Use of PCV2 humoral antibody detection as a method to verify proper PCV2 vaccination in a new commercial PCV2 vaccine

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Background & Objectives

Some PCV2 commercial vaccines have shown to induce a very strong humoral response. This fact allows the use of post-vaccination seroconversion as a reliable way to demonstrate proper vaccination of piglets in addition to PCV2 PCR. The aim of this trial was to study the humoral immune response induced by a new intradermal PCV2 vaccine and its possible use as a method to verify proper vaccination.

Materials & Methods

In 18 commercial Spanish farms, piglets were vaccinated at 3–4 weeks with the new intradermal bivalent vaccine Porcilis® PCV M Hyo ID (MSD Animal Health). Six weeks post-vaccination, 407 piglets (9–10 weeks old) were bled. PCV2 antibodies were measured with the semi-quantitative BioChek PCV2 Ab ELISA. PCV2 PCR was additionally performed to exclude field infection.



Photo 1: Piglet vaccinated with the IDAL® device (MSD Animal Health)

Results

All samples were PCV2 PCR negative, indicating antibody responses were likely vaccine-derived.

Among 407 samples, 40 were PCV2 antibody-negative, resulting in 89.68% overall seropositivity. Average titer of positives was 3,207 (positive >1071). On farm level, positivity ranged from 75% to 100%; average titers ranged from 2,462 to 4,446 (Table 1). No correlation was found between percentage positive and mean PCV2 titer at farm level.

Farms	18
Nº Samples	407
PCV2 PCR negative (9w)	100%
% PCV2 Pos BioChek (9w)	89.68%
Average PCV2 titer	3207

Table 1: PCV2 seroconversion at 9w (BioChek test)

Discussion & Conclusion

The results of this trial show that in all farms observed, the new vaccine induced a clear PCV2 immune response 6 weeks post-vaccination, detected by a commercial PCV2 ELISA. These results are especially useful as they suggest that a simple serological test performed 6 weeks post-vaccination, in combination with PCV2 PCR to ensure that no field virus is recirculating, makes it possible to verify proper administration of the vaccine and, therefore, to implement corrective measures if necessary.

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