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Effect of one or two dose vaccination regimens on PCV2 viremia and ADG in 5 different US studies

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Introduction and Objectives

Recently there have been reports suggesting that residual PCV2 viremia in vaccinated pigs could have an impact on performance parameters, and should thus be considered when evaluating the commercial vaccines on the market. Many studies have shown that, in *non-vaccinated* animals, there was often a correlation between the quantity of virus found in tissues and serum, and the severity of clinical signs and lesions.[1,2] Some of these publications have suggested that when a threshold level of virus in tissues is exceeded, the likelihood of developing PCVAD was increased.[1,2] However in *vaccinated* pigs, such a relationship between residual viremia and disease, or between viremia and reduced performance, has notably been absent.[3,4] There is also some debate on the comparative capability of one vs two dose vaccines and vaccination protocols for reducing residual PCV2 viremia. The objective of this 5 study summary is to evaluate the comparative reduction in viremia and the presence or absence of correlation with ADG.

Materials and Methods

This paper summarizes information from 5 different US studies where pigs vaccinated with a two-dose PCV2 vaccine were compared to pigs vaccinated with a single dose of Ingelvac CircoFLEX®. Outcomes of interest are percentage of viremic pigs, average PCR log titer and ADG. Individual pig was the experimental unit in all studies. The number of pigs in each group for each study ranged from 120 to 900. All pigs were individually weighed at 3, 10 and 22 weeks of age, and 10 pigs per group were blood sampled at 3, 6, 10, 14, 18 and 22 pigs of age for PCR testing. Each study was statistically analyzed using methods appropriate for each parameter.

Results

The results obtained with two full doses of the two-dose vaccine were not significantly different from those obtained with one dose of Ingelvac CircoFLEX in terms of percentage of viremic pigs, average titer of virus in serum and ADG in any of the 5 studies. Even for studies 3 and 5, where there was an apparent nominal difference in the percentage of viremic pigs and in viral load, there were no differences in ADG.

Table 1: Comparative viremia and weight gain results obtained with Ingelvac CircoFLEX and a two-dose PCV2 vaccine in 5 different US studies.

Study	Two-dose vaccine			Ingelvac CircoFLEX		
	% viremic*	Avg log titer	ADG, lbs	% viremic*	Avg log titer	ADG, lbs
1	**54**	4.99	1.63	**50**	4.87	1.61
2	**0**	4	1.55	**10**	4.11	1.57
3	**7**	4.12	1.62	**33**	4.63	1.63
4	**0**	4	1.34	**8**	4.11	1.36
5	**25**	4.31	1.43	**4**	4.07	1.44
Avg	**17.2**	**4.28**	**1.51**	**21**	**4.36**	**1.52**

*% pigs > 4 logs at peak of viremia.
No statistically significant differences were detected for these parameters within any of the 5 studies.

Conclusions

Viremia and ADG did not differ significantly between groups within any of the 5 studies. Even if there had been a difference in viremia outcomes in favor of the same product for all the trials, these criteria are not biologically or economically relevant in the absence of any association with ADG. The choice of PCV2 vaccine should be based on cost-effectiveness, safety, convenience and the potential impact on animal welfare.

References

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