Reduction of antibiotic usage and performance improvement following the use of a PCV2 vaccine

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Introduction

There is growing concern about the use that is made of antibiotics in swine production, and a reduction of that use is perceived to be something that would be beneficial to the image of the industry.

Material and Methods

The use of antibiotics and the production performance were evaluated in seven finishing units of a production company before and after vaccination against porcine circovirus type 2 (PCV2) was implemented. A comparison was made for each single finishing unit to determine how vaccination of pigs with Ingelvac CircoFLEX, a one-dose and 1 mL PCV2 vaccine, affected production. The piglets were vaccinated at weaning, and for each of the seven finishing units data on antibiotic cost, gain, feed conversion and mortality were tabulated for the batch before vaccination and the one after vaccination.

Results

Table 1 shows the results that were obtained in these seven barns in batches before and after PCV2 vaccination was implemented.

Table 1: Performance of pigs and antibiotic cost in batches before and after vaccination with a PCV2 vaccine was implemented in seven different barns.

Barn	Antibiotic cost $/pig		Daily gain gr/day		Feed conversion		Mortality rate %	
	Before	After	Before	After	Before	After	Before	After
1	2.67	2.21	704	885	3.12	2.77	12.99	6.05
2	2.9	3.07	722	836	3.06	2.81	14.05	6.56
3	6.32	1.62	772	892	2.8	2.73	5.9	3
4	4.02	2.58	832	847	2.60	2.59	4.76	3.08
5	3.9	2.19	822	858	2.83	2.65	8.43	3.45
6	4.54	2.49	864	830	2.67	2.60	6.59	3.03
7	2.68	2.44	694	819	2.86	2.76	13.92	6.67
Avg	**3.86**	**2.37**	**773**	**852**	**2.85**	**2.70**	**9.52**	**4.55**
P	**0.05**		**0.03**		**0.02**		**< 0.001**	

Discussion

Since piglets came from the same sow herds, were raised in the same finishing units, received the same feed, except for minor changes that were taken into
consideration in the economic calculation, were under the same management and supervision level, it was considered that for the most part the changes in medication and performance were due to the vaccination protocol. In each of the seven finishing units, all or most parameters were improved following vaccination. On average the use of antibiotics decreased ($3.86 vs $2.37/pig), average daily gain increased (773 g vs 852 g), and feed conversion (2.85 vs 2.70) as well as mortality rate (9.52% vs 4.55%) were both reduced in vaccinated pigs. An annual gross margin of more than $10 per pig vaccinated was calculated by the production company where the study took place.

When pigs get sick and die because of a given disease, the use of effective vaccines can greatly improve performance and reduce both the losses and the use that is made of antibiotics. While porcine circovirus associated disease (PCVAD) is caused by a virus, secondary organisms frequently complicate the condition and make things worse. In a study where pigs were inoculated with PCV2 alone, *Mycoplasma*

hyopneumoniae alone, or both, the authors concluded that *Mycoplasma hyopneumoniae* potentiates the severity of PCV2-associated lung and lymphoid lesions, increases the amount and prolongs the presence of PCV2-antigen, and increases the incidence of PCVAD in pigs.[1] Thus antibiotic usage can be increased even in situations where the primary disease is of viral origin.

Conclusion

The results obtained in the present study suggest that there are situations where PCV2 vaccination can decrease the use of antibiotics while improving production and economical performance.

References

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