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FACTORS ASSOCIATED WITH BOVINE LEUKAEMIA VIRUS INFECTION IN SEASONALLY CALVED DAIRY HERDS IN NEW ZEALAND.

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The first year of a national dairy industry control programme for Bovine Leukaemia Virus (BLV) in New Zealand was an investigative period to establish the most appropriate sample collection, diagnostic procedures and control methods. Regional BLV herd prevalence and risk factors for the transmission of BLV between herds were identified. Approximately 6.5 percent of herds were infected with BLV, but there were significant regional differences The impact of routine management practices on herd BLV status was investigated in a survey of positive and negative herds. The EBL infected herds had a statistically significantly greater mean herd size (309 cows) compared with control herds (208 cows). The New Zealand dairy industry is expanding and new herds are being established and herds sometimes change location. The number of years at the current location for BLV positive herds was 13 years and significantly less than for control herds (22years). There was no significant difference in health problems as viewed by the herd manager or precaution taken to avoid the introduction of disease generally. The BLV infected herds used veterinarians more frequently and treated cows with reproductive disease, and particularly anoestrus cows more frequently. The study did not identify any other differences in animal management or treatments used. There was a significantly lower proportion of BLV infected herds that had mainly jersey cows (6.4%) compared with negative herds (22.8%). This preliminary survey identifies some important differences between BLV positive and negative herds including breed and herd size. It is possible that large, recently established herds are more likely to be infected as they have purchased cows from a wide variety of sources. The failure to show significant differences in some areas of management must be viewed with caution as this study had limited statistical power.

Bovine leucosis virus (BLV) positive and negative herds were surveyed to identify factors associated with BLV infection in New Zealand dairy herds. A cross sectional study initially determined the prevalence of infected herds. Milk samples were collected from a centralized national herd testing facility where samples from greater than 90 percent of herds are routinely production tested. Herds were randomly selected and BLV tested using a commercially available enzyme linked immunosorbent assay (ELISA) kit to establish BLV herd prevalence. Milk samples from all cows in each herd were aggregated into single samples for 20 cow groups. These randomly selected herds were then re-sampled six months later and again tested for BLV. Herds were classified as infected with BLV if positive results were obtained at both screening tests. Similarly, herds that tested negative at both screening tested were used as control herds in this study. Herds with inconsistent or missing results were excluded. The positive case herds and the negative control herds were then included in a postal survey to identify differences in herd demographics and management practices. Herd owners or managers were mailed a survey form and this was followed with phone calls over a six week period for non-respondents.

RESULTS

There were 405 negative control herds and 31 case herds included in the final analysis. The low prevalence of BLV (6.5 %) infected herds limited the number of case herds and the power of this initial study. Risk factors were separated into conceptual groupings and analysed using logistic regression in SAS for windows. The EBL infected herds had a statistically significantly greater mean herd size (309 cows) compared with control herds (208 cows). The New Zealand dairy industry is expanding as new herds are being established and herds sometimes change location. The number of years at the current location for BLV positive herds was 13 years and significantly less than for control herds (22 years). There was no significant differences in health problems or precaution taken to avoid the introduction of disease generally. The BLV infected herds used veterinarians more frequently and treated cows with reproductive disease, and particularly anoestrus cows more frequently. The study did not identify any other differences in animal management or treatments used. There was a significantly lower proportion of BLV infected herds that had mainly jersey cows (6.4%) compared with negative herds (22.8%).

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