

VACCINATION OF 3-DAY-OLD PIGS WITH A PRRSV-1 MODIFIED LIVE VACCINE INDUCES SIMILAR NEUTRALIZING TITERS THAN 3-WEEK-OLD VACCINATION

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Introduction

Maternally derived antibodies (MDA) may interfere with the immune response to vaccination. The present study aimed to compare the development of neutralizing antibodies (NA) after vaccinating piglets with MDA either at 3 days or 3 weeks of age with two different MLV PRRSV-1 vaccines.

Materials & Methods

Farm 1 vaccinated sows with Unistrain® PRRS (**V1** – strain VP-046 BIS) three times per year. In this farm a group of 29 piglets was vaccinated with **V1** at 3 days of age (3d) either intradermally (ID, n=15) or intramuscularly (IM, n=14). Another group of 31 piglets was vaccinated at 3 weeks of age (3w) ID or IM (13 and 16 animals, respectively).

In **Farm 2**, sows were vaccinated with Suvaxyn® PRRS (**V2** – strain 96V198) as above and piglets were vaccinated IM with **V2** at 3d or 3w.

Sera were collected at 3, 21, 28 and 56 days of age to assess the homologous titers of NA.

In both farms, 5 non-vaccinated animals were kept as controls.

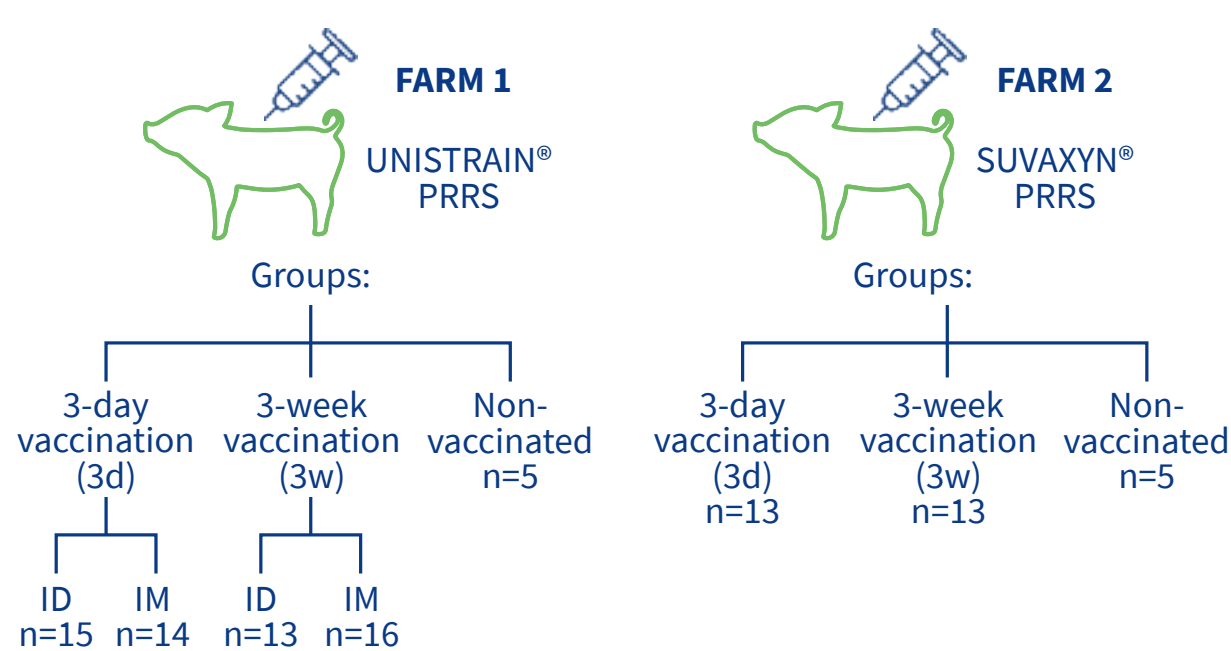


Figure 1. Design of the study: groups according to the vaccination protocol for each farm.

