

Surveillance Of A Rare Event: Approach To The Current Situation Of BSE Surveillance In Switzerland

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In most countries which have experienced an epidemic of Bovine Spongiform Encephalopathy (BSE), the number of cases in bovines is declining. In Switzerland, the epidemic started in 1990 and has resulted in 458 cases identified in domestic cattle. The number of cases dropped from 21 in the year 2003 to 3 in 2004 and 3 until September for the year 2005. Only 3 cases were born in the cohort of year 1999 and 1 case in 2000. Therefore, it is necessary to develop surveillance plans capable of estimating the incidence of BSE in birth cohorts that were only minimally exposed.

We propose an assessment method taking into account both the change in age distribution and incidence in birth cohorts. We developed a Bayesian simulation model to assess the reliability of a surveillance system focusing on certain age categories. The basic assumptions are (A) that testing bovines up to a certain age contributes more to the knowledge about the BSE status of a birth cohort of bovines whereas testing of older animals contributes less and (B) that a certain proportion of BSE cases, if there had been any, would have been detected in bovines originating from a birth cohort tested up to a given date.

The method is cost-effective in assessing the exposure of birth cohorts born after the introduction of measures reducing the exposure to BSE to a minimal level and is an extension to approaches in BSE surveillance which focus more on surveillance in countries without reported cases.