
28 In-feed or In-water Antibiotic Administration Did Not Influence the Fecal Prevalence and Antimicrobial Susceptibility Profiles of Salmonella in Piglets.

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A total of 1,296 weaned piglets were used in a 35-d study to assess the impact of in-feed vs in-water administrations of chlortetracycline (CTC) and or tiamulin on prevalence and antimicrobial resistance (AMR) profiles of *Salmonella enterica*. Piglets were allocated to 48 pens (27 pigs per pen) and pens were assigned randomly to six treatment groups: control (no antibiotic), in-feed CTC, in-water CTC, in-feed tiamulin, in-water tiamulin, and in feed CTC and tiamulin. Fresh fecal samples were collected randomly from 5 of 27 piglets from each pen on days -7, 0 (pre-treatment), 7, 14 (treatment), 21, and 28 (post-treatment). *Salmonella* isolation and identification were done by enrichment, plating on selective medium, and species confirmation of putative colonies by PCR. Antimicrobial susceptibility and resistance of the isolates were determined using premade antibiotic panel (Sensititre™ CMV3AGNF and BOPO7F) and results were interpreted based on the Clinical and Laboratory Standards Institute guidelines. All *Salmonella* isolates were identified as serotype Typhimurium. The overall prevalence of *Salmonella* was 3.0% (43/1,440) with no treatment effect ($P > 0.05$). All isolates were resistant (100%) to tetracycline and tiamulin. Additionally, the isolates were resistant to ampicillin (100%), streptomycin (100%), sulfisoxazole (100), ciprofloxacin (95.4%) and nalidixic acid (74.4%). Only a few isolates were resistant to trimethoprim/sulphamethoxazole (4.7%), ceftriaxone (7.0%), and ceftiofur (7.0%). PCR assays indicated the presence of tetB gene in all isolates, while 11 (25.6%) and 4 (9.3%) isolates were positive for tetD and tetA genes, respectively. Neither in-feed nor in-water administration of

CTC or tiamulin impacted the fecal prevalence and antimicrobial susceptibility of *Salmonella* in nursery piglets.

Keywords: *Salmonella*, antibiotic, AMR, in-feed, in-water, chlortetracycline, tiamulin