Cost benefit analysis of the development and use of ante-mortem tests for TSEs

Maes o ddiddordeb ymchwil: Foodborne pathogens
Hyd yr astudiaeth: 2009-06-01
Cwblhau arfaethedig: 2 Chwefror 2018
Cod prosiect: M03067
Cynhaliwyd gan: Det Norske Veritas

Research Approach

The analysis was based on a set of agreed scenarios reflecting the expected sensitivity and specificity of the tests and how they would be implemented. It utilised a risk model to assess the impact of ante-mortem tests in terms of the potential exposure of the public to TSE infectivity, based on the DNV SRM controls model. Information was gathered from meetings with policymakers, test developers and those likely to be involved in the implementation of a test programme. An expert workshop was held to elicit data for the analysis where hard data was not available and to agree the test scenarios. The output from the study is an independent assessment from a team with in depth knowledge of TSE issues.

Results

- The review of the state of the science has not identified any ante-mortem test for BSE that is currently ready for use or for approval. Taking into account the likely timescale for approval and modification of policy to enable the introduction of live animal tests, and the attitude of commercial companies to the challenges and risks involved, there appears to be little scope for their introduction in the foreseeable future.
- This study has demonstrated that although desirable, it is not necessary to have a live animal test that works at all stages of incubation. It has been shown that improving sensitivity from 3 to 12 months before clinical onset has a real impact, and potential benefits. This could help to define the minimum specification for a live animal test, i.e. 100% specificity and 95% sensitivity within 12 months of clinical onset, at least for the protection of the food chain.
- The cost of applying an ante-mortem test to over 48 month old cattle on farm prior to being sent for slaughter is estimated to be only slightly greater than that for the present post-mortem test; £6.9 million per year as opposed to £6.2 million. The higher costs of sampling on farm with the need for cattle handling and for a veterinarian to take the sample is partly offset by a reduction in MHS supervision costs.
- The higher cost for ante-mortem testing is balanced by the additional reduction in TSE exposure, so that the cost effectiveness of the ante-mortem test applied to over 48 month animals is estimated to be 2.1 bovine oral ID50 units per £million spent as opposed to 0.9 for the post-mortem test. However, the significance of this increase in cost effectiveness needs to take into account the fact that the TSE exposure to the UK population from beef consumption is already at a very low level.
- Applying an ante-mortem test to all cattle slaughtered increases the costs significantly with no additional benefit in terms of TSE exposure, resulting in a cost effectiveness value of 0.4.

Research report

England, Northern Ireland and Wales

PDF
Gweld Cost effectivess study of the use of ante-mortem TSE Tests final report as PDF(Open in a new window) (1.05 MB)