have been extremely expensive to slaughter all infected cattle at once.

iv. 1976–79: vaccination of cows under the ‘45/20 Vaccination Scheme’. This was designed to control the spread of disease in the remaining infected areas, while allowing most infected animals to complete their working lives.

v. 1979 onwards: national compulsory eradication took place. The provision of EU funds allowed a full slaughter and compensation scheme to be implemented.203

9.12 All herds in the UK were designated ‘Officially Brucellosis Free’ in October 1985.204 Today all breeding animals over the age of 12 months are monitored by the relevant Agriculture Departments via blood-testing or monthly testing of bulk milk samples by the milk ring test. The blood test was once a year up until 1 October 1989, after which date the interval increased to two years. The local Divisional Veterinary Manager will investigate any herd that fails a milk ring test. All abortions and premature calvings must be reported to the local Divisional Veterinary Manager and the animal isolated pending results of further testing.205

9.13 As at 1996, the maximum compensation payable by the Government for an animal slaughtered due to brucellosis was 75 per cent of market value, subject to an upper limit, according to average market returns. Full compensation was payable for any animal slaughtered because it had been exposed to brucella infection, but had not developed the disease.206

Bovine tuberculosis

9.14 Tuberculosis was first recognised in cattle in 1840 and was a major problem during the 19th century. Bovine tuberculosis has been extremely difficult to eradicate. Not only can it prove difficult to identify, but other species act as
reservoirs for infection, and cattle might not react to the diagnostic test but still infect others.

9.15 Voluntary control schemes were introduced in 1935, but it was not until the early 1950s that a national eradication campaign was introduced.\textsuperscript{207}

9.16 Extensive testing for tuberculosis now takes place. In 1986, a total of 38,000 herds comprising 3,200,000 cattle were tested, resulting in the slaughter of 506 cattle that reacted to the test. In 1996, 33,016 herds were tested containing 2,412,993 cattle, resulting in the slaughter of 3,253 animals that reacted to the test. The majority of herds are tested every three years except in higher incidence areas such as the South West of England, where testing takes place on a one- or two-year basis. A slaughter and compensation scheme on the same basis as that for brucellosis is operated.\textsuperscript{208}