

## Tracking Field Infectious Bursal Disease Viruses by Time, Mutation and Response.

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Infectious bursal disease is an immunosuppressive disease caused by infectious bursal disease virus (IBDV). This double-stranded RNA virus has evolved over many decades to the multiple antigenic and pathogenic strains we struggle to control in commercial and backyard chicken flocks. Identifying the strain of IBDV causing disease in these flocks is an important step in their control. It is also important to know when these viruses are infecting the chicken flocks. Maternal antibodies in the chicks should delay IBDV infection until the birds are 3-4 weeks of age. Infections earlier than this in chicks with relatively high maternal antibody titers indicates mutations in the virus have created an antigenic structure that can evade the maternal immunity. It is possible to track the mutations in field viruses using RT-PCR followed by genetic sequence analysis. This data can be used to select the best vaccines and control strategy for each flock. Once a vaccine program is put into place, ELISA can be used to track the immune response to the vaccines and RT-PCR can be used to track the success of the new strategy by identifying if replication of the field virus is prevented.