



EFFECTS OF ORIGINAL XPC™ ON *SALMONELLA* PREVALENCE AND LOAD IN BROILERS DURING A *SALMONELLA* TYPHIMURIUM CHALLENGE

Researchers¹ challenged broilers with *Salmonella* Typhimurium at 7 d of age and tested the effects of feeding a control diet vs. a diet containing Original XPC on *Salmonella* prevalence and load.

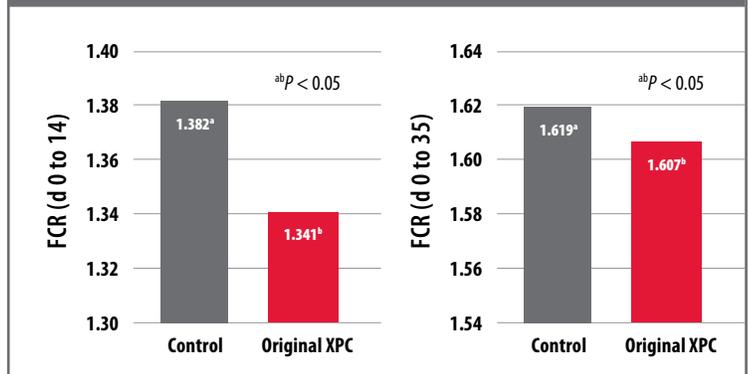
RESEARCH SUMMARY

- 550 day-old male Cobb broilers were raised in floor pens.
 - Birds were fed salinomycin as a coccidiostat (d 0 to 28) but no other antibiotics were included in the diet.
 - Birds received one of two dietary treatments (11 replicate pens per treatment; 25 chicks per pen).
 - Treatments consisted of:
 - T1: Control (No XPC)
 - T2: XPC at 2.5 lb/ton in the starter diet (d 0 to 14) and 1.25 lb/ton in the grower (d 14 to 28) and finisher (d 28 to 35) diets.
 - Diets contained 1370, 1400, and 1430 kcal/lb metabolizable energy and 20.0, 18.5, and 16.5% crude protein in the starter, grower, and finisher diets, respectively.
- On d 7, bird numbers were adjusted to 23 birds/pen. All birds were then orally gavaged with 10⁹ CFU of a nalidixic acid resistant strain of *Salmonella* Typhimurium.
- Performance (gain and feed efficiency) was measured through d 14 and d 35.
- Fecal samples were collected from 3 birds per pen on d 14.
- Cecal samples were harvested from 3 birds per pen on d 35.
- Both fecal and cecal samples were analyzed for *Salmonella*.

RESULTS

- Feed conversion (FCR) was improved for birds supplemented with XPC ($P < 0.05$; Figure 1) through d 14 and d 35.

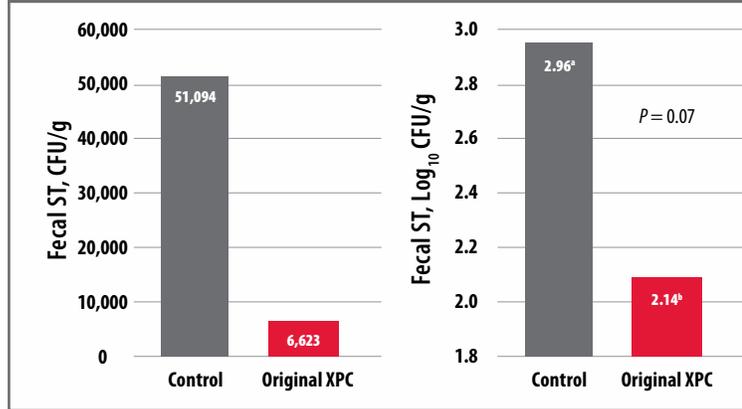
FIGURE 1. FEED CONVERSION (FCR) THROUGH D 14 OR D 35



RESULTS (continued)

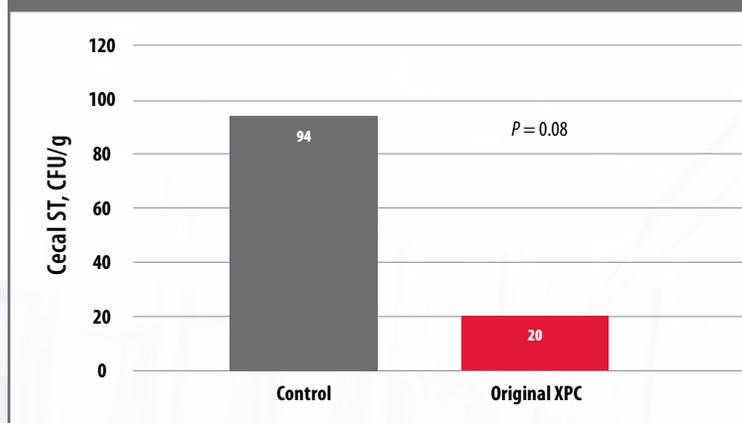
- On d 14, prevalence of *Salmonella* in fecal samples was numerically lower in birds supplemented with XPC compared to birds receiving the control diet (79% vs. 94%, respectively).
- A significant reduction ($P = 0.07$; Figure 2) in fecal *Salmonella* load was observed on d 14 when birds were supplemented with XPC. The reduction (0.8 log) in *Salmonella* in birds supplemented with XPC is equivalent to an 87% reduction in *Salmonella* (CFU per gram of fecal content).

FIGURE 2. LOAD OF *SALMONELLA* TYPHIMURIUM (ST) IN FECAL SAMPLES COLLECTED ON D 14 (IN CFU/G OR LOG₁₀ CFU/G)



- By d 35, the *Salmonella* load recovered in cecal samples was low. However, birds supplemented with XPC had 79% less *Salmonella* than Control birds (Figure 3).

FIGURE 3. LOAD OF *SALMONELLA* TYPHIMURIUM (ST) IN CECAL SAMPLES COLLECTED ON D 35



CONCLUSIONS

- Birds supplemented with XPC had significantly improved FCR compared to birds receiving the control diet.
- Prevalence and load of *Salmonella* was lower in birds supplemented with XPC compared to birds receiving the control diet.

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If you would like more information on this study, please contact your local Diamond V representative.

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