

# Improved sow performance in pig farms of heterologous PRRSV infection after sow vaccination with type 1 PRRS MLV vaccine (UNISTRAIN® PRRS)



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## INTRODUCTION

Reproductive failures caused by porcine reproductive and respiratory syndrome virus (PRRSV) infection are closely associated with high economic losses in the porcine industry. The first PRRSV was detected in North America (type 2) in 1987 (Collins et al., 1992) and subsequently in Europe (type 1) in 1990 (Wensvoort, 1993), which showed distinct genetic characteristics between each other. In an attempt to minimize the damage caused by PRRSV, various measures (including vaccination) have been implemented in pig industry worldwide. In this study, the efficacy of a type 1 PRRS modified live virus (MLV) vaccine (Unistrain PRRS; Hipra, Spain) in sows was investigated under field conditions.

## MATERIALS AND METHODS

The trial was performed at three different conventional pig farms infected with both types of PRRSV (type 1 and type 2), and MLV vaccination against only type 2 PRRSV had been carried out. Accordingly, the type 1 PRRSV vaccine (UNISTRAIN® PRRS) was substituted for previously used type 2 PRRS vaccine. The vaccination was performed at sow with 3 month intervals. The reproductive performance was estimated based on several litter traits such as the number of piglets born per litter (TB), born alive per litter (LB), weaning piglets per litter (WP), ratio of live born piglets to total born piglets (B/A), and mortality of suckling piglets (M). The investigation was carried out for 4 months before and after the UNISTRAIN® PRRS vaccination. The mean values recorded for two different periods were compared using an Analysis of Covariance (ANCOVA).

## RESULTS

The mean ratios of live born piglets to total born piglets (B/A, %) of three different farms (H, K, and Y) during 4 months before type 1 PRRS vaccination were  $92.0 \pm 0.02$  %,  $93.7 \pm 0.01$  %, and  $91.8 \pm 0.02$  %, respectively. Improved levels of mean B/A ratio were seen over 4 months after the vaccination in all three experimental farms showing  $93.0 \pm 0.00$  %,  $94.3 \pm 0.01$  %, and  $93.3 \pm 0.03$  % (Table 1).

Percent mortalities of suckling pigs of three different farms (H, K, and Y) during 4 months before type 1 PRRS vaccination were 12.5 %, 9.1 %, and 14.0 %, respectively. Significant improvements in mortality rate of suckling pigs were observed over 4 months after the vaccination in all experimental farms; 9.2 % (H), 3.1 % (K), and 9.2 % (Y). The value of two parameters (B/A and mortality rate of suckling pigs) was statistically different before and after vaccination ( $P < 0.05$ ).

Parameters	Experimental farms					
	H Farms		K Farms		Y Farms	
	Before	After	Before	After	Before	After
No. of total born piglet (A)	12.8±0.62	11.9±0.44	12±0.79	10.8±0.54	12.8±0.18	11.8±0.66
No. of live born piglet (B)	11.8±0.45	11.1±0.40	11.2±0.80	10.2±0.36	11.8±0.17	11.0±0.50
No. of weaning piglet B/A (%)	10.3±0.59	10±0.47	10.1±0.67	10.2±0.31	10.1±0.63	10±0.67
B/A (%)	92±0.02	93±0.00	93.7±0.01	94.3±0.01	91.8±0.02	93.3±0.03
Suckling piglet's mortality (%)	12.5±0.05	9.2±0.06	9.1±0.10	3.1±0.03	14±0.05	9.2±0.07

Data was recorded over 4 months before and after vaccination, respectively.

Table 1. Comparison of reproductive parameters between before and after type PRRS vaccination (UNISTRAIN® PRRS)

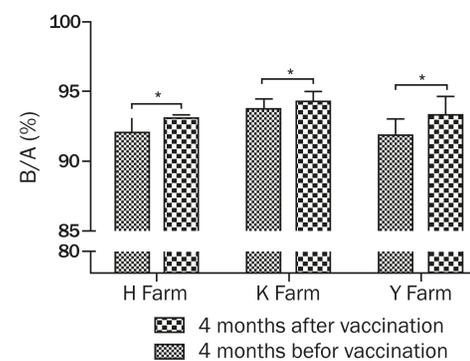


Figure 1. Mean ratio of live born piglets to total born piglets per litter before and after vaccination. Statistical results were considered to be significant when p-values were lower than 0.05 (\*).

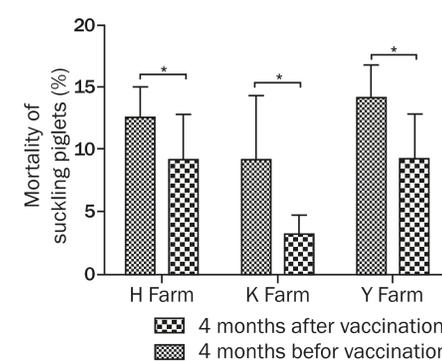


Figure 2. Mortality of suckling pigs before and after type 1 PRRS vaccination. Statistical results were considered to be significant when p-values were lower than 0.05 (\*).

## CONCLUSIONS

In this study, we confirmed that UNISTRAIN® PRRS vaccine could effectively control reproductive failures induced by PRRSV through increased ratio of live born to total born piglets and decreased mortality rate of suckling piglets.

## REFERENCES

- (1) Collins, J.E., et al., (1992): J Vet Diagn Invest, 4(2): p. 117-26.
- (2) Wensvoort, G., (1993): Vet Res, 24(2): p. 117-24.