

The wider distribution of infectivity of BSE in sheep also suggests that effective precautions to protect the public might be more difficult to make than in cattle, and that existing measures might be inadequate if BSE were to occur in sheep.

Slaughter

UK measures, based on SEAC recommendations, include the compulsory slaughter of sheep and goats with scrapie with compensation for farmers, and a ban on clinically affected animals — and the heads, spinal cords and spleens of all animals — entering the human or animal food chains. Similar measures have been adopted in France, but not throughout the European Union.

But SEAC acknowledges that, if BSE behaves like scrapie, it “would also be present in the lymph nodes, spleen and parts of the intestine in medium titres in animals in the preclinical phase”. “If you wanted to minimize risk you would have in practice to condemn the entire carcass,” says Almond.

Almond justifies SEAC’s decision to stop short of such drastic recommendations. “To do nothing would be inappropriate,” he says, “while banning lamb would be ridiculous.” It would not be possible to justify killing the entire national flock when not a single case of BSE had been identified, he says. “We had to find a middle ground, which we call a ‘risk reduction strategy’ as opposed to a ‘risk minimization strategy.’”

If new research identified BSE in sheep, SEAC would consider stricter measures, according to one member of the committee, who defends what he describes as an “incremental approach” that adds new measures according to perceived need.

Lack of scientific data on the risks has placed SEAC in a position analogous to that of the scientists who advised the government at the beginning of the BSE crisis, admits one member. “We are back to square one,” and “in a very, very difficult position” in recommending appropriate courses of action.

Also in a difficult position is Britain’s new Labour government. In its handling of the risk of BSE in sheep, it is in danger of repeating the mistakes made by its Conservative predecessors in their management of the BSE beef crisis, warns the UK Consumers’ Association.

The association wrote to Tessa Jowell, the minister of state for public health, on 10 August complaining that the government was not keeping consumers properly informed about the BSE sheep issue, and excessively concentrating decision making in the hands of experts. The confidential letter contests SEAC’s recent public recommendation that no further controls — such as a ban on lamb offals — are needed at present.

Sheila McKechnie, the head of the association, argues that SEAC’s role should be limited to advising the Department of Health on

Urgent need for faster diagnostic test

Sheep BSE research is hampered by the lack of a highly specific diagnostic test suitable for field use.

Conventional strain typing, pioneered by Moira Bruce at the BBSRC’s Institute for Animal Health in Edinburgh, discriminates prion strains well, but involves inoculating legions of mice with sheep extracts, and analysing incubation times and lesion profiles in the brains of mice that succumb. Experiments take up to two years, and each costs £30,000.

John Collinge, head of the Prion Disease Group at Imperial College School of Medicine in London, and a member of SEAC, thinks he has a faster and cheaper method, but complains that the UK agriculture ministry has so far failed to commit itself to the refinement and scaling-up of the technique needed if large numbers of sheep are to be tested.

The technique distinguishes prion strains on the basis of Western blot patterns of conformation and glycosylation of prion proteins, and Collinge says pilot studies demonstrate its feasibility in screening for BSE in sheep.

But many scientists, including Stan Prusiner, who received the Nobel prize last year for his work on prions, remain sceptical about the theoretical basis of the method. Others question its validity in sheep where interpretation of patterns is complicated by the large variety of prion strains and host prion genotypes. The electrophoretic profiles of the many sheep prion genotypes needed to establish a baseline for comparison has also not yet been established.

Such uncertainties have divided SEAC members over the use of the technique. “It is not coming out clean in a way that makes it easy for us on SEAC to make decisions,” says one SEAC scientist.

These arguments miss the point, says Collinge, who argues that, even if the theoretical basis for his technique is not clear, it is an empirical marker that works. He admits the technique needs refinement: “But that’s MAFF’s job not mine.”

Opinion on SEAC now seems to be swinging in Collinge’s favour. Pattison says: “Glycotyping is likely to be one of the useful techniques in surveying the

strain characteristics of the agents recoverable from a large(ish) number of animals. I think we’ve reached the point where accumulation of further data is the way to inform ourselves about the usefulness of the technique rather than further theorizing.”

One compromise strategy that seems to be emerging from SEAC discussions is that, in the absence of a rapid specific test, a targeted search could use Collinge’s technique to screen several thousand scrapie cases and identify suspicious signatures which could then be double-checked using the traditional strain-typing technique.

Some of the resistance to Collinge’s technique seems, however, to be linked to fears that a preliminary diagnosis of BSE in sheep using this method may be interpreted by the public as firm evidence that BSE has passed to sheep. “The consequences of identifying a first case of BSE in sheep would be catastrophic so we need to be really sure [about the reliability of the identification],” says one member of the European Commission’s independent Scientific Steering Committee. **D.B.**

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Advice

SEAC also needs to explain more clearly to the public the rationale of its advice to government, argues Harriet Kimbell, a lecturer at the Guildford College of Law, and the first consumer representative on SEAC. “The public should be able to make the same informed judgements on their eating habits as I, as a member of SEAC, can.” Kimbell claims SEAC is reluctant to make this cultural change — “it is not the most open of bodies,” she says. Pattison was unable to be reached for comment on this.

The letter to Jowell also called on the health department to consider advising parents not to feed lamb to young children, “who may not have been exposed to previous risks

of BSE and not have eaten lamb so far”. The letter argued that until the risk was better quantified this might be justified on the basis of “the public health principle of both precaution and proportionality”.

The letter added that the association rejected concerns that “to issue any kind of statement would result in media hysteria and cause major damage to the industry,” arguing that this was the policy taken by the previous government. SEAC dismissed the association’s suggestion, and DOH has since said it does not intend to issue any further advice at this time.

The quality of the reasoning by some SEAC members is open to debate, however. One member criticizes the association’s proposal, arguing that: “If you start saying don’t feed lamb to children all hell will break loose.” Another says: “I did not understand why children would be at a higher risk than adults, there may be actual reasons to speculate on that, but those would hardly be sufficient to justify such selective precautions.” □