

SWINE HEALTH

Title: The influence of maternal antibody against porcine reproductive and respiratory syndrome virus (PRRSV) infection and the effect of a killed PRRSV vaccine in increasing the level of maternal antibody – **NPB# 03-046**

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Abstract: Killed porcine reproductive and respiratory syndrome virus (PRRSV) vaccine (KV) was administered to sows pre-farrowing to determine if this protocol would increase the magnitude and duration of maternally derived antibody (MDA) and protective immunity of piglets. Sows from a PRRSV positive herd with no history of KV use were vaccinated at 60 and 75 days of gestation. Serological responses were observed in sows and their offspring. Piglets were experimentally challenged with a virulent strain of PRRSV at 10, 16 and 24 days of age to assess protection. Significant increases in ELISA S/P ratios and serum neutralizing (SN) antibodies were observed in vaccinated sows at farrowing and weaning and in their offspring. Vaccinated sows had significantly higher SN antibodies in colostrum than non-vaccinated sows. Pigs farrowed from vaccinated sows and challenged at 10 days of age displayed the mildest clinical disease and had lower levels of viral RNA than pigs from non-vaccinated sows. No significant reduction in clinical symptoms or PRRSV associated pneumonia was detected at any time point measured. The results of this study suggest that the administration of KV in PRRSV-exposed sows pre-farrowing significantly increases SN antibodies in serum and colostrum resulting in enhanced MDA in piglets. Although complete protection was not observed, pigs with higher MDA had lower levels of viral RNA in their serum when challenged at 10 days of age.

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