

COMBINATION OF A PRRS MODIFIED LIVE VACCINE AND A KILLED PRRS VACCINE TO ENHANCE HUMORAL IMMUNITY IN GILTS IN THE PHILIPPINES

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INTRODUCTION

Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) is a global viral pathogen causing economic losses in pigs¹. Modified live vaccines (MLV) are commonly used for initial immunization, while some veterinarians recommend adding a killed vaccine (KV) during gestation to boost immunity in sows previously vaccinated with a MLV. The combination of MLV and KV enhances neutralizing antibodies, cell-mediated immunity², and significantly improves PRRSV status in breeding herds³. In this trial, total antibodies were analyzed following the vaccination of gilts with an inactivated vaccine at the end of gestation.

MATERIALS AND METHODS

The trial was conducted in August and September 2023 on a farm located in Batangas, Philippines. In the control group, the PRRS vaccination protocol for gilts consisted of a primary and booster vaccination with a PRRS MLV (2 ml UNISTRAIN[®] PRRS, HIPRA) at 5 months of age. For this trial, a group of 10 sows was additionally vaccinated at 90 days of gestation (August 9th) with a PRRS killed vaccine (2 ml SUIPRAVAC[®] PRRS, HIPRA), which will be referred to as the SUIPRAVAC group. Serum samples were collected from individually identified gilts on August 9th (90 days of gestation), prior to vaccination and 3 weeks later (August 30th). For the control group, serum samples were collected from 8 individually identified gilts on September 8th (90 days of gestation) and 3 weeks later (September 29th). PRRS ELISA test IDEXX was done in all the serum samples and statistical analysis was performed using a linear regression with vaccine and week as factors.

RESULTS

Individual titers of gilts in SUIPRAVAC group at 90 days were 162: 2.06, 183: 1.84, 192: 1.95, 163: 1.48, 172: 1.91, 188: 0.77, 219: 2.36, 220: 1.58, 222: 1.53 and 224: 1.51 and 3 weeks later 162: 2.63, 183: 2.5, 192: 2.59, 163: 2.6, 172: 2.9, 188: 1.6, 219: 2.92, 220: 2.55, 222: 2.68 and 224: 2.28.

Individual titers of gilts in control group at 90 days were 266: 1.13, 263: 0.7, 243: 1.15, 264: 0.78, 242: 0.9, 252: 1.68, 255: 1.08 and 254: 0.35 and 3 weeks later 266: 0.98, 263: 0.66, 243: 1.03, 264: 0.82, 242: 1.08, 252: 1.6, 255: 1.11 and 254: 0.43.

Significantly (p-val: 0.001**) higher mean ELISA titres (0.82) in SUIPRAVAC[®] PRRS group 3 weeks after vaccination (Figure 2).

	SUIPRAVAC [®] PRRS		Non revaccinated	
	0 weeks	3 weeks	0 weeks	3 weeks
Date	09/08/2023	30/08/2023	08/09/2023	29/09/2023
Titers	1.7 ± 0.43	2.52 ± 0.37	0.97 ± 0.39	0.96 ± 0.35

Figure 1. Elisa titres per group

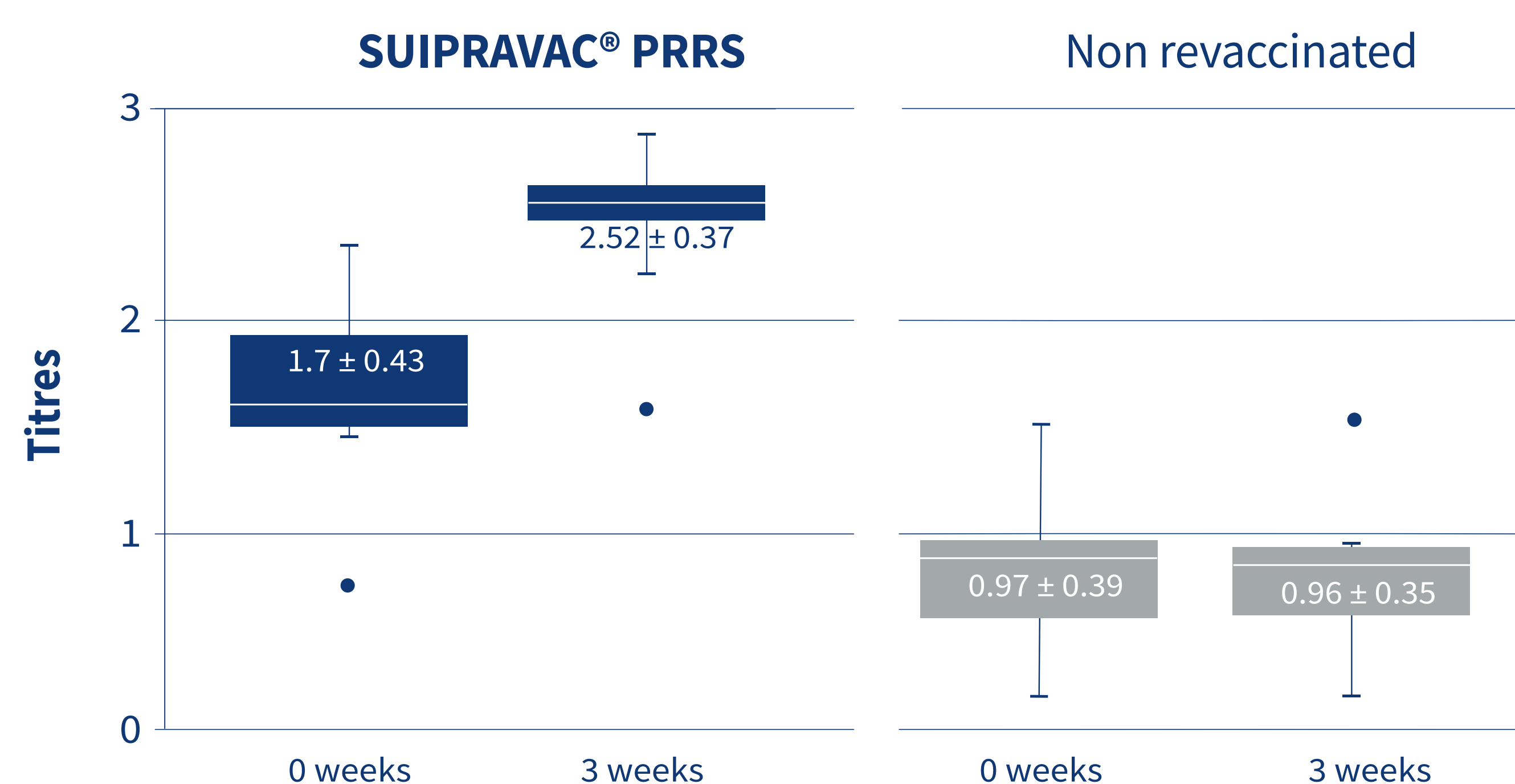


Figure 2. ELISA titres of both groups.

DISCUSSION & CONCLUSION

This trial demonstrates that using a combined program of mass vaccination with a PRRS MLV and a KV in a cycle, such as SUIPRAVAC[®] PRRS at the end of gestation, results in a stronger humoral immune response in sows at farrowing.

REFERENCES

1. Nieuwenhuis N et al. 2012. Vet Rec. 170, 225.
2. Diaz I et al. 2013. The Veterinary Journal 197: 438-444.
3. Romero S et al. The use of a killed PRRS vaccine as a complement to a modified live vaccine to achieve a stable PRRS virus status on farms, Proceedings IPVS 2022.