

Efficacy of Ingelvac® CircoFLEX™ in pigs vaccinated at 3 or 6 weeks of age in a PRRS and *Mycoplasma hyopneumoniae*-negative production system

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Introduction

The purpose of the study was to assess PCV2 vaccine efficacy (Ingelvac® CircoFLEX™, Boehringer Ingelheim Vetmedica, Inc.) in pigs vaccinated at 3 or 6 weeks of age compared to nonvaccinates in a pork production system which was negative for PRRS and *Mycoplasma hyopneumoniae*.

Materials and Methods

A multiple site, 1250 sow system which was negative for PRRS and *Mycoplasma hyopneumoniae* was used in this study. Two weeks of pig production (n=1106 pigs) were weaned and placed into nursery pens. Prior to placement each pen was randomly assigned to one of three treatment groups. Individual pigs were the experimental unit and were ear tagged and weighed at weaning. Pigs that were designated as vaccinates were vaccinated IM at either 3 or 6 weeks of age with 1mL of the single-dose vaccine. Nonvaccinates received no vaccination. Three randomly selected pigs in each pen were designated as serum collection animals. These 144 pigs (72 per treatment group) were serially bled at 3, 6, 10, 14, 18 and 22 weeks of age. Samples were assayed by PRRS ELISA, PRRS PCR, *M. hyo* ELISA, *Lawsonia* ELISA, and PCV2 quantitative PCR. All pigs were weighed individually at 3, 10, and 22 weeks of age. Each finisher pig that died or was euthanized for humane reasons during the study was necropsied and a comprehensive set of tissues were submitted to the Iowa State University Veterinary Diagnostic Laboratory for

Table 1. Summary of nursery and finishing mortality rates and finishing cull rates by treatment group.

Item	3wkvacc	6wkvacc	Nonvacc	P-value
Number of pigs placed in nursery	374	364	368	-
Nursery mortality rate, %	2.41	2.47	1.90	0.84
Number of pigs placed in finishing	365	355	361	-
Finishing mortality rate, %	1.92	2.25	7.76	<0.0001
Finishing cull rate, %	1.68	0.86	6.31	<0.0001

diagnostic testing. Mortality and cull rates were assessed using the Chi-square test (JMP).

Results

No adverse reactions attributable to vaccination were observed. As was the case historically in this system, nonvaccinated control pigs began to show clinical signs of PCVAD in finishing beginning at 11 weeks of age. Gross lesions included enlarged lymph nodes, (particularly the mesenteric), lungs that often failed to collapse normally and in some cases had significant interlobular edema, kidneys that were enlarged and/or had multiple white foci, enteritis suggestive of ileitis, and edema of the colonic mesentery. Nursery mortality rate was not different comparing pigs vaccinated at 3 or 6 weeks to the nonvaccinates (p=0.84). Finishing mortality and cull rates for both the 3 and 6 week vaccinates were significantly reduced compared to nonvaccinated pigs (p<0.0001, table 1). Finishing cull rate was based on pigs that weighed less than 180 pounds at closeout. Pigs vaccinated with Ingelvac® CircoFLEX had fewer pigs diagnosed with PCVAD during the finishing phase.

Conclusions

Ingelvac CircoFLEX was safe and effective in pigs vaccinated at 3 or 6 weeks of age. Both vaccinated groups had significant reductions in finishing mortality, cull, and PCVAD diagnosis rates.