



DIFFERENTIAL DIAGNOSIS OF BSE

ISSUE

1. To inform the committee of Defra's approach to differential diagnosis of BSE.

BACKGROUND

2. At SEAC 84, the committee was updated about surveillance of BSE in the UK and elsewhere in the world (see Annex 1). It was noted that there had been a decline in the number of BSE cases identified on the basis of clinical signs that were subsequently confirmed when BSE diagnostic tests were applied. As the cause of disease in the unconfirmed cases is unclear, the committee asked whether procedures are in place to allow the detection of an altered form of BSE or another unknown disease. SEAC considered that research on methods to allow differential diagnosis of clinical cases of BSE was important, particularly in view of evidence on the phenotypic differences in infection in humans and sheep.
3. At SEAC 85, SEAC reiterated its view that research on methods to allow differential diagnosis of clinical cases of BSE was important (see Annex 2).
4. Defra agreed that a paper in response to the committee's recommendation on the differential diagnosis of BSE would be presented to SEAC. The Defra paper is at Annex 3.

ADVICE SOUGHT FROM THE COMMITTEE

5. The committee may wish to comment on the Defra paper.

Extract from the SEAC 84 minutes

ITEM 2 – BSE UPDATE

6. Mr Peter Soul (Defra) presented an update on BSE in cattle in the UK and worldwide. The committee was presented with figures showing the annual numbers of BSE infected cattle in Great Britain (GB) since 1988 and the reductions in the number of cases after control measures¹ had been introduced. In GB, the BSE epidemic peaked in 1992, when over 36,500 cases were confirmed, but thereafter the number of cases had declined very considerably. In GB, a total number around 183,000 BSE cases had been recorded to date.
7. Mr Soul explained that an active surveillance programme had been in place since July 2001 following an EU legal requirement. Figures from the programme showed a substantial decline in the number of BSE cases in fallen stock and casualty animals over 24 months old, both regarded as risk groups, as well as in apparently healthy animals over 30 months old born both before and after the reinforced ban. The combined BSE cases identified by passive and active surveillance from January 1999 to August 2004 also show a sharp decline, indicating that UK control measures are having a major effect on the number of cases of the disease. Estimates of the future number of BSE cases from 2004 to 2010 predict a further annual decline from 285 cases in 2004 to around one in 2010. BSE cases have been reported in many other EU countries and in some other countries outside the EU.
8. Mr Soul explained that in the UK, and other EU countries, a number of BSE cases born post August 1996 (BARB cases²) had been reported. To date, a total of 97 BARB cases had been identified in the UK, 84 in GB and 13 in Northern Ireland. Research was underway to investigate the origin of the BARBs, which remains uncertain.
9. A member noted that confidence in the figures from the active surveillance programme depends on the number of animals tested and asked how many animals were tested. Mr Soul replied that a random selection of 10,000 animals/year born before the

¹ Feed ban in July 1988; Specified Bovine Offal (SBO) ban in 1990; Staining of Specified Risk Material (SRM) in April 1995; Improved SRM controls in 1995; Reinforced feed ban in March 1996 and Fully Effective feed ban in August 1996.

² Any animal born after 1 August 1996 is referred to as a BARB case (Born After the Reinforced Ban)

reinforced ban, all animals over 42 months born after the reinforced ban, and all casualty animals going into the OTM scheme were tested in the programme.

10. A member noted that a reduction in the number of confirmed clinical cases of BSE had been observed and asked whether differential diagnostic procedures were in place to allow the detection of an altered form of BSE or another unknown disease. Mr Soul acknowledged that there were cases of animals with clinical signs consistent with BSE that were not confirmed as BSE cases using the diagnostic tests applied. Although research proposals had been received to examine such cases further they had not been accepted because of the limited funds available. Members considered that research on methods to allow differential diagnosis of clinical cases of BSE was important particularly in view of evidence on the phenotypic differences in infection in humans and sheep.
11. One member asked what part of the brain was tested on post-mortem. Mr Soul responded that for the routine testing, the obex was tested but lesion profiles across a large number of different brain sections had been examined in animals early on in the BSE epidemic and in early BARB cases.

Extract from the SEAC 85 minutes

8. At the meeting on 28th September 2004, members noted that a there had been a number of cases of animals with clinical signs consistent with BSE that were not confirmed as BSE using diagnostic tests. In view of these cases and the phenotypic differences of TSE infection in sheep and humans, members had suggested that research on methods to allow differential diagnosis of clinical cases of BSE was important. One member asked whether any progress had been made relating to this issue. The Chair agreed to pursue the matter with Defra.

**RESPONSE TO SEAC RECOMMENDATIONS ON THE
DIFFERENTIAL DIAGNOSIS OF BSE IN CATTLE**

Including

- **Annex A- Saegerman *et al.* (2003) Differential diagnosis of neurologically expressed disorders in Western European cattle. *Rev. Sci. Tech. Off. Int. Epiz.* 22, 83-102.**
- **Annex B- EU documents on approved BSE tests**
- **Annex C- Table of passive surveillance data**