Results

In **Farm 1** (Figure 2), all pigs had NA against **V1** at 3 d ($4.1 \pm 2.1 \log_2$). The titers decreased in all groups at 21 d age ($0.3 \pm 0.9a$ for ID 3d, $1.9 \pm 1.6a,b$ in IM 3d, $0.4 \pm 0.9a$ in ID 3w, $2.1 \pm 1.9b$ in IM 3w and $2.7 \pm 1.1a,b$ in the unvaccinated group; $p < 0.1$). Afterward, NA increased at day 56, with \log_2 averages of 3.3 ± 1.9 for ID 3d, 4.1 ± 2.1 for IM 3d, 2.7 ± 1.6 for ID 3w, and 2.8 ± 2.1 for IM 3w. No significant differences between ID and IM were detected at any date. In **Farm 2** (Figure 3), animals also had NA against **V2** at 3 d ($4.6 \pm 1.7 \log_2$) that decreased at 21 d ($3.3 \pm 1.7, 2.5 \pm 1.3$ and $1.8 \pm 0.8 \log_2$ for 3d, 3w and non-vaccinated respectively). In contrast to animals vaccinated with **V1**, NA against **V2** did not increase at day 56.

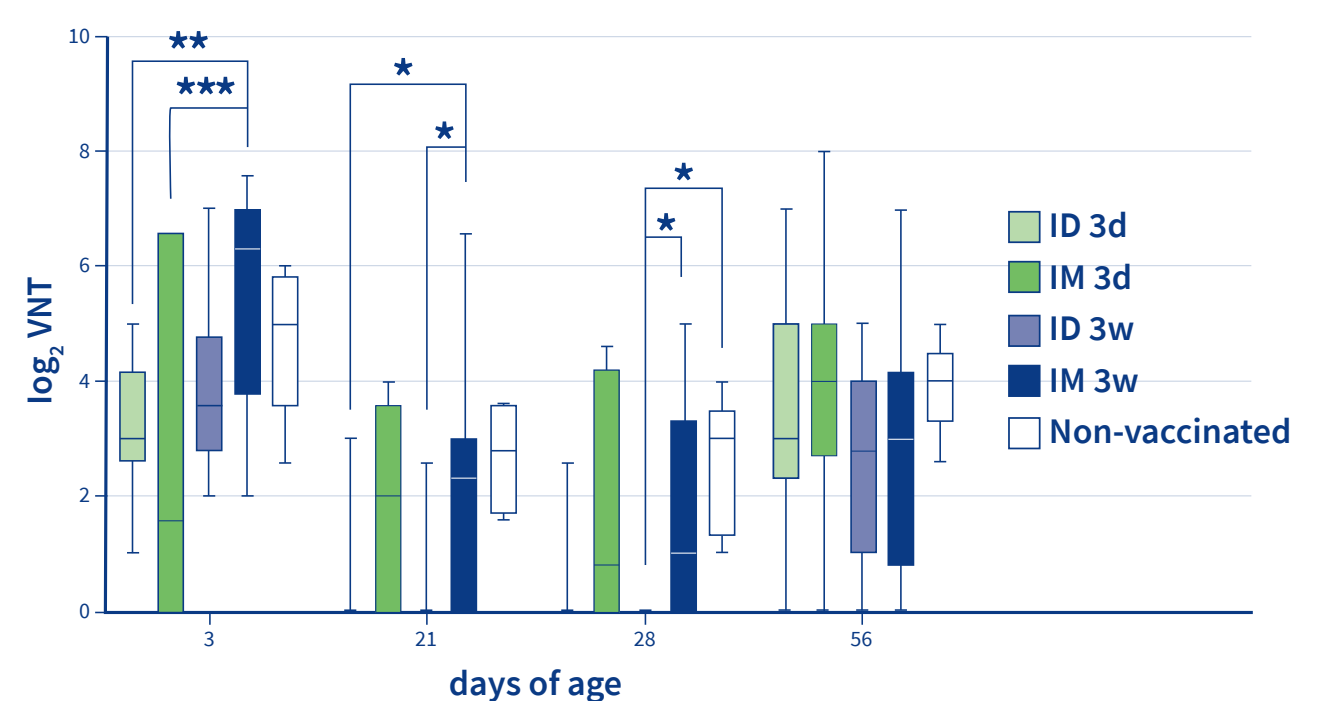


Figure 2. Homologous neutralization titers (\log_2) in animals vaccinated with **V1**.

