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TITLE

APPLYING SALMONELLA VACCINATION AT THE TOP OF A UK PIG PRODUCTION PYRAMID

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CONTENT

Background and Objectives

Salmonella is a widespread pathogen that infects a variety of animals, including man. Reducing prevalence in pig farms contributes to minimising contamination at slaughter, improving the safety of meat and offal for human consumption, as the slaughter process cannot effectively remove high levels of contamination. UK studies have shown sow vaccination has been significantly effective in reducing Salmonella prevalence. However, most interventions, including vaccination, are unlikely to be cost-effective on most pig farms. Additionally, the flow of pigs onto farms can continuously reintroduce Salmonella, mitigating the benefits of interventions. It has been proposed that applying interventions at the top of a production pyramid might improve cost-effectiveness.

Material & Methods

This study used a single production pyramid, following a closed multiplier farm and 2-3 representative farms at each of the following levels: gilt mating unit and surplus breeding stock, breeding, rearing, and finishing farms. Following baseline visits to each farm, sows and piglets in the multiplier herd were vaccinated against *S. Typhimurium*. All farms were then followed for 18 months with between 2-5 sampling visits, depending on farm type. Pooled and individual floor faeces and environmental samples were collected at each visit, ensuring representation of prevalence and serovars present in each pig stage.

Results

At the initial visit to the multiplier farm, Salmonella prevalence in pooled samples was 38.2%, with mainly monophasic Salmonella Typhimurium (MST) detected, with a few *S. Rissen* isolates. The prevalence of MST steadily reduced to <10% and the predominant serovar became *S. Rissen*. Similar results were seen in the farms directly supplied by the multiplier, and some reduction in MST was observed in other farms in the pyramid.

Discussion & Conclusion

This study indicates that of multiplier farm vaccination was effective as a Salmonella reduction strategy and also provided substantial benefits to the pyramid.