

IMMUNOCRIT ASSAY IS A TOOL TO EVALUATE THE MANAGEMENT OF MATERNALLY DERIVED IMMUNITY IN SOW FARMS

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INTRODUCTION

Colostrum intake is crucial for piglet survival and a critical point in the health management of swine farms. Thus, it is the main known transmission mechanism of maternally derived immunity (MDI). The immunocrit assay has been suggested as a cost effective method to quantitatively evaluate maternal antibodies in piglets after colostrum intake. Therefore, this assay might be a tool to support veterinary practitioners' investigation of MDI failures and to decipher its role in lactation performance. The objective of this study was to evaluate the immunocrit values of farms classified as having good, intermediate and bad pre-weaning mortality.

MATERIALS AND METHODS

Twenty four Spanish farrow-to-weaning pig farms were recruited and classified by swine practitioners as farms with theoretically good, intermediate and bad MDI status based on its pre-weaning mortality. One piglet per sow was bled after colostrum intake (n=27-42/per farm). The immunocrit assay was performed and calculated as previously described in the literature (Vallet 2013) and an immunocrit value below of 10% was considered as a marker of deficient colostrum ingestion at piglet level (Ferrari 2014).

RESULTS

The average and coefficient of variation of immunocrits farm values were ranging 13.2-23.9% and 19.4-38.26% respectively and no significant differences were observed between the experimental groups. The percentage of piglets with immunocrit values below 10% (PI<10) ranged 0-23.5% and it was significantly lower (Wilcoxon test; p=0.0023) in those farms with good (95%CI: 6% (3.7-8.3)) and intermediate (95%CI: 5.3% (3.3-7.4)) than bad MDI status (95%CI: 17.9% (12.5-23.2))(Figure 1).

DISCUSSION & CONCLUSION

The size of subpopulations of piglets with very low MDI (PI<10) was associated with pre-weaning mortality; in particular, it was discriminating good and intermediate from bad farms. In conclusion, immunocrit might be a useful tool for swine practitioners to investigate immunization failures and its relationship with pre-weaning mortality.

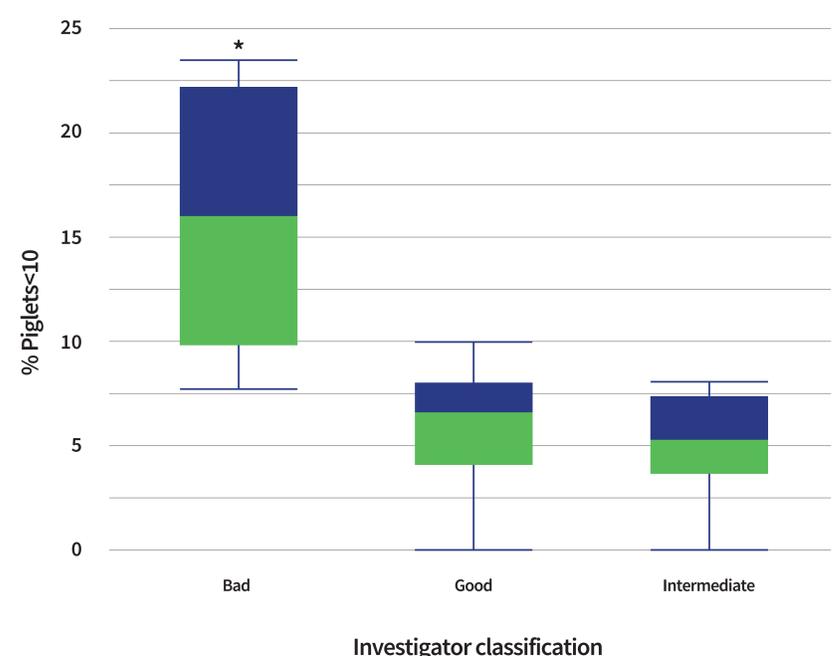


Figure 1. Box plot of the percentage of piglets with immunocrit values less than 10%. Results are distributed depending on the estimated MDI status of the herd. The asterisk indicate a statistically significant difference versus other groups (Wilcoxon test, p<0.01)

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