

INTRADERMAL VACCINATION WITH UNISTRAIN® PRRS IN GILTS PROTECTS AGAINST REPRODUCTIVE DISEASE AFTER A HETEROLOGOUS CHALLENGE

Simon-Grifé¹, M.; Ros¹, M.; Acal¹, L.; March¹, R.; Sitjà¹, M.; Fenech^{*1}, M.
¹HIPRA, Amer, Spain



The Reference
in Prevention
for Animal Health

INTRODUCTION

The aim of this study was to demonstrate that UNISTRAIN® PRRS applied by the intradermal route (ID) with a Hipradermic® device clinically protects gilts after a heterologous PRRSV challenge.

MATERIAL & METHODS

Sixteen gilts, clinically healthy and free from virus and antibodies against PRRS, were randomly assigned to two different groups. One group was vaccinated with UNISTRAIN® PRRS by the ID route (0.2 ml/dose; $10^{3.5}$ CCID₅₀/animal) 4 weeks before artificial insemination (AI).

Animals in the non-vaccinated group received 0.2 ml of PBS (ID). At 90 days of gestation, all the gilts were challenged by intranasal route with a heterologous pathogenic strain of genotype I of the PRRSV (Italian strain; 89% ORF5 homology; $10^{5.4}$ CCID₅₀/gilt).

RESULTS

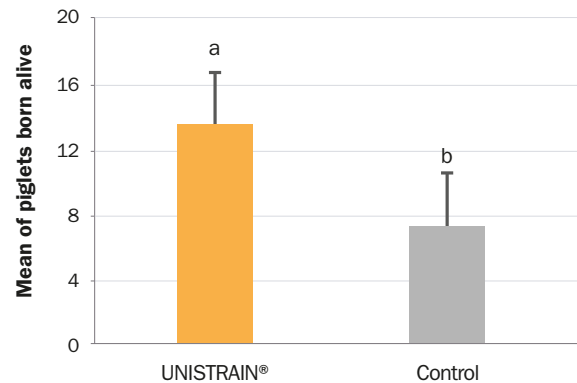
After intradermal UNISTRAIN® PRRS administration there were no adverse effects resulting from vaccination.

No premature farrowing or abortion occurred in any sow (100% farrowing rate).

Although it was not statistically different, the number of weak piglets improved in the vaccinated group (0.3 ± 0.7 piglets) vs control group (0.8 ± 1.5 piglets). Moreover, no mummies were detected in the vaccinated group (0.0 ± 0.0) whereas among the non-vaccinated litters there were some mummies died after challenge (1.0 ± 1.4).

In the vaccinated group, a clear statistical higher number of live born piglets/gilt was observed (13.4 ± 4.1) vs control group (7.3 ± 3.0).

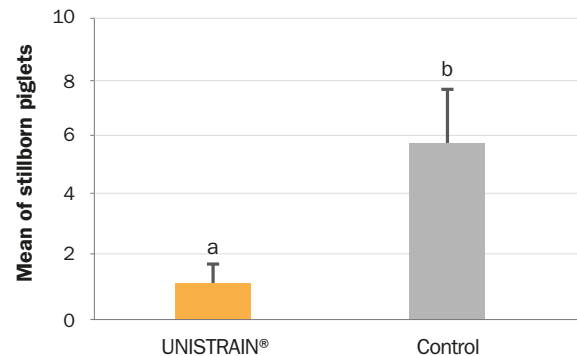
Figure 1. Piglets born alive per gilt.



Different superscript letters indicate statistically significant differences ($p < 0.05$) among groups.

Furthermore, vaccination statistically reduced the number of stillborn piglets caused by PRRS infection in the UNISTRAIN group (0.6 ± 1.1) vs control group (6.0 ± 2.4).

Figure 2. Stillborn piglets observed after challenge.



Different superscript letters indicate statistically significant differences ($p < 0.05$) among groups.

DISCUSSION

The results obtained allow us to conclude that a single vaccination of gilts with UNISTRAIN® PRRS ID using a Hipradermic® device is safe and significantly reduced reproductive failure caused by heterologous wild-type PRRS infection during gestation.