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Feeding kelp meal improved kidney function of mink challenged with the Aleutian Mink disease virus

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Aleutian mink disease virus (AMDV) is endemic in Nova Scotia (NS), Canada, and causes considerable economic losses to the industry. Failure of virus eradication from many farms in NS after more than 30 years of test-and-removal strategy forced many farmers in this province to select their herds for tolerance to AMDV. Mink herds which are under selection for tolerance show high mortality and reduced performance for several years, and any feed additive or pharmaceutical that can ease the negative effects of infection are of particular interest to mink farmers. The objective of this study was to investigate the effects of feeding the brown algae *Ascophyllum nodosum* (kelp meal) on serum parameters of mink infected with AMDV. A total of 75 AMDV-free female black mink were inoculated intranasally with a spleen homogenate containing a local strain of the virus. Mink were fed a commercial pellet with the kelp meal added at the rates of 0% (control), 0.75% and 1.5% of the feed. Animals were killed after 451 days of feeding kelp, and serum samples were collected. Serum total proteins, albumin, alkaline phosphatase (ALKP), urea nitrogen, creatine, globulins and gamma-glutamyl transferase (GGT) were measured using the Vet-Test Chemistry Analyzer (IDEXX International). Data deviated from normality and treatment effects were compared

by the non-parametric Kruskal-Wallis test. In cases where this test was significant at $\alpha < 0.05$, pairwise comparison of treatment means was performed by the Mann-Whitney U test and Bonferroni correction. Feeding kelp had a significant effect only on urea nitrogen and creatine, which were significantly higher in the control group than in the 1.5% kelp. Urea nitrogen and creatine were intermediate in mink that were fed 0.75% kelp and was not different from the other groups. The results suggested that feeding 1.5% kelp significantly improved the kidney function. Improved animal health through improved kidney function, independent of changes in serum proteins, is of considerable importance when selecting for tolerance.

Speaker Biography

A H Farid is an Adjunct Professor in the Department of Animal Science and Aquaculture at Dalhousie University Faculty of Agriculture. He received his PhD degree in Animal Breeding and Genetics from the University of Alberta in 1986. He joined Dalhousie University in 1990 and retired in 2017. His research has been focused on the application of molecular techniques to animal improvement, including genotyping of Canadian purebred sheep for resistance to scrapie, and genetic selection of mink for resistance to the Aleutian mink disease virus. He has written one book chapter, published 77 papers in refereed scientific journals and more than 250 abstracts, technical papers and presentations to the livestock industries.

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