VACCINATION WITH ENTERISOL® SALMONELLA T/C REDUCES SALMONELLA ENTERICA COLONIZATION OF ILEOCECAL LYMPH NODES IN GROWING PIGS

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Introduction

Salmonellosis in pigs may have both production and food safety impacts. In this study, lymph node colonization was compared between a new, bivalent Salmonella vaccine and a baseline vaccine program.

Materials and methods

Pigs were placed into a Salmonella positive wean to finish barn, 288 pens and ~6600 pigs. Pigs were vaccinated with Enterisol Salmonella T/C® (44 pens, 1100 pigs), or a baseline vaccination program (remaining pigs). Pigs selected for harvest were placed by treatment onto two separate semitrailers (one/group). Swab samples were collected from each treatment at loading (3/group), the common loading chute (1/chute) and transport trailers (8/trailer) prior to loading, and lairage pens prior to pig arrival (four/pen). Pigs were harvested by treatment after a cleaning of facilities. Baseline pigs were harvested two hours after arrival; vaccinated pigs two hours later. Blood (171 Enterisol, 166 control) was collected after stunning, lymph nodes (153 Enterisol Salmonella T/C, 137 control), removal of viscera sets, chilled diaphragm (172 Enterisol Salmonella T/C, 171 control) and carcass swabs (342; Speci-sponge) the following day. Lymph nodes were frozen on dry ice and held for concurrent semi-quantitative culture. Serum and meat juice samples were tested by ELISA (Idexx). Swabs and lymph nodes were cultured via selective enrichment at ISU-VDL.

Results

All farm pre-load samples and transport samples were culture negative. All lairage samples (7/7) and one carcass swab were positive. Enterisol pigs were positive for Salmonella enterica at a significantly lower rate than baseline pigs (12% vs 63%, $p<0.0001$). Enterisol pigs had a higher seroprevalence rate in meat juice (75% vs 42%, $p<0.001$) but not serum (98% vs 95%, $p=0.26$). There was a two log reduction in CFU in positive vaccinated vs control lymph nodes (103 vs 105).

Conclusion

Vaccination with Enterisol Salmonella T/C® significantly reduced colonization of pigs with Salmonella enterica species compared to baseline control vaccination.