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ASSESSMENT OF THE HUMORAL IMMUNE RESPONSE AGAINST SWINE ERYSIPELAS ELICITED BY ERYSENG® PARVO AND A TRIVALENT VACCINE

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INTRODUCTION

Prevention of Swine Erysipelas (SE) is best accomplished by immunization programmes. Both humoral and cell-mediated immunity play a role in the host defense against SE infection. The presence of cellular-mediated immunity against SE was confirmed in mice experimentally immunized with acapsular *E. rhusiopathiae*[1]; however; its relative contribution to protection and the bacterial antigens involved are unknown at the present time. This study therefore targeted the humoral immune response that could be quantified by different commercial indirect ELISAs[2].

The aim of this study was to evaluate and compare the humoral immune response against SE elicited by ERYSENG® PARVO and a trivalent vaccine over a period of 71 days.

MATERIALS AND METHODS

A controlled and blinded experimental trial was performed in SE serologically negative animals. 30 animals were randomly assigned to 3 different groups (n=10). Group 1 (G1) was vaccinated with ERYSENG® PARVO (bivalent vaccine against SE and Porcine Parvovirus (PPV) with an adjuvant based on ginsenosides), group 2 (G2) with Vaccine B (trivalent vaccine against SE, PPV and *Leptospira interrogans sp.* adjuvanted with α-tocopheryl acetate), and Group 3 (G3) was injected with PBS as the control group. All the groups were vaccinated and revaccinated intramuscularly following the summary of product characteristics (SPC) of each product.

Serum samples were taken on days -21, 21, 36, 49 and 71 after vaccination, day 0 being the day of the first dose. SE serology was performed using a commercial indirect ELISA kit without bias versus any of the vaccines used[2].

RESULTS

At the beginning of the study, all the animals were negative against SE, and the control group remained negative for the whole duration of the trial.

On the other hand, after the basic vaccination scheme, SE-antibody titres in G1 were the highest throughout the study, being statistically different from G2 (Mann-Whitney U test; $p<0.05$) from day 36 to day 71 of the study.

G1 and G2 remained above the cut-off (≥40 IRPC) within the study, with the maximum antibody levels occurring on day 49 of the study. However, G1 reached mean SE-antibody levels of more than 103 IRPC on days 36, 49 and 71 after vaccination, whilst G2 reached a maximum of 92.3 only on day 49 of the study (Figure 1).

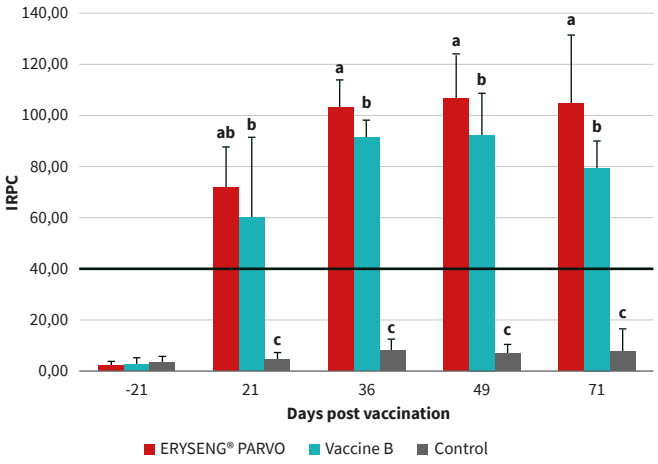

Figure 1. Results are represented as average and standard deviation. Different letters indicate statistically significant differences (Mann-Whitney U test; $p<0.05$). The slashed red line indicates the cut-off (40 IRPC).

CONCLUSIONS AND DISCUSSION

A whole vaccination cycle for a gilt will involve a period of over 166 days, as the basic vaccination scheme starts 42 days before artificial insemination, followed by 114-115 days of gestation. The next vaccination should be given on day 10 of lactation so that a strong and long-lasting humoral immune response will be needed against SE.

The humoral immune response elicited by both vaccines was different in terms of dynamics and intensities, with the response produced by ERYSENG® PARVO being notably higher compared to vaccine B with statistical differences on days 36, 49 and 71 after vaccination, this could lead to have a better herd immunity against SE.

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