



PAPER No: SEAC 76/4

SOURCES OF BSE INFECTION: HISTORICAL USES OF MECHANICALLY RECOVERED MEAT

Issue

1. Following requests from the SEAC Epidemiology sub-Group and the Board of the Food Standards Agency, the Agency commissioned a study from DNV Consulting to attempt to establish the main sources of potentially infected material in food during the period of BSE cattle epidemic, and before the main controls for human health were implemented (1980 – 1995).
2. The report, in draft form, was presented to the Epidemiology sub-Group on 27 September 2002, prior to publication on the 10th of October. Members have already received an electronic copy of this report. A hard copy of the report is attached at Annex 1.

Background

Method of approach and objectives

3. The study involved face to face interviews with identified representatives of organisations involved in meat production during the period of interest. The objectives of the study were to:
 - consider sources of potential infectivity in food for human consumption and ascertain the major sources;
 - ascertain the main organisations involved in the production of MRM during the period of interest, and interview key individuals in a selection of these organisations or their successors;
 - attempt to estimate the overall quantity of MRM produced based on the sources investigated over the period;

- ascertain the main products in which MRM was used. Attempt to assess inclusion rates and overall amounts produced based on the sources investigated;
 - attempt to estimate the overall quantities of other major sources of potential infectivity in food based on the sources investigated over the period; and
 - produce recommendations for further work to be undertaken to achieve the overall objective.
4. In this report DNV Consulting obtained information about practices and operations, which in some cases, go back 22 years. In total, 47 interviews were conducted with senior managers which covered all stages of the meat production chain including; abattoirs, meat cutting plants, MRM producers, meat brokers, producers of processed meat products (including baby foods), butchers, retailers and institutional users.
5. Despite good co-operation from all companies and individuals contacted, few hard copy records were obtained. The reasons for this include:
- 17/41 companies interviewed had changed ownership over the years since 1980.
 - A number of senior managers interviewed to cover the study period had since left the companies concerned and had no access to company records. Additionally, a number of the companies they worked for no longer existed.
 - Companies had changed premises or restructured and hence cleared out records from the early nineties as there is no legal requirement to retain them.
 - The approach taken to supply chain management in the mid 1980's was very different from the present day when manufactures audit their suppliers as routine due diligence.

Findings

6. The main findings of the report can be summarised as follows:

- From the sources of potential infectivity in food for human consumption (MRM, brains, head meat, dorsal root ganglia) it was ascertained that the major sources entering the food chain during the period covered by the report were MRM and head meat.
- The main products produced containing MRM were the economy brands of beefburgers, frozen and dried mince, and pre-processed beef used in meat pies. Products with lower levels of MRM inclusion were sausages (pork and beef), pates, and meat pastes.
- Confirmation of the estimates provided in the Leatherhead Food Research Establishment's 1997 report that an estimated 5,000 tonnes of MRM was produced per annum during the period concerned. The 5,000 tonnes is estimated to have been split 2,000 tonnes into burgers, 2,000 tonnes into frozen mince and 1,000 tonnes across the minor uses, including pet food and export.
- From the early 1980s, more beef was exported, which would have reduced the proportion of MRM produced from older animals to about 10% (data on UK slaughterings indicate that the split between clean cattle and cull cows was in the region of 80:20).
- It seems likely that vertebral columns represented a major proportion of the bones used in MRM production.
- The only other significant source of infectivity in food identified by the interviewees in the study was the use of head meat, which was commonly used in mince and in a wide range of burgers.

Current position

7. MRM produced from bovine vertebral column has not been used in food since 1995 and the prohibition on the use of MRM from vertebral column was extended in 1998 to cover all ruminants. The ban on MRM production was extended to all bones of ruminant animals from August 2001. EU Regulations require that all member states must ensure that bones of cattle, sheep and goats are not used in the production of MRM. Headmeat is currently designated SRM in the UK and Portugal but not in other member states.

Further research

8. The Food Standards Agency is currently commissioning a review of historic butchery practices, to look at the wider picture on possible historic sources of BSE infectivity.
9. Members will wish to note that a draft of the report was seen by the Epidemiology sub-Group at their meeting on 27 September. At that meeting the Committee confirmed that historic information was potentially valuable in providing insights into the causes of vCJD. The group also concluded that there were still uncertainties surrounding the historic picture, particularly about the proportions of MRM used in various foodstuffs.

Advice sought from the Committee

10. Members are invited to:
 - comment on the findings of the report and their implications; and
 - note the plans by the Food Standards Agency to undertake an investigation into historic butchery practices, to look at the wider picture on possible historic sources of BSE infectivity.