EFFECT OF PRRS POSITIVITY ON PRODUCTIVITY WITHIN A LARGE INTEGRATED PIG PRODUCTION SYSTEM IN EUROPE

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Introduction

Clinical disease caused by PRRS virus in breeding herds registers as having one of the biggest impacts of all swine diseases due to its direct losses with an increase of abortions, number of stillbirths, and pre-weaning mortality that eventually result in a decrease in the number of piglets weaned per sow per year. At a farm level, the productive impact of PRRS disease is not well understood owing to losses not always being so clear, especially in endemically infected swine farms. This study was conducted to quantify the productive impact of PRRS on a large swine company in Spain.

Materials & Methods

54 farms representing 92,000 sows located in different geographical swine production areas in Spain, enrolled in a PRRS control program by HIPRA. The program included a multiple approach to PRRS disease control and so mitigated the disease's impact and therefore improved farm productivity. 7 out of 54 farms were selected for the PRRS productive impact quantification. PRRS-positivity per farm was confirmed monthly when the PCR result from tongues in farrowing rooms or blood testing of 30 piglets at weaning from January-June 2022 was positive.

Weekly productive data of this same period from all farms was collected and analysed comparing positive to negative weeks.

The following key performance indicators (KPI) were calculated: total born piglets/litter, total born alive piglets/litter, stillbirth piglets/litter and wean-piglets/litter. The comparison for each KPI between positive and negative weeks was performed using a linear regression model.

Results

In total, 26 weeks of productive data was analysed from the 7 farms.

Statistical differences were observed between productivity on PCR positive weeks compared to PCR negative weeks in terms of total born alive piglets per litter (13.42 vs 15, p-val: <0.001) and weaned piglets per litter (11.88 vs 12.33, p-val: 0.014). However, no statistical differences were observed within total born piglets per litter and stillbirth piglets per litter (15.47 vs 15.9, p-val: 0.089 and 1.26 vs 1.20, p-val: 0.63) respectively. Table 1.

This lack of significant difference could be explained by the non-standard criteria used to collect these parameters on farms.

Table 1. Farm productive difference based on the selected KPI performance between PCR positive and negative weeks. Bold KPI showed significant differences between groups (positive: red, negative: green) (Linear regression model; p<0.05)

	PCR negative weeks	PCR positive weeks	Difference (%)	P-val
Total born piglets/litter	15.9	15.47	0.43	0.089
Total born alive piglets/ litter	**15**	**13.42**	**1.58**	**<0.001**
Stillbirth piglets/litter	1.20	1.26	0.06	0.63
Wean-piglets/litter	**12.33**	**11.88**	**0.45**	**0.014**

Discussion & Conclusion

The 0.45 (11.88 vs 12.33) weaned piglet increase between PCR PRRS positive and PCR negative weeks and the price of €37.00/ weaned piglet in the Spanish market (SIP consultors, September 2022) could provide a gross benefit of €16.65/litter for the whole group due to the lack of virus circulation in phase 1. The economic benefit of PRRS stability is a key point to consider in the design of PRRS control strategies and the ROI evaluation of the actions implemented such as biosecurity reinforcement measures and breeder's or piglet´s vaccination.

References

Torrents, D., Miranda, J., Gauger, P. *et al.* Effect of PRRSV stability on productive parameters in breeding herds of a swine large integrated group in Spain. *Porcine Health Management* 7, 21 (2021).