



Targeted sero-surveillance for infectious zoonoses in cattle

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Abstract text

Background: Infectious zoonoses from domestic livestock can present a significant public health risk for livestock sector workers including primary producers, stockmen, animal health workers and abattoir workers. A total of 436 sera were collected from beef cattle from 4 farms on the island of Efate and tested for serological evidence of two zoonoses, brucellosis (*Brucella* spp.) and Q-fever (*Coxiella burnetii*). Vanuatu has been historically free of bovine brucellosis since 1994; historical serological data for Q-fever in livestock in Vanuatu are not immediately available to the authors.

Methods: Blood samples were collected in 10ml red-top (no anticoagulant) vacutainer tubes from clinically healthy adult cattle. Serum was extracted from clotted blood samples, placed into 2ml cryovac tubes and frozen at -20C. Frozen sera were packaged as per International Air Transport Association requirements and despatched to Wallaceville Animal Health Laboratory, New Zealand. Q-fever antibody testing was conducted using IDEXX Q-fever Ab enzyme linked immunosorbent assay (ELISA) kits; brucellosis testing was conducted using SVANOVIR *Brucella abortus* competitive ELISA Ab kits.

Results: All 436 sera tested for brucellosis gave negative results. For Q-fever, 23 samples (5.3%) were sero-positive, with a further 29 samples (6.7%) classified as borderline (suspicious).

Discussion: Active eradication of bovine brucellosis and bovine tuberculosis was conducted in the 1980s in Vanuatu, with subsequent freedom from both diseases being declared in 1994. The sero-surveillance results presented for brucellosis, while not comprehensive, are consistent with Vanuatu maintaining freedom from bovine brucellosis. Sero-positive results for Q-fever indicate that Q-fever is present at a low prevalence in cattle herds in Vanuatu. Further sero-surveillance is required in susceptible livestock species (cattle, sheep, goats) to determine the distribution and prevalence of Q-fever in livestock in Vanuatu. Obtaining further serological data for Q-fever will be important to assess the potential public health risk presented by this zoonosis.