"EFFICACY OF UNISTRAIN® PRRS ADMINISTERED INTRADERMALLY IN PIGLETS IN A MULTICENTRIC FIELD TRIAL"

Puig[1], A.; Fenech[1], M.; Perozo[1], E.; Busquet*[1], M.; March[1], R.

*Corresponding author (marta.busquet@hipra.com)

[1]HIPRA, Amer (Girona), Spain.

INTRODUCTION

The aim of this study was to evaluate the efficacy of UNISTRAIN® PRRS administered intradermally (ID) to piglets against a PRRS outbreak under field conditions.

MATERIALS AND METHODS

A multicentric, randomized and double blinded trial was carried out in 1532 animals distributed in 3 commercial farms (farms nº 1, 2 and 3) in Spain with a previous history of outbreaks of PRRS. The animals on each farm were randomly divided into two treatment groups. Group A (n=693) was vaccinated once at 3-4 weeks of age (day 0; d0) with 0.2 ml of UNISTRAIN® PRRS ($10^{3.5}$ $CCID_{50}$/animal) administered ID with a suitable device. Group B (n=839) was injected with 0.2 ml PBS (phosphate buffered saline) also ID with the same device.

All animals included in the trial were individually identified. An outbreak was considered to have occurred when at least 10% of the pigs showed respiratory symptoms and it was confirmed by PCR and serology. The parameters used to assess the efficacy of the vaccine against a PRRSV outbreak were: viraemia, lesion in PRRSV positive lungs, clinical respiratory signs, mortality, average daily weight gain (ADWG) and individual number of antibiotics administered throughout the study. Virus detection was carried out by real time RT-qPCR.

RESULTS

A clinical PRRS outbreak was confirmed on two farms (Farm 1: outbreak beginning at day 76 with a PRRSV 95% ORF5 homology; Farm 3: outbreak beginning at day 148 with a PRRSV 88% ORF5 homology) and thus only the results of these two farms are shown.

Statistical differences were observed on both farms between the vaccinated and the control group on the reduction in viraemia around and during the outbreak (farm 1: d45 and d90; farm º3: d90, d120 and d150). Statistically better mean clinical index assessment was also observed during the outbreak and punctually on days 76, 78 and 82 (farm 1) and on day 152 on farm 3. Mortality at fattening period was also statistically reduced (Table 1).

Table 1. Percentage of mortality at fattening unit during the trial.

Farm	Control	Vaccinated	p-value*
1	10.10%	5.55%	*0.046*
3	6.41%	1.92%	*0.047*

X^2 of Pearson test was used to calculate statistical differences between groups. *Differences were considered when $p<0.05$.

Percentage of lung lesions among PRRSV positive animals (farm 1: 63.9% control vs 33.3% vaccinated; farm 3: 90.0% control vs 33.3% vaccinated) and ADWG from weaning up to slaughterhouse (Table 2) were also statistically better in the vaccinated group than in the control group.

Table 2. ADWG (kg) from weaning up to slaughterhouse.

Farm	Control (mean±SD)	Vaccinated (mean±SD)	p-value*
1	0.57 ± 0.09	0.61 ± 0.08	$p<0.001^1$
3	0.51 ± 0.11	0.55 ± 0.09	0.003^2

[1]Mann-Whitney test was used to calculate statistical differences between groups. [2]ANOVA test was used to calculate statistical differences between groups.*Differences were considered when $p<0.05$.

On farm 3, a statistical decrease in the percentage of animals treated with antibiotics during the fattening period was also observed (Table 3).

Table 3. Percentage of treated animals at fattening unit per farm.

Farm	Control	Vaccinated	p-value*
1	8.6%	7.7%	0.681
3	9.6%	3.2%	*0.021*

X^2 of Pearson test was used to calculate statistical differences between groups.*Differences were considered when $p<0.05$.

CONCLUSIONS

The obtained results allow us to conclude that UNISTRAIN® PRRS administered ID with a suitable device is effective when administered according to the recommended vaccination program and it is a useful tool to reduce viraemia and the negative clinical and productive consequences of PRRSV infection in the field.

Laboratorios Hipra, S.A.
Avda. la Selva, 135
17170 Amer (Girona)
Spain

Tel (34) 972 43 06 60
Fax (34) 972 43 06 61
hipra@hipra.com
www.hipra.com