MEASURING THE INFLAMMATORY CYTOKINE EFFECT OF BOVINE VIRAL DIARRHEA VIRUS ON PERSISTENTLY INFECTED CATTLE

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ABSTRACT

The purpose of this project was to observe inflammatory cytokine effects in cattle persistently infected with Bovine Viral Diarrhea Virus (BVDV). The working hypothesis was that persistently infected animals produce higher levels of immunosuppressive cytokines. The cytokines tested include interleukin-10 (IL-10), tumor necrosis factor alpha (TNF-α), interferon gamma (IFN-α), and interleukin four (IL-4). Cytokine levels in persistently infected (PI) animals were compared to age-matched healthy animals in vivo and in vitro. MDM and Sera were collected monthly for a three-month period, and cytokine levels were determined using Enzyme-Linked immunosorbent Assays (ELISA). The IL-4 levels in the sera of the PI herd were higher than the healthy animals throughout three-month period. The TNF-α levels decreased as the disease progressed in the animals. The IL-10 stayed high through the three months compared to the healthy animals. This indicates that these animals are under the influence of anti-inflammatory cytokines.