

# Case report: changes in mortality after an alteration in the PCV2 vaccination protocol



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## INTRODUCTION

Porcine circovirus type 2 (PCV2), a small, non-enveloped, single stranded circular DNA virus, is the causative agent of porcine circovirus associated disease (PCVAD). PCVAD is considered to be an economically important disease because of high mortality and morbidity.

In Korea, PCV2 was isolated for the first time in 1998, and the first PCV2 vaccine was introduced in 2008. Ninety seven percent of Korean swine farms vaccinated against PCV2 in 2013. After the introduction of PCV2 vaccination, the PCVAD problems have been solved and vaccination was considered as the only way to control PCVAD in Korea. However various PCV2 vaccines show differences in efficacy and safety. The objective of this study was to determine whether the change of a PCV2 vaccine can have an effect on mortality.

## MATERIALS AND METHODS

The field observation was conducted on a farrow to finish farm with 100 sows. The farm uses Berkshire and Duroc as dam and sire line. This farm was repopulated in February 2013 and therefore had a good health status and was PRRS negative. Piglets are weaned at 24 days of age, and transferred to the nursery barn. At the age of around 70 days of age, pigs are transferred to the finisher barn.

This farm started to use Circumvent PCV according to label with a first shot at 21 days of age and a second shot at 42 days of age in October 2013. However, several sudden deaths were observed immediately after vaccination. Therefore, it was decided in March 2014 to change the PCV2 vaccine and to use Ingelvac CircoFLEX<sup>®</sup> given according to label at 21 days of age.

To evaluate the possible effect of the different vaccines on mortality, the overall mortality per batch and the animals that perished within 48 hours after vaccination were recorded. For Circumvent PCV2, 17 batches of in total 555 piglets and for Ingelvac CircoFLEX<sup>®</sup> 26 batches of in total 1071 piglets were evaluated.

During the time of this observation, there were no other changes in management. Fisher's exact test was used to test differences of mortality between two vaccination groups.

## RESULTS

For the pigs that were vaccinated with Circumvent PCV, the mortality for the 48 hours post vaccination period was 7.2 % compared to 0.8 % for the pigs that were vaccinated with Ingelvac CircoFLEX<sup>®</sup> (p=0.0001). The pre-weaning mortality of two groups was 13.2% (Circumvent PCV) and 8.2% (Ingelvac CircoFLEX<sup>®</sup>, p=0.0021).

This resulted in 8.46 pigs weaned per sow for the pigs that were vaccinated with Circumvent PCV compared to 9.36 pigs weaned per sow in the pigs vaccinated with Ingelvac CircoFLEX<sup>®</sup>. The wean to slaughter mortality was 2.07 % (Circumvent PCV) and 1.42 % (Ingelvac CircoFLEX<sup>®</sup>).

## CONCLUSION

Circumvent PCV vaccinated pigs had a higher pre-weaning mortality and a lower number of weaned pig per sow compared to the piglets that were vaccinated with Ingelvac CircoFLEX<sup>®</sup>. This difference was mainly observed within 48 hours after vaccination. No post mortems or other diagnostics have been applied so it is hard to speculate on the cause of the observed difference in mortality. But the fact that the mortality was chronologically associated with vaccination suggests that vaccine safety and its implication on animal's performance should be well considered when making vaccine choices.

