Comparison and economic evaluation of two PCV2 vaccination programs used in France

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OBJECTIVE
First described in West Canada in 1996, PMWS was seen soon after in France1. Nowadays the virus PCV2 is recognised as being ubiquitous and the PCV2-related diseases (PCVD) have a major impact on the world swine production. Different vaccination programs exist and help to control the disease.

The objective of this trial was to compare the efficacy and economic benefits of a new single dose PCV2 piglet vaccine (Ingelvac CircoFLEX®, 1 ml), with the previously established piglet vaccination in the herd (Circovac®, 0.5 ml).

MATERIALS AND METHODS
The trial was carried out in 700-sow farrow-to-finish unit in Brittany, France, with a weekly production rhythm and weaning at 21 days of age. The herd was positive for PCV2, PRRS, APP, Mycoplasma hyopneumoniae and Lawsonia intracellularis. Sow vaccination with Circovac® was introduced in mid 2006 and shortly before the start of the trial piglet vaccination with 0.5 ml Circovac® was established in addition to that.

A total of 1,198 pigs were randomly assigned at weaning to two treatment groups and individually ear-tagged: 599 piglets received intra-muscularly 0.5 ml of Circovac®, 599 piglets were injected intra-muscularly with 1 ml of Ingelvac CircoFLEX®. Pigs of both groups were kept in separate pens, but in the same rooms. The farm staff was blinded to treatment.

To determine the course of PCV2 infection 9 blood samples were taken per group at 4 time points and tested with PCR (3 pools of 3 samples each): weaning, nursery, mid and end of finishing. At the same time the difference in mortality between Circovac® and Ingelvac CircoFLEX® became very obvious leading to a difference of wean-to-finish mortality of more than 60% (3.34 vs 8.68%, p=0.0001, table 1). The Ingelvac CircoFLEX® vaccinated pigs performed significantly better than the Circovac® vaccinates, resulting in a significantly higher GM (table 1). In addition, Ingelvac CircoFLEX® vaccinated pigs were clinically healthier, as reflected in a significantly lower number of animals treated with antibiotics (3.67 vs 6.34%, p=0.034).

In terms of statistic, weaning weights, end weights ADG w-f and GM were evaluated by T-test; individual treatments, culls and mortality by Chi-square (Statistica® V.8, Statsoft Inc., Tulsa, USA).

RESULTS
The presence of PCV2 during the trial was confirmed through PCR positive samples mid and end of finishing. At the same time the difference in mortality between Circovac® and Ingelvac CircoFLEX® became very obvious leading to a difference of wean-to-finish mortality of more than 60% (3.34 vs 8.68%, p=0.0001, table 1). The Ingelvac CircoFLEX® vaccinated pigs performed significantly better than the Circovac® vaccinates, resulting in a significantly higher GM (table 1). In addition, Ingelvac CircoFLEX® vaccinated pigs were clinically healthier, as reflected in a significantly lower number of animals treated with antibiotics (3.67 vs 6.34%, p=0.034).

DISCUSSION AND CONCLUSION
In a PCV2 vaccinated sow herd the pigs of the Ingelvac CircoFLEX® vaccinated group had a lower mortality, less culls, increased weight gain and less antibiotic treatments compared to the Circovac® vaccinated animals.

These findings indicate a superior efficacy against the negative impact of PCV2 infection, which resulted in a significant gross economic benefit of +7.8 € per pig.

REFERENCES

<table>
<thead>
<tr>
<th>CircoVac®</th>
<th>CircoFLEX®</th>
<th>Differences</th>
<th>p-value</th>
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<tbody>
<tr>
<td>Weaning weight (kg)</td>
<td>5.55 a</td>
<td>5.49 a</td>
<td>-0.06</td>
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<td>End weight (kg)</td>
<td>86.51 a</td>
<td>88.65 b</td>
<td>+2.14</td>
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<td>ADG w-f (g/day)</td>
<td>598 a</td>
<td>612 b</td>
<td>+14</td>
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<td>Mortality (%)</td>
<td>8.68 a</td>
<td>3.34 b</td>
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<td>Culls (%)</td>
<td>7.85 a</td>
<td>3.28 b</td>
<td>-4.57</td>
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<td>GM (€/pig)</td>
<td>27.8 a</td>
<td>20.0 b</td>
<td>+7.8</td>
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(a,b: different superscripts indicate significant statistical differences)