

# FIELD SAFETY AND EFFICACY OF UNISTRAIN® PRRS AGAINST TYPE 2 PORCINE REPRODUCTIVE AND RESPIRATORY SYNDROME VIRUS (PRRSV2) IN COMMERCIAL PIG HERDS IN THAILAND

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## INTRODUCTION

PRRSV affects swine herds, causing a huge economic impact worldwide. Although PRRSV1 is predominant in Europe, genotypes PRRSV1 and PRRSV2 are both disseminated worldwide, in single infected or co-infected herds.

The criteria for MLV vaccine selection should be based on the shorter duration of vaccine virus shedding and the broader heterologous protection [1]. Safety and heterologous protection continue to be the main concerns when using PRRS MLV vaccines. Variable results are observed in terms of heterologous protection under field conditions. The objective of this study was to evaluate the safety and efficacy of UNISTRAIN® PRRS on Thai swine farms with an active PRRSV2 infection.

## MATERIALS AND METHODS

This study was carried out from April to December 2018 on 16 farrow to finish farms [500 to 12,000] sows' census in Thailand. All farms were positive for PRRS and had recorded clinical problems including respiratory distress. PRRSV2 was detected in all of them by PCR. Selected animals were vaccinated with UNISTRAIN® PRRS intramuscularly (IM: 2ml) or intradermally (ID: 0.2 ml). Vaccination was performed in 1,900 gilts; 600 vaccinated ID and 1,300 IM, 11,528 sows; 4,298 vaccinated ID and 7,230 IM and 29,345 piglets; 21,881 vaccinated ID and 7,464 IM.

Safety was evaluated in all sows and piglets for 14 days after vaccination, based on the monitoring of skin redness, breath increase, feed intake (FI) reduction and mortality (Table 1). The efficacy of UNISTRAIN® PRRS was evaluated in groups of 250 sows on Farm 1 and Farm 2 that previously carried out PRRSV2 vaccination. Efficacy evaluation was based on comparative productive parameters, 4 months before and after vaccination with UNISTRAIN® PRRS. The parameters evaluated were: farrowing and abortion rates, birth weight, pre-weaning mortality and average daily gain (ADG) of their offspring (Table 2).

## RESULTS

No severe adverse reactions were observed in any vaccinated pigs. Vaccinated pigs with skin redness (2/42,773) and FI reduction (3/42,773) returned to normality three days after vaccination without any treatment. In addition, a significant improvement in the reproductive performance was exhibited on Farm 1 and Farm 2.

## CONCLUSIONS

In this case, UNISTRAIN® PRRS was shown to be safe and effective in gilts, sows and piglets, controlling PRRSV2 clinical problems, reducing the abortion rate and pre-weaning mortality and increasing ADG and the farrowing rate. Therefore, this MLV vaccine should be regarded as a strategic tool in the control of PRRS heterologous infections.

**Table 1.** UNISTRAIN® PRRS safety evaluation in gilts, sows and piglets.

Animal groups	Skin redness	Breath increase	FI reduction	Mortality
Gilt (ID)	0/600	0/600	0/600	0/600
Gilt (IM)	0/1,300	0/1,300	0/1,300	0/1,300
Sow (ID)	0/4,298	0/4,298	0/4,298	0/4,298
Sow (IM)	0/7,230	0/7,230	3/7,230	0/7,230
Piglet (ID)	0/21,881	0/21,881	0/21,881	0/21,881
Piglet (IM)	2/7,464	0/7,464	0/7,464	0/7,464

**Table 2.** Comparative reproductive parameters 4 months before and after UNISTRAIN® PRRS vaccination

Parameter	Farm 1		Farm 2	
	Before	After	Before	After
Farrowing rate (%)	78.0 <sup>a</sup>	92.0 <sup>b</sup>	80.0 <sup>a</sup>	87.0 <sup>a</sup>
Abortion rate (%)	3.0 <sup>a</sup>	0 <sup>b</sup>	7.0 <sup>a</sup>	1.0 <sup>b</sup>
Pre-weaning mortality (%)	13.12 <sup>a</sup>	5.13 <sup>b</sup>	11.51 <sup>a</sup>	6.14 <sup>b</sup>
Birth weight (kg)	0.95 <sup>a</sup>	1.35 <sup>b</sup>	1.08 <sup>a</sup>	1.21 <sup>b</sup>
ADG (g/day)	205.83 <sup>a</sup>	275.0 <sup>b</sup>	209.17 <sup>a</sup>	264.58 <sup>b</sup>

Note: different letters (a, b) within the same row represent significant differences ( $p < 0.05$ )

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## REFERENCES

[1] Madapong A *et al.*, 2017. Arch. Virol. 162, 139–146.