

PRODUCTIVE IMPROVEMENT ON PRRSV CO-INFECTED SWINE FARMS IN SOUTHERN AREAS OF THAILAND VACCINATED WITH UNISTRRAIN® PRRS ID

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INTRODUCTION

Porcine reproductive and respiratory syndrome (PRRS) is a global viral swine disease that causes economic losses roughly estimated at 32.9 million US\$ annually. Although vaccination with MLV vaccines does not necessarily provide full protection, it is useful as a means of PRRS control to reduce the impact of the disease. The use of modified live vaccines (MLV) to stabilize the breeding herd is a widespread practice. UNISTRRAIN® PRRS, by either the intradermal (ID) or intramuscular (IM) route of administration, can induce both humoral and cell-mediated immune responses against a HP-PRRSv infection and also even in a co-challenge situation with PRRSv1 (1).

The aim of this study was to evaluate the field behaviour of UNISTRRAIN® PRRS MLV vaccine on a PRRSv1 and PRRSv2 co-infected farm with a recent outbreak recorded.

MATERIALS AND METHODS

The study was carried out on a 12,000-sow farrow-to-wean farm located in a high swine density area in the southern part of Thailand. The mortality rate in lactation and fattening units was 9-14% and 15-20%, respectively. PCR diagnostic assay (HIPRA Diagnos® Laboratory) confirmed PRRSv1 and PRRSv2 infection on the farm. The farm owners decided to stop using the PRRSv2 vaccine and to start using UNISTRRAIN® PRRS due to ongoing losses of grower-finisher pigs and severe adverse reactions after vaccination. Sows were intradermally vaccinated with the registered vaccine combination for PRRSv and Aujeszky's disease (UNISTRRAIN® PRRS + AUSKIPRA® GN) using a needle-free injector Hipradermic®. Piglets were intradermally vaccinated at 7-days of age with UNISTRRAIN® PRRS using Hipradermic®. The injection site was examined by palpating for local reactions daily until 3 days post vaccination. The efficacy of UNISTRRAIN® PRRS in controlling PRRSv1 and PRRSv2 coinfections was determined by a 1-year period comparison of the reproductive and productive parameters before and after the use of UNISTRRAIN® PRRS was started. (SPSS statistical program, version 22.0).

RESULTS

No adverse reactions were observed in sows and piglets after ID vaccination with UNISTRRAIN® PRRS, apart from the expected papule, which returned to normal three days after vaccination (Fig 2). Pig losses expressed as the percentage of the summation of the number of stillborn piglets plus the dead piglets plus the culled pigs as well as the weaned piglet weights showed a significant improvement after starting the use of UNISTRRAIN® PRRS. The farrowing rate, the born alive piglets and the number of weaned piglets were higher when UNISTRRAIN® PRRS was used compared to the previous period with a PRRSv2 vaccine (Table 1).

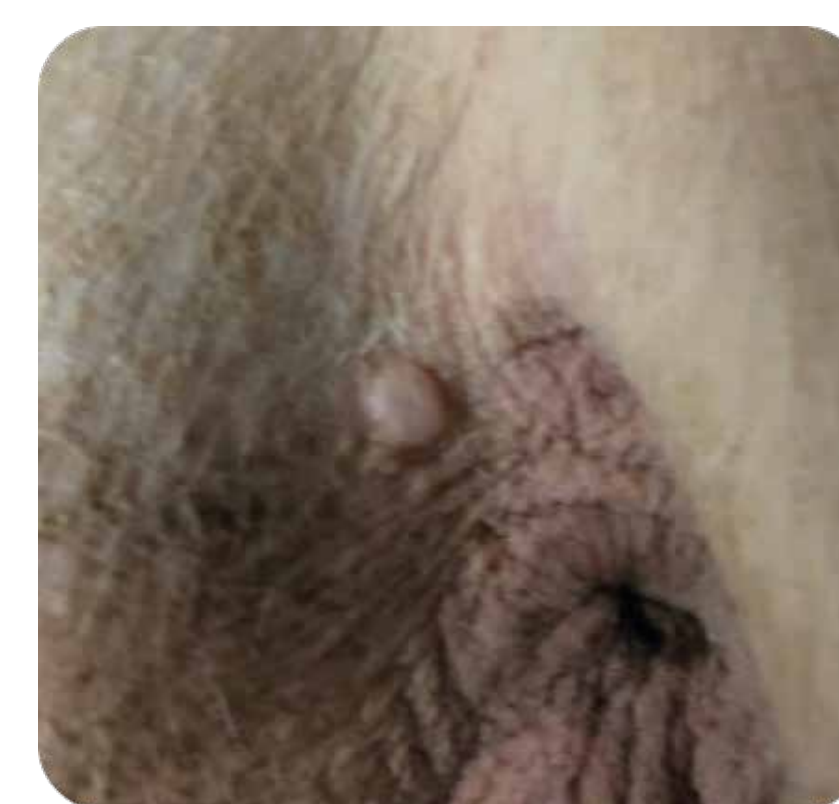


Figure 2. Observed papule in sows after intradermal vaccination with Hipradermic®

Production parameter	PRRSv2 vaccine (2018)	UNISTRRAIN® PRRS (2019)	Diff
Farrowing rate (%)	85.8±3.3 ^a	87.9±3.3 ^a	+2.1
Born alive piglets/litter	10.1±0.3 ^a	10.3±0.3 ^a	+0.2
Weaned litters/sow/year	2.4±0.03 ^a	2.5±0.1 ^a	+0.1
Weaned piglets/sow/year	23.7±0.9 ^a	24.7±1.6 ^a	+1
Pig losses (%)	11.1±3.3 ^a	9.2±3.3 ^b	-1.9
Weaned piglet weight (at 25 days old) (kg)	6.8±0.3 ^a	7.4±1.04 ^b	+0.6

Table 1. Comparison of a 1-year period before and after the use of UNISTRRAIN® PRRS. ^{a,b} different superscripts indicate statistically significant differences ($p \leq 0.05$).

DISCUSSION AND CONCLUSIONS

In the same production system, UNISTRRAIN® PRRS was shown to be a useful tool for the control of PRRSv 1+2 field infections, increasing reproductive and productive parameters. It is well known that the ORF5 homology between the field isolates (PRRSv 1 and 2 in this case) and vaccine strain (PRRSv1 in this case) is not always a good predictor of the degree of protective immunity conferred by neither the vaccine selection (2). This field study showed the cross-protection conferred by UNISTRRAIN® PRRS to be a more effective measure compared to the PRRSv2 vaccine previously used in a co-infection situation. Future studies should be performed to collect more production data on animals of all ages after the long term use of UNISTRRAIN® PRRS on this co-infected farm.

REFERENCES

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