

# COMPARATIVE STUDY OF THE EFFECT OF INTRADERMAL AND INTRAMUSCULAR MASS VACCINATION (UNISTRAIN® PRRS) ON THE COURSE OF SEROCONVERSION IN PRRS-NEGATIVE PIGS

Busquet\*, M.; Blanch, M.; Torrents, D.; Verdaguer, J.; Sánchez-Matamoros, A  
\*Corresponding author (marta.busquet@hipra.com)  
HIPRA, Amer (Girona), Spain

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## OBJECTIVE

MLV UNISTRAIN® PRRS administered via the intramuscular (IM) route is an effective control measure against the PRRSV (Fenech *et al.*, 2013). A needle-free injection device (Hipradermic®) has been designed by HIPRA as a new option for the intradermal (ID) administration of this vaccine on swine farms considering the advantages of this system (Chase *et al.*, 2008). The aim of this study was to compare the humoral immune response following vaccination via the ID or the IM route in PRRS-negative pigs under field conditions.

## MATERIALS AND METHODS

Two PRRS-negative fattening farms, housing around 430 pigs (Farm A) and 360 pigs (Farm B), 10-weeks old, were randomly divided into two different groups, the IM group and the ID group, and 35 and 42 healthy animals per group were individually marked from Farms A and B, respectively. In the same way, 12 pens on Farms A and B were selected for each group. The IM group was vaccinated intramuscularly with UNISTRAIN® PRRS (2 ml/dose) and the ID group was vaccinated intradermally with the same vaccine (0.2 ml/dose) using Hipradermic®. The PRRSV antibody response (Civtest® Suis PRRS, HIPRA), PRRSV RNA detection (Martínez *et al.* 2008) and safety were compared in both groups. Different statistical tests were performed according to the recorded data.

## RESULTS

Prior to vaccination, all the samples were negative for RNA and PRRSV antibodies (Fig 1 and 2).

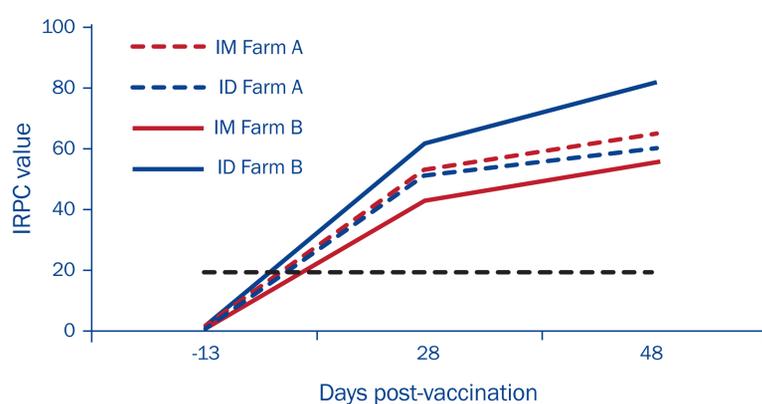


Figure 1. Group means of the IRPC value of the PRRSV antibody response in the oral fluid of animals vaccinated via the IM or the ID route on Farms A and B.

After vaccination, the antibody response in both groups showed a significant increase (Spearman;  $p < 0.05$ ) (Figs. 1 and 2). The antibody levels for each day were similar for the ID and IM groups on Farm A (Figs. 1 and 2). However, the antibody levels at 48 days post-vaccination (dpv) were significantly lower in the IM group than in the ID group on Farm B at individual and pen level (Mann Whitney;  $p < 0.05$ ) (Figs. 1 and 2).

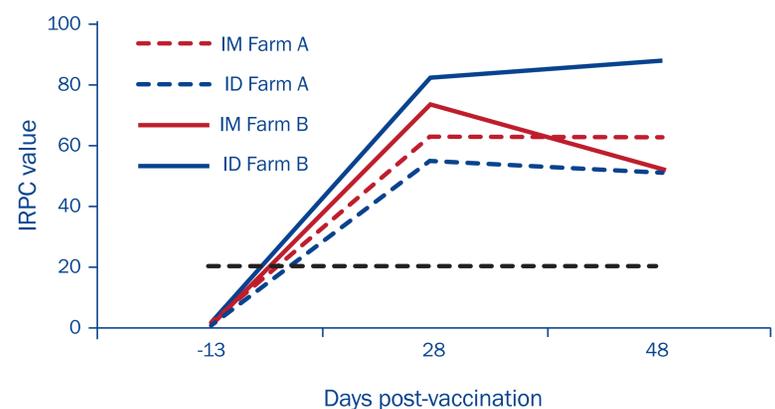


Figure 2. Group means of the IRPC value of the PRRSV antibody response in serum of individual animals vaccinated via the IM or the ID route on Farms A and B.

With regard to safety, no local reaction was detected at the time of inoculation, whilst 4 hours later, animals showed 11.5 % mild inflammation and 1.2% crust, resolving within 2 days.

## DISCUSSION AND CONCLUSIONS

Vaccination with UNISTRAIN® PRRS induces a humoral response in PRRS-naïve pigs regardless of the injection technique used. Both injection techniques had a comparable effect on the antibody response at 28 and 48 dpv, although some higher antibody levels were observed with the ID route. Vaccination with UNISTRAIN® PRRS ID seems to be a new, safe and immunogenic method for PRRS control plans.

## ACKNOWLEDGMENT

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