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Comparative safety of two *Salmonella choleraesuis* vaccines in swine

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Introduction and Objective

Salmonellosis in swine has been shown to significantly reduce performance¹. Two commercial modified-live swine vaccines have documented effect against multiple *Salmonella* serotypes^{2,3,4,5}. Enterisol® SC-54 (Boehringer Ingelheim Vetmedica, Inc.) has a wide safety margin⁶. This blinded clinical study was conducted to evaluate the comparative safety of Enterisol® SC-54 and Argus® SC/ST (Intervet Inc.) oral *Salmonella choleraesuis* vaccines.

Materials and Methods

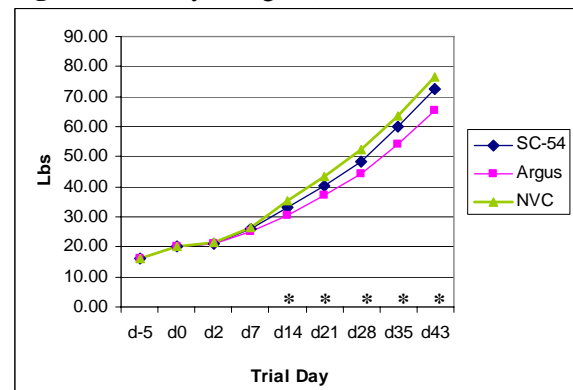
Sixty *Salmonella* fecal culture and serum ELISA negative pigs, approximately 3 weeks of age, were assigned to 3 treatment groups (n=20). Group 1 was a non-vaccinated control (NVC). Group 2 was vaccinated with Enterisol® SC-54 (SC-54). Group 3 was vaccinated with Argus® SC/ST (Argus). Pigs were housed and managed by an independent research firm (VRI, Ames, IA, USA). On Day 0, the SC-54 and Argus groups were vaccinated according to the manufacturers' labeling. Rectal temperatures were measured on Days -2, -1, at the time of vaccination (Day 0), and at 4, 8, and 12 hours after vaccination. Rectal temperatures were then measured daily from Days 1 through 23 (with the exception of Days 10 and 12), and on Days 28 and 43. Pigs in all groups were individually weighed on Days -5, 0, and 2, weekly from Days 7 through 35, and on Day 43. Statistical analysis of data was performed using a one-way ANOVA (JMP 5.1, SAS Institute, Inc., Cary, NC, USA).

Results and Discussion

Pigs vaccinated with Argus® SC/ST showed significantly higher rectal temperatures compared to non-vaccinated controls at nine of 26 post-vaccination time points (p<0.05). The Enterisol® SC-54 vaccinated group's rectal temperatures were higher than controls one of 26 time points, significantly lower than Argus® SC/ST pigs (p<0.05). The SC-54 group had no adverse weight gain effects based upon equivalent periodic body weights (Fig 1) and

average daily gain (ADG) compared to the non-vaccinated control group. In contrast, the Argus group showed significantly lighter body weights than non-vaccinated controls (p<0.05) from Days 14 through 43 (Fig 1). The Argus group's ADG was significantly reduced compared to controls during the periods of Days 7 to 14, Days 28 to 35, and Days 35 to 43 (p<0.05).

Figure 1 – Body Weight (Lbs)



* Denotes trial dates on which the Argus® group had significantly lighter mean body weights (p<0.05) than non-vaccinated controls.

Conclusions

Enterisol® SC-54 *Salmonella choleraesuis* vaccine proved to be safe in pigs. Argus® SC/ST repeatedly increased pyrexia and diminished weight gain.

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