

Economics of on-farm Bovine Leukemia Virus control

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Bovine Leukemia Virus (BLV) is known for the development of fatal tumors, often referred to as Leukosis, in infected animals. While only some cattle develop tumors, all infected animals are affected by negative effects on the immune system resulting in reduced milk production and reduced longevity. With approximately 90% of Alberta dairy herds having at least one infected animal, this results in animal welfare issues, as well as economic losses to the dairy industry. To better understand the losses due to BLV infection, we need to identify the necessary investments for on-farm control programs, which allows us to calculate the economic benefits of BLV control. The four evaluated strategies were: 1) test and best management strategies, 2) test and easiest management strategies, 3) test and cull, and 4) test and segregate. The resulting decrease in within herd prevalence is different for all four strategies. The considered losses due to the infection were reduced milk production, reduced cow longevity, and losses related to tumor development. The analysis was conducted for an average dairy herd, with an initial 40% within-herd BLV prevalence, over a 10-year timespan. According to this analysis, the costs for BLV control per animal over 10 years were between CAD \$165.80 and \$725.10. The revenue was calculated by adding milk and slaughter revenue, reduced by costs to raise replacement heifers, as well as losses caused by the infection with BLV and varied from CAD \$71,281.70 to \$72,097 over 10 years, depending on the strategy. Additionally, the different control strategies were compared to not conducting any on-farm control. All considered strategies resulted in a positive net benefit, varying between CAD \$828.30 and \$1,487.00 per animal over a 10-year timespan. The results of this analysis should be considered as an encouragement for the implementation of any of the four on-farm control strategies, in order to reduce the BLV prevalence and related costs in Canada.