

*Category: Theme 5 Evaluation Animal Disease: Surveillance  
Oral*

Title: Testing Times in Scrapie Surveillance: Test Variation in Genotype-specific Detection Rates

SUE.C.Tongue, John.W.Wilesmith, Jo.Nash, Mohammad.Kossaibati, Judi.Ryan

VLA-Weybridge, Addlestone, UK

The introduction of large-scale targeted surveillance programmes for scrapie preceded the development of appropriate rapid screening tests; tests used in the bovine population were provisionally approved for use. In Great Britain, the first surveys (2002-2003) used the BioRad Platelia Elisa in series with immunohistochemistry (IHC) and the Prionics Check Western Blot (Prionics-WB) in parallel with IHC. Prion protein genotype (PrP) was determined for all suitable samples. Subsequent surveys used the later version of the BioRad Elisa (the TeSeE) in series with IHC, whilst PrP-genotype was determined for positive samples only. Overall prevalence estimates were similar in the initial surveys, however the two screening tests had different distributions when stratified by genotype. The genotype-specific frequency of positives for each screening test was estimated by indirect standardisation, for the complete survey dataset (2002-2004 inclusive). Attention has focussed on the 'atypical' cases detected by the BioRad tests, but not the Prionics-WB. These occur in genotypes at low risk of developing clinical disease. It appears however, that the reverse also occurred: cases in genotypes containing the VRQ allele may have gone undetected by the BioRad tests. The magnitude of this effect was in the order of 20% and has several implications: (i) the consequent underestimate (by up to 50%) of the overall prevalence of prion disease derived from any survey using only one of these screening tests; (ii) the reduction in 'classical-scrapie case finding' for eradication purposes and (iii) the effect on the comparability of results from surveys using different screening methods.