

Evaluation Of Surveillance For Enzoitic Bovine Leucosis In The Australian Dairy Industry

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Australia's dairy herd is approaching freedom from enzootic bovine leucosis (EBL). There is a need to evaluate Australia's surveillance for EBL in dairy herds to determine if the ability of this system to detect infected herds (surveillance system sensitivity) meets or exceeds the OIE (World Organisation for Animal Health) requirements of 99% confidence in detection of EBL if it is present in 0.2% of herds. Surveillance for EBL in the Australian dairy industry has multiple components (surveillance system components or SSCs). We restricted our analysis to the bulk milk testing program because it 1) covers all dairy herds in Australia; 2) is carried out repeatedly; and 3) reputedly has a good sensitivity for detection of EBL in individual dairy herds. We used a stochastic scenario tree model incorporating factors affecting the probability that a herd is infected, and that an infected herd is detected by the surveillance process. Factors included were state, herd infection status, herd size, use of milk 'pooling', diagnostic test, and test outcome. We evaluated eight scenarios, combining two different diagnostic tests, and four milk 'pooling' strategies. For all scenarios, the sensitivity of the surveillance system is effectively 100% for detection of at least one infected herd, when as few as 0.2% of total herds are infected. This exceeds the OIE requirement of 99% confidence (sensitivity).