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TITLE

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

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CONTENT

Background and Objectives

Colostrum intake is crucial for piglet survival and a critical point in the health management of swine farms because it is the main known transmission mechanism of maternal 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 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.

Material & 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 literature and an immunocrit value below of 10% was considered as a marker of deficient colostrum ingestion at piglet level.

Results

The average and coefficient of variation of farm immunocrits 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 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)).

Discussion & Conclusion

The size of subpopulations of piglets with very low MDI (PI<10) was the only parameter associated with pre-weaning mortality but only 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.