RESEARCH REPORT
SWINE HEALTH

Title: Evaluation of live vaccine strains of *Actinobacillus pleuropneumoniae* - **NPB #:04-058**

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II. Abstract:

Actinobacillus pleuropneumoniae(Apl) is the causative agent of porcine pleuropneumonia, a highly contagious, and frequently fatal respiratory tract disease in swine. Current vaccines do not adequately protect against disease. We have characterized 4 mutant strains of *A. pleuropneumoniae* which could be developed into a live attenuated vaccine for prevention of porcine pleuropneumoniae. The mutant strains, in addition to not producing the ApxII hemolysin, contained mutations in the *napA*, *hlyX*, *fur*, or *tatA* genes. These vaccine strains were administered by an intranasal route of administration. Vaccination with any of the mutants reduced clinical symptoms, hemorrhage and fibrinous exudates in or on the lungs, and reduced the numbers of wild-type *A. pleuropneumoniae* recovered from the lungs at necropsy. We were unable to prevent colonization with the wild type serotype 1 strain 4074mm-AP. These results indicate that administration of these live attenuated strains by an intranasal route of administration elicits protective immunity. Further modifications are planned to enhance the efficacy of these attenuated live vaccines.