Evolution Of The Within-Herd Prevalence Status Of Bovine Leukosis Between 2017 And 2022 In Quebec Dairy Herds

K.G. Solano-Suarez[1,2], JP Roy[2,3], J.C. Arango-Sabogal[1,2], E. Molgat[4], J. Durocher[4], and S. Dufour[1,2].

[1]Université de Montréal, Faculté de médecine vétérinaire, Département de pathologie et microbiologie; Saint-Hyacinthe, QC, Canada.

[2]Research Chair in biosecurity of dairy production, Université de Montréal; Saint-Hyacinthe, QC, Canada.

[3]Université de Montréal, Faculté de médecine vétérinaire, Département de sciences cliniques; Saint-Hyacinthe, QC, Canada.

[4]Lactanet; Sainte-Anne-de-Bellevue, QC, Canada.

Our objective was to compare the change in the within-herd prevalence (**WHP**) status of the bovine leukosis virus (**BLV**) between 2017 and 2022 in Quebec dairy herds. Convenience sampling was done in 140 Quebec dairy herds for this descriptive longitudinal study, and bulk tank milk samples were collected on each farm in 2017 and in 2022. Samples were analyzed by Lactanet using ELISA tests. The WHP status for each year was categorized as low (**LO**: < 10%), medium (**ME**: 10-30%), or high (**HI**: > 30%) based on the ELISA result. The proportions and 95% confidence interval (CI) of herds changing their status between 2017 and 2022 were described and compared using the Chi-square test (χ^2). The proportion of LO herds slightly increased from 19% in 2017 (n=26) to 20% in 2022 (n=28), and of ME herds increased from 14% in 2017 (n=20) to 26% in 2022 (n=36). Conversely, the proportion of HI herds decreased from 67% in 2017 (n=94) to 54% in 2022 (n=76; $P < 0.001$, χ^2 test). An improvement in the farm's WHP was observed in n=27 herds (19%, CI: 13 - 27%); more specifically, 2% changed from HI to LO, 14% from HI to ME, and 4% from ME to LO. Conversely, n=10 herds (7%, CI: 3 -13%) had a small increase in their status, either from LO to ME (4%; n=6) or ME to HI (3%; n = 4). The proportion of herds with a decrease in the WHP status was significantly greater than the proportion experimenting an increment ($P < 0.001$; $\chi 2$ test), thus, indicating a general correction of the BLV WHP. Finally, in n=103 herds (74%) the BLV WHP status did not change. In conclusion, a moderate improvement in the BLV WHP status was observed in our sample of Quebec dairy herds between 2017 and 2022 (i.e., the BLV WHP status was moderately reduced in five ears). Limitations of this study include using different ELISA kits in 2017 vs. 2022. Future work includes assessing the relationship between the bulk tank milk ELISA result and the WHP to monitor more precisely the change of BLV.

Keywords*: prevalence, leukosis, ELISA, Canada.*