

# Evaluation of Acute Interstitial Pneumonia at an Eastern Colorado Feedlot

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Acute interstitial pneumonia (AIP) is a serious cause of mortality in feedlot cattle with losses occurring late in the feeding period after significant investments have been made. The pathogenesis of feedlot AIP is poorly understood. Pneumotoxins, infectious diseases, such as BRSV and bacterial pneumonia, gases from rumen eructation and environmental factors including dust and increased ambient temperature have been proposed as etiologic factors. This study was designed to test the hypothesis that BRSV infection of cattle harboring bacterial infections of the lung or liver leads to AIP through pro-inflammatory cytokine associated mechanisms. Lung and liver tissue from cattle presenting with clinical signs of AIP and from normal pen mates were collected at three feedlots, one in Colorado and two in Kansas. Acute interstitial pneumonia cases were confirmed by histopathologic examination. Lung and liver samples were cultured for bacteria and lung was tested for BRSV by immunohistochemistry. Frozen lung and liver samples were archived for future analysis of IL-1 and TNF-mRNA. Preliminary results from the first two years of a three year study are reported for just the Colorado feedlot. Samples were collected from 48 animals of which 32 had AIP lesions. Fifteen of the 32 met the criteria for inclusion of this study. Seven of 15 had positive lung cultures, including 5 with *Pasteurella* spp. isolates, 2 with *Mycoplasma* spp. and 3 with both. BRSV was not demonstrated in any animal and no pathogens were identified in lung tissues of control cattle. Potentially pathogenic bacteria were isolated from 2 of 15 livers from AIP cases. Liver cultures from control animals were negative. The results of this research may help elucidate the role of infectious disease in the pathogenesis of feedlot AIP.