Results obtained with a novel PCV2 vaccine to protect multiple ages of pigs against PCVAD

R. Desrosiers[1], E. Clark[2], D. Tremblay[3], R. Tremblay[1], and D. Polson[4]

[1]Boehringer Ingelheim Canada, Burlington, Ontario, [2]CARE Centre, Calgary, Alberta, [3]Vetcoporc Consultants, St-Lambert-de-Lauzon, Quebec, [4]Boehringer Ingelheim Vetmedica, Inc., Ames, Iowa

Introduction

This paper describes results obtained with a new PCV2 vaccine, Ingelvac® CircoFLEX™ (Boehringer Ingelheim Vetmedica, Inc.), in Canadian pigs vaccinated at different ages.

Material and Methods

The herd chosen for this blinded study consisted of a multiple site 1300-sow system that had consistently suffered PCVAD losses for about 18 months. These losses occurred exclusively in finishing units, and usually started about 3-4 weeks post placement. The pigs received either 1 mL of placebo (sterile water for injection, group A) or 1 mL of the Ingelvac CircoFLEX vaccine (group B). The injections were all administered in the nursery on the same day, when pigs were between 19 and 59 days of age. The first finishing barn was filled with pigs that had been injected between 45 and 59 days of age (Barn 1). The other three barns were filled with pigs that had been injected at 38 to 45 (Barn 2), 22 to 36 (Barn 3) and 19 to 22 (Barn 4) days of age respectively. In all four barns, pens of group A pigs alternated with pens of group B pigs so that potential exposure would be similar.

Results

Approximately 3850 pigs were part of the study, of which approximately 50% received placebo and 50% the test vaccine. No local or systemic reactions of any kind were noted immediately following injection, or in the days and weeks that followed. As was the case historically in this system, pigs began to show clinical signs of PCVAD about three to four weeks post placement in finishing (80 to 90 days of age), in all four finishing units of the study. Gross and histologic lesions as well as immunohistochemistry results were all compatible with a diagnosis of PCVAD. Vaccinated pigs, regardless of age of vaccination, had a significant reduction in mortality compared to unvaccinated pigs in all 4 finishing barns (Table 1).

Conclusions

Excellent efficacy was achieved whether pigs were vaccinated as young as 19-22 days, or as old as 45-59 days of age. These results suggest that pigs could be effectively vaccinated at an early age. The data also suggest that immunity was relatively quick to develop, since pigs vaccinated only about four weeks before clinical signs were initially observed were protected.

Table 1: Finishing mortality rates

	Treatment	Number of pigs placed	Age (days) at vaccination	Mortality[a] (%)	P value[b]
Barn 1	Sterile water	647	45-59	9.6	**< 0.001**
	Vaccine	633	45-59	3.0	
Barn 2	Sterile water	260	38-45	8.1	**= 0.002**
	Vaccine	286	38-45	2.1	
Barn 3	Sterile water	745	22-36	10.6	**< 0.001**
	Vaccine	717	22-36	2.8	
Barn 4	Sterile water	275	19-22	7.6	**< 0.001**
	Vaccine	274	19-22	0.4	
Wtd Avg	**Sterile water**	**1,927**	**19-59**	**9.5**	**< 0.001**
	Vaccine	**1,910**	**19-59**	**2.4**	

[a]Mortality includes animals that died or were euthanized for necropsy because of poor condition.

[b]Within farm (individual barn-level) statistical analysis utilized the two-sample proportions test, where H_0: Vaccinates = Controls.

[c]Statistical analysis utilized the one-way analysis of variance test, where H_0: Vaccinates = Controls.