EFFECTS OF FEEDING DIAMOND V ORIGINAL XPC™ ON REDUCING SALMONELLA PREVALENCE, NUMBERS, VIRULENCE, AND ANTIBIOTIC RESISTANCE IN SAMPLES TAKEN FROM COMMERCIAL POULTRY

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Field trials were conducted to determine the effects of feeding Original XPC on reducing *Salmonella* in commercially raised poultry. A total of 264 commercial poultry houses from 21 companies were monitored; 132 houses were fed a diet that contained 1.25 kg/MT of Original XPC (**XPC**), and 132 were fed a typical diet (**CON**). Ceca samples were harvested in the processing plant from commercial broilers and turkeys and cloaca swabs were taken from egg laying hens in the commercial house. A total of 12,046 samples, ceca and cloaca, were evaluated for *Salmonella* prevalence and numbers with a total of 31,288 colonies tested for virulence and antibiotic resistance at Iowa State University. In all poultry species evaluated, feeding XPC significantly reduced ($P < 0.0001$) *Salmonella* prevalence and numbers compared to CON by 54% and 87% respectively. *Salmonella* virulence was measured by a human cell culture invasion assay. Virulence was significantly lowered ($P < 0.0001$) in isolates from XPC birds compared to CON birds (0.23% vs. 1.04%, respectively), a 78% reduction. Antibiotic resistance was significantly lowered ($P < 0.0001$) in *Salmonella* isolates from XPC birds compared to CON (florfenicol: 2.7% vs. 11.9%; ceftiofur: 2.0% vs. 9.8%; enrofloxacin: 0.8% vs. 4.3%, respectively). The addition of XPC in the diet resulted in a significant reduction in both *Salmonell*a prevalence and numbers, as well as reducing virulence and antibiotic resistance. These data suggest that the addition of Original XPC to the diet is an effective, all- natural in feed intervention for *Salmonella* in commercial poultry.

Key Word: Antibiotic Resistance