

# COMPARATIVE STUDY OF THE HUMORAL IMMUNE RESPONSES DEVELOPED BY 5 COMMERCIAL MONOVALENT ERYSIPELOTHRIX RHUSIOPATHIAE VACCINES

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## INTRODUCTION

The aim of this study was to compare the humoral immune responses elicited in naïve pigs by five different inactivated monovalent *Erysipelothrix rhusiopathiae* vaccines.

## MATERIALS AND METHODS

A controlled, blinded field study was performed on a 360-sow farm located in Spain.

A total of one hundred and eighty 13-week-old pigs, clinically healthy and free from antibodies against *E. rhusiopathiae*, were randomly assigned to six different groups. Animals from groups 1 to 5 were immunised twice i.m. (2 ml/dose, at 13 and 16 weeks of age approx.) with five different vaccines that are commercially available in Europe. Group 1 was immunised with ERYSENG<sup>®</sup>, a vaccine adjuvanted with Hipramune<sup>®</sup> G<sup>d</sup>, and groups 2-5 were immunised with four different swine erysipelas monovalent vaccines. Animals from the control group (Group 6) received a phosphate buffered saline (PBS) following the same schedule. 15 serum samples/group were obtained on days 0, 19, 47 and 78 and antibodies to *E. rhusiopathiae* (IgG) were titrated using a commercially available ELISA (CIVTEST<sup>®</sup> SUIS SE/MR). Samples were considered positive when IRPC $\geq$ 40. Antibody titres were compared between groups using the Kruskal-Wallis test ( $p < 0.05$ ).

## RESULTS

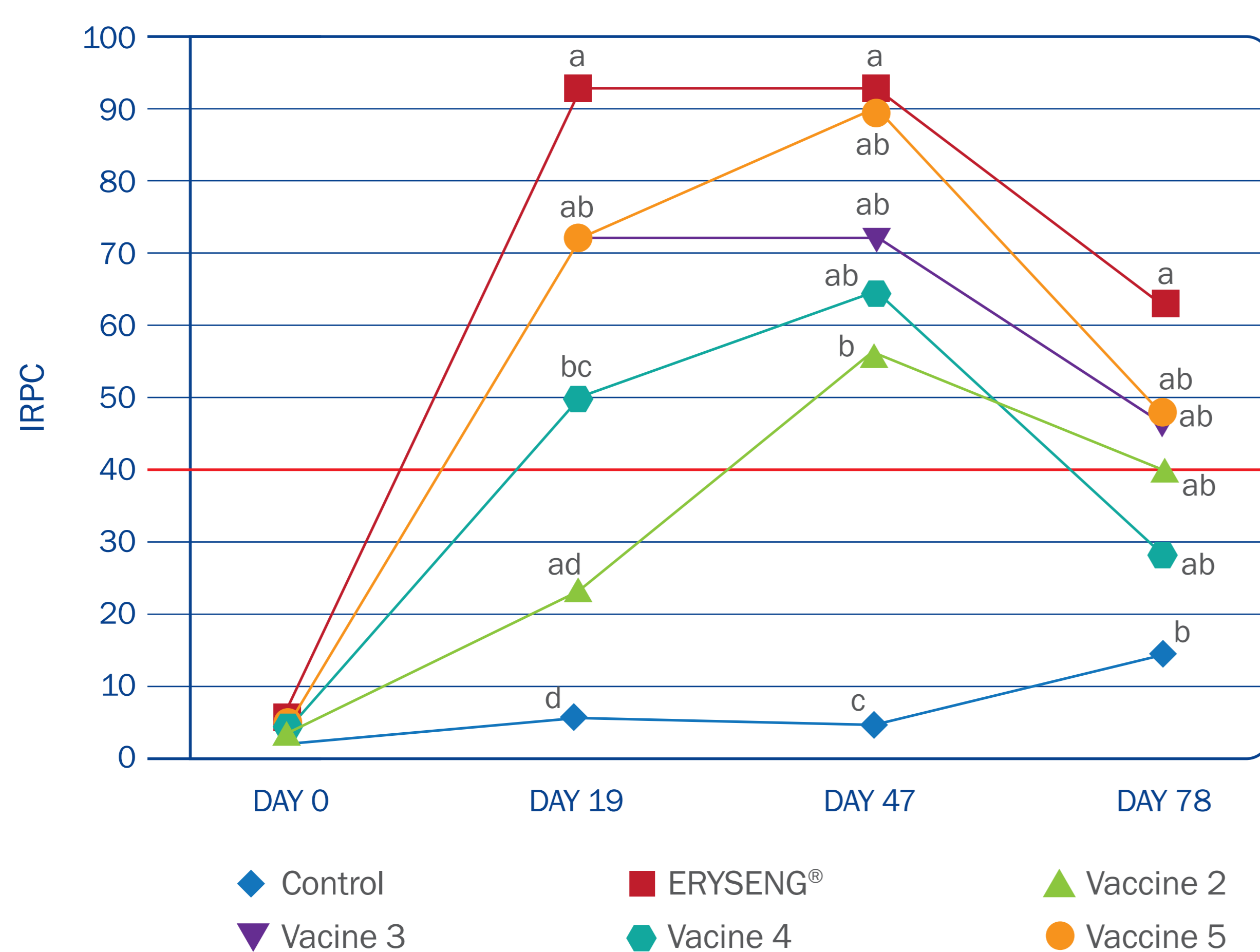


Figure 1. Mean antibody levels against *E. rhusiopathiae*.

