

ENVIRONMENT

Title: Comparison of PCV2 vaccine efficacy in 5 and 21 day old piglets – NPB #09-173

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Scientific Abstract

Porcine circovirus type 2 (PCV2) vaccines have become widely used since approved in 2006. It is not uncommon for producers to use PCV2 vaccines in pigs younger than what is approved or recommended by manufacturers. The objective of this study was to determine the efficacy of a chimeric and a subunit PCV2 vaccine administered at 5 or 21 (d5 or d21) days of age. In order to mimic the field situation, the pigs were concurrently challenged at 4-6 weeks following vaccination with PCV2, porcine parvovirus (PPV), and porcine reproductive and respiratory syndrome virus (PRRSV). Forty-eight PCV2 naïve piglets were randomly divided into six groups of eight pigs each. Vaccination was done at d5 or d21 followed by triple challenge at d49. Vaccinated pigs seroconverted to PCV2 approximately 14 days post vaccination. The d5 vaccinated pigs had higher anti-PCV2 antibody levels until d35. At d49, the pigs vaccinated with chimeric vaccine had significantly higher levels of neutralizing antibodies compared with the pigs vaccinated with the subunit vaccine. After challenge the vaccinated pigs, regardless of vaccine type or timing, had significantly decreased levels of PCV2 viremia and significantly decreased prevalence and severity of microscopic lesions compared with pigs in the unvaccinated positive control group. Severe microscopic lesions in lymphoid tissues associated with abundant PCV2 antigen compatible with PCVAD were only present in positive control pigs. The results of this study indicate that under the conditions of this study, off-label vaccination of PCV2 naïve pigs at d5 resulted in earlier development of anti-PCV2 antibodies and provided significant reduction or complete protection against PCV2 viremia and PCV2-associated lesions after triple challenge with PCV2, PPV and PRRSV.

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