



OAHN PROJECT SUMMARY

Project Title: Evaluating the prevalence of antimicrobial resistance in *Salmonella*, *E. coli* and *Campylobacter* isolates obtained from Ontario small poultry flocks

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End date: June 1, 2019

Executive Summary

A prospective surveillance study of small poultry cases submitted by veterinarians to the Animal Health Laboratory was conducted between October 2015 and September 2017. From each submission a pooled cecal sample was obtained and tested for the presence of fecal *E. coli*, *Salmonella*, and *Campylobacter*. From each positive sample 3 isolates were selected and tested for antimicrobial susceptibility by using a broth microdilution technique.

A total of 433 *E. coli* isolates (358 chicken, 27 turkey, 24 duck, and 24 game bird), 15 *Salmonella* isolates (9 chicken, 3 turkey, and 3 duck), and 176 *Campylobacter* isolates (141 chicken, 21 turkey, 6 duck, and 8 game bird) were recovered.

Moderate (15-39% of isolates) to high ($\geq 40\%$ of isolates) proportion of *E. coli* isolates were resistant to tetracycline, streptomycin, sulfonamides, and ampicillin. *Salmonella* isolates were most frequently resistant to streptomycin, tetracycline, and sulfonamides. A high frequency of resistance to tetracycline was observed in the *Campylobacter jejuni* isolates from chickens (77%) and turkeys (100%), and in the *Campylobacter coli* isolates from turkeys (50%) and game birds (40%).

The high prevalence of resistance to antimicrobials frequently used to treat poultry bacterial diseases underlines the need of judicious antimicrobial use in small flocks. Our results can be used as a benchmark to measure changes in antimicrobial resistance in enteric bacteria of Ontario small poultry flocks.