\*Statistical differences between groups are represented with different letters a-d (Kruskal-Wallis test,  $p < 0.05$ ).

*E. rhusiopathiae* antibody titres from group 1 (ERYSENG<sup>®</sup>) were the highest throughout the fattening period and showed statistically significant differences to groups 2, 4 and 5 on day 19 and groups 2 and 5 on day 47 ( $p < 0.05$ ). A decrease in the mean *E. rhusiopathiae* titres for all vaccinated groups was observed from day 47 onwards. At the end of the study (day 78) the group vaccinated with ERYSENG<sup>®</sup> was the only one which showed statistically significant differences to the control group. The control group remained negative and stable during the entire fattening period.

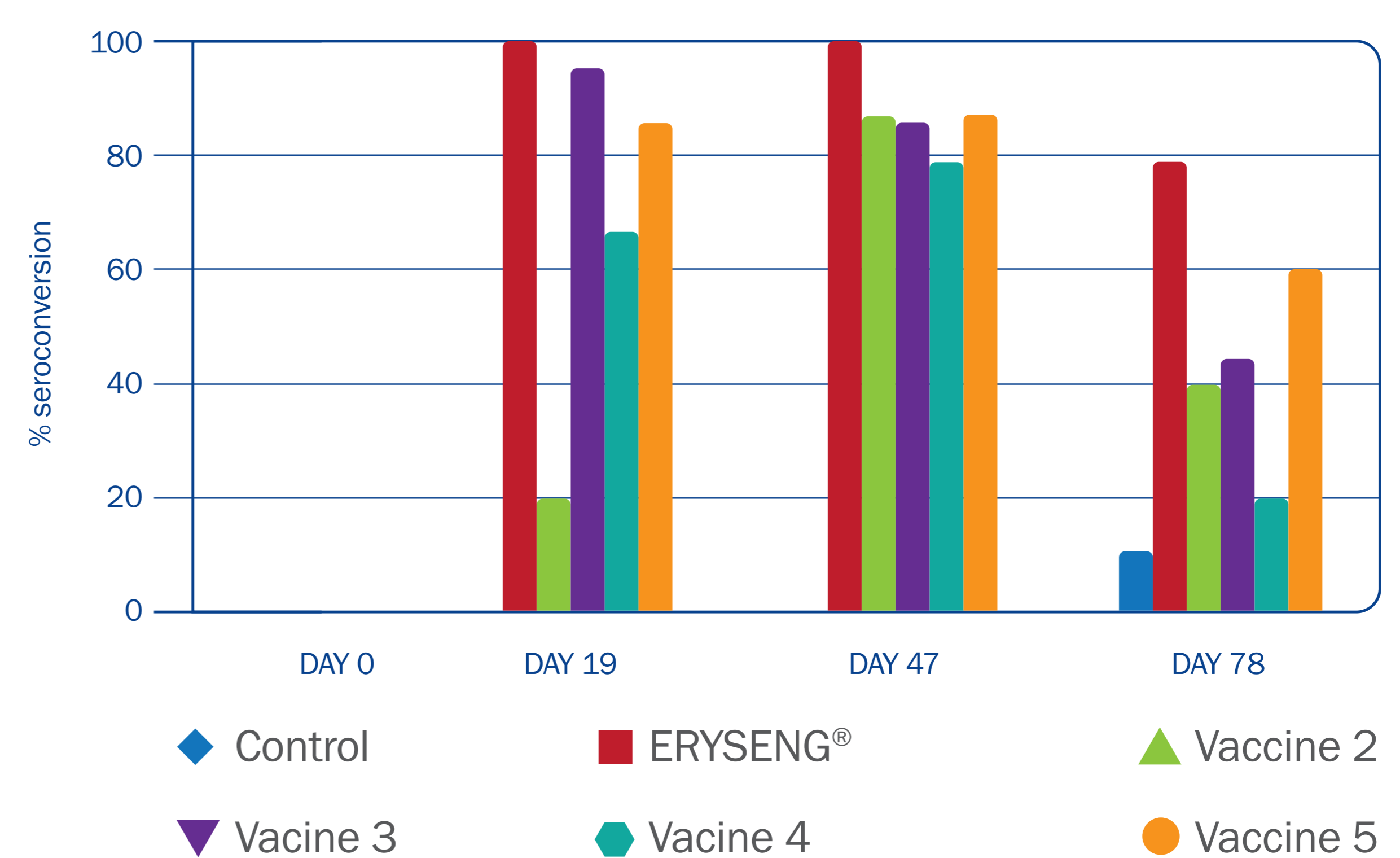


Figure 2. Percentage of seropositivity against *E. rhusiopathiae*.

The percentage of seropositive pigs in the ERYSENG<sup>®</sup> group was the highest of all the different commercial vaccines during the entire study. 78 days after vaccination, around 80% of the animals vaccinated with ERYSENG<sup>®</sup> were seropositive, with titres above the cut-off (IRPC $\geq$ 40), whilst the percentage of seropositive samples from the other groups was: 40% (vaccine 2), 46% (vaccine 3), 22% (vaccine 4) and 60% (vaccine 5).

## DISCUSSION AND CONCLUSIONS

In this study, the humoral immunity elicited by ERYSENG<sup>®</sup> was faster, higher and lasted longer than the humoral immune response developed by the other commercial vaccines. ERYSENG<sup>®</sup> provided the best humoral protection during the entire fattening period.