

# Controlling PCV2 and co-infections to reduce the impact of PCVAD in growing pigs

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## Introduction and Objectives

An essential component of porcine circovirus associated disease (PCVAD) is Porcine Circovirus Type 2 (PCV2) infection. Two key PCVAD co-infections are PRRS virus and *Salmonella*. Etiologic diagnosis of PCVAD in the study farm included PCV2, PRRS, SIV and *Salmonella*. This paper describes the use of multiple vaccines to control the infectious components of PCVAD.

## Materials and Methods

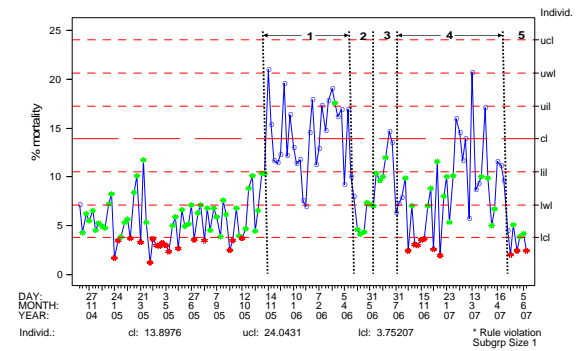
A three-site production system with finishing mortality rates averaging 5.2% (range=1.6-11.7%) observed average mortality rates increase to 13.9% (range=7-21%) after PCVAD was diagnosed. A piglet vaccination program targeted to control the PRRS and *Salmonella* co-infections began in spring 2006. Onset of PRRS exposure had been occurring in late nursery. To allow for adequate onset of immunity, piglets were vaccinated at weaning (~21 days of age) with a modified live PRRS vaccine (Ingelvac<sup>®</sup> PRRS MLV, Boehringer Ingelheim Vetmedica, St. Joseph, MO), and an avirulent live *Salmonella* vaccine (Enterisol<sup>®</sup> SC-54, BIVI). Piglet PCV2 vaccination (Ingelvac<sup>®</sup> CircoFLEX<sup>™</sup>, BIVI) was implemented at 6 weeks of age upon vaccine availability. Statistical process control methods were used to assess the impact on finishing mortality.

## Results

Average percent finishing mortality decreased significantly following implementation of PRRS and *Salmonella* vaccination. Mortality decreased from 13.9% during the four month PCVAD baseline period (Figure 1, period 1, range=7-21%) to 5.9% during the initial period of piglet vaccination (period 2, range=4.1-7.9%). When weanling piglets were confirmed to be viremic with wild-type PRRS field virus, PRRS vaccination was stopped for a brief period while the nursery was depopulated and average % finishing mortality increased to 11% (period 3, range=7.0-14.6%). Average percent finishing mortality decreased to 8.6% when the nursery

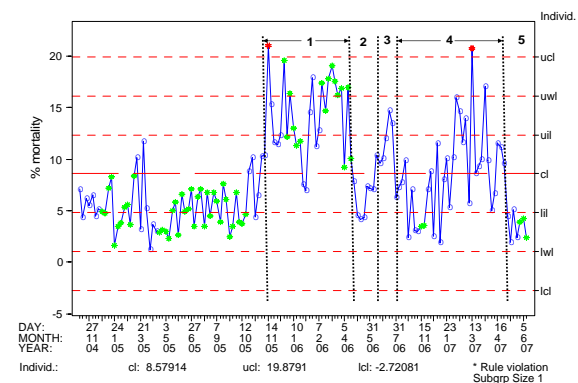
was repopulated and properly timed PRRS vaccination was resumed (period 4, range=2.4-20.7%; mortality spikes in the latter half of period 4 due to swine influenza). When PCV2 piglet vaccination began, average % finishing mortality decreased significantly further to 3.5% (period 5, range=2-5%; Figure 2).

**Figure 1.** Percent finishing mortality - Period 1 used for control limit calculation to demonstrate signals in subsequent periods.



1.PCVAD diagnosed. 2.PRRS & *Salmonella* vaccination initiated. 3.PRRS confirmed at sow farm, PRRS vaccination stopped. 4.First pigs post-nursery depopulation and re-implementation of PRRS vaccination. 5.PCV2 vaccination initiated.

**Figure 2.** Percent finishing mortality – Period 4 used for control limit calculation to demonstrate signals in the subsequent period.



## Conclusions

Controlling PRRS and *Salmonella* co-infections with vaccination significantly reduced mortality in the absence of PCV2 vaccination. Controlling PCV2 infection directly with PCV2 vaccination decreased mortality significantly further to levels at or below the pre-PCVAD period.