Bovine Immunodeficiency Virus: A Lentivirus Associated with Encephalitis, Immune Deficiency and Secondary Infections

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Following several years of serological surveys for antibody to bovine immunodeficiency virus, an unusual number of cattle diseases and deaths were noted at the Louisiana State University & A&M College Dairy. Beginning in 1990, the number of animals being culled or dying with mastitis, pododermatitis or other disease conditions appeared to increase. In 1991, there was a greater increase related to the loss of a barn housing facility combined with an unusually severe winter. Throughout 1992 and into 1993, the deaths or losses due to culling for mastitis and pododermatitis returned to a level similar to the 1989-90 period.

When the cattle were examined and treated for mastitis, or footrot, or whatever condition was present, many developed extensive infections related to subcutaneous or intramuscular injections. In addition, there were seldom cattle that responded to the therapy and recovered. The majority of the clinical problems were related temporarily to the time of parturition or the early lactation period. Many cows had post-partum difficulties including obturator paralysis, coxofemoral luxation and metritis, which along with mastitis were most likely related to production stress, as the cattle were in a DHIA production herd. Problems with the feet were identified more as laminitis and not the classical pododermatitis, although once sole abscesses or separation of the lamina developed bacterial infection was common.

Serologic and molecular DNA analyses have shown that BIV is present in many cattle which had depletion of the immune system, encephalitis, and secondary diseases similar to other species infected with lentiviruses that cause chronic inflammatory or immunodeficiency diseases.