Technical Bulletin

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The impact of seroconversion following vaccination on the efficacy of Ingelvac CircoFLEX®

For some diseases, there seems to be a relatively good correlation between the antibody titres obtained following vaccination and the level of protection. For others it does not seem to be as important. This technical bulletin will look at serological results obtained following vaccination with Ingelvac CircoFLEX®, a one-dose vaccine against porcine circovirus type 2 (PCV2) and protection against natural challenge.

In a Quebec study conducted in 2006, Ingelvac CircoFLEX® was administered to pigs between 19 and 59 days of age going to four different finishing units.[1] A similar number of nonvaccinated control pigs were injected with sterile water and placed in these barns. Pens of vaccinated and control pigs were alternated to make sure that exposure would be equal in both groups. In this production system, pigs usually started showing clinical signs of PCVAD about 3 to 4 weeks after placement in the finishing units at approximately 85 days of age. Table 1 shows the mortality results that were obtained.

Table 1: Mortality results in pigs that were either vaccinated with Ingelvac CircoFLEX® or injected with sterile water (controls).

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

[a] Mortality includes the animals that died and those euthanized for necropsy because of their poor condition.

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

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

The difference in mortality between vaccinated and control pigs was highly significant in all groups of vaccinated pigs. Twenty pigs each vaccinated at 26, 40 and 52 days of age, were blood-tested for the presence of PCV2 antibodies using the Ingezim Circovirus IgG/IgM ELISA test (Ingenasa) and an