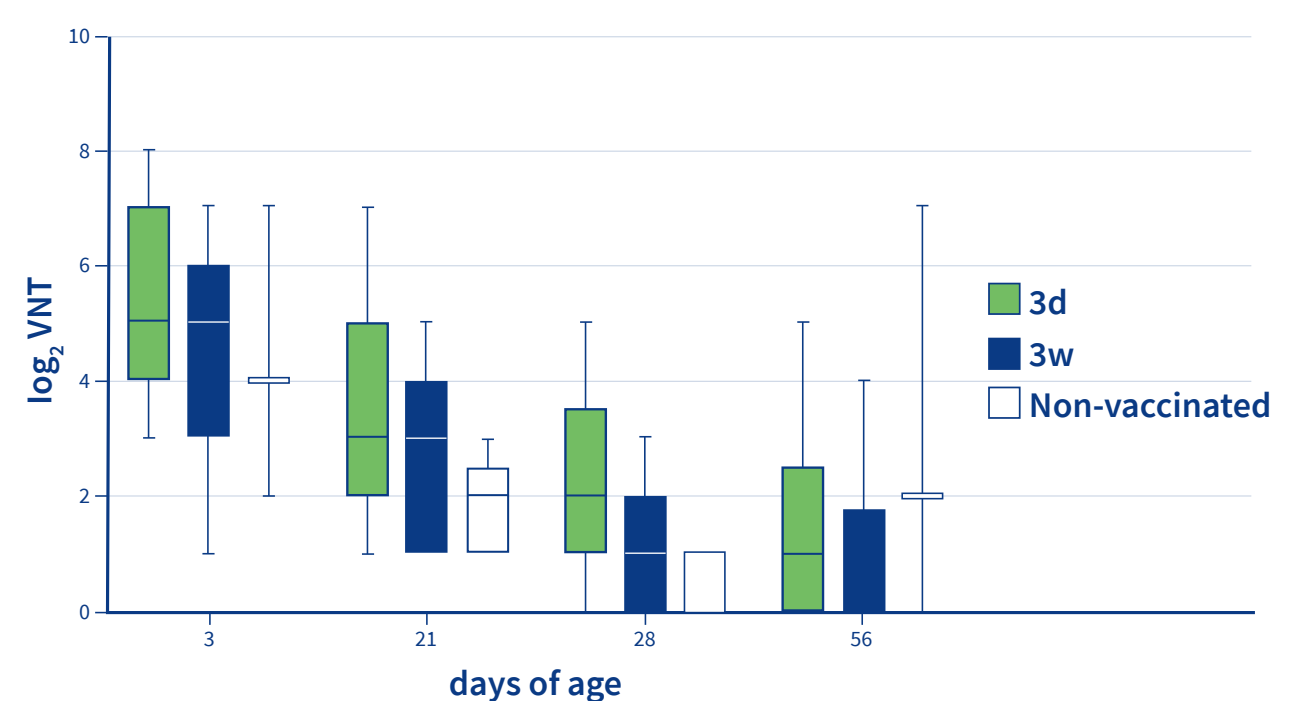


Figure 3. Homologous neutralization titers (\log_2) in animals vaccinated with **V2**.

Discussion & Conclusion

The results of the present study showed that the administration of Unistrain® PRRS (**V1**) at 3d or 3w by the IM or ID route produced similar results in terms of NA. In the case of Suvaxyn® PRRS (**V2**), titers did not increase after vaccination, which might be explained by the interference of MDA with the development of the humoral response.

Code assign: IMM-PP-46