

ENCLOSURE IN PROFESSOR SMITH'S LETTER OF 26/7/96 TO MR EDDY

Addition to minute 7 of 19 March meeting

Insert A

Assuming that the prevalence of infectious tissue in cattle of different ages was directly proportional to the incidence of BSE cases at different ages, the relative risk of cattle above and below 30 months would be approximately $5 \times 10^3 / 10^5$ (these being the approximate BSE incidence rates at these ages) = 500.

Further (speculative) computations were considered to assess the possible number of infectious doses that might be reaching the human population from cattle of different ages. These were based on the following considerations.

- * 1gm of CNS from cattle with BSE had been estimated to contain 10^8 infectious dose (ic LD50) when injected intracerebrally into bovine brain.
- * 1gm of spleen/lymphnode from cattle with BSE had not shown infectivity in the same system
- * Assuming muscle from cattle with BSE was no more infectious than spleen or lymphnode, it could be concluded that muscle was at least 10^6 times less infective than CNS.
- * Studies had shown the oral route to be 10^5 less efficient than the intracerebral route.
- * Therefore it could be concluded that the number of infectious doses (to a cow, given orally) in 1gm of muscle from cattle with BSE was 1gm of muscle from cattle with BSE was

$$\leq 10^6 \times 10^6 \times 10^{-5}$$

that is, $\leq 10^5/\text{gm}$

- * If the average human consumption of beef muscle was 20kgs/yr, then if all of this was from BSE affected cattle and assuming no species barrier the number of infectious doses would be $20 \times 10^3 \times 10^{-5} = 0.2 \text{ i.d./year}$

- * Thus, if 50 million people each ate 20kgs of beef a year the number of infectious doses consumed would be

$$0.2 \times 50 \times 10^6 \times (\text{proportion of cattle eaten that were affected by BSE})$$

- * Taking the proportions of young and old cattle affected by BSE to be 10^{-5} and 5×10^{-3} respectively, and assuming that these were also the proportions of cattle near the end of the incubation period that would get into the food chain, gives annual numbers of infectious doses consumed as 100 and 5×10^4 if exclusively young or old cattle were consumed respectively.

The computation took no account of the fact that meat and meat products tended to be derived from younger animals, nor of any species barrier.

- * The Committee recognised that these computations were highly speculative and were based upon many questionable assumptions. However, the comparison of the likely relative infectiousness of older and younger cattle had a firmer basis.

Deboning beef for human consumption from cattle over the age of 2½ years

8. The Committee agreed that deboning beef for human consumption from cattle aged over 2½ years of age was an option worth considering. Dr Kimberlin stressed that the nervous and lymphatic tissue trimmings would need to be treated as specified bovine offals. This view was supported by the rest of the Committee.

9. The Chairman suggested that discussion of the options for additional measures in relation to cattle should be continued at a further meeting to start at 8.00 am the following day at that time it would also be possible to decide the Committee's advice about the risk to human health from eating beef.

10. The meeting closed at 10.30 pm.

Secretariat

March 1996