

Research Notes

ARM & HAMMER



Virulence Screening Confirmed the Prevalence of Subclinical APEC levels in Broilers

STUDY¹ OVERVIEW

- Gastrointestinal tracts (GITs) from 60 broilers representing 10 different flocks/farms were collected.
- The GIT samples were assessed visually to determine “good” or “poor” group qualification by the integrators’ technical specialists.
- *E. coli* strains were isolated from the GITs and screened for presence of 5 *E. coli* virulence associated genes: *hlyF*, *iss*, *ompT*, *iroN* and *iutA*.
- Strains of *E. coli* are considered to be avian pathogenic *E. coli* (APEC) if they possess at least 2 virulence associated genes.
- *E. coli* strains were categorized by the number of virulence genes they possessed and compared between groups.

RESULTS

- The ratio of APEC containing 2-3 virulence associated genes and 4-5 virulence associated genes was nearly equal among the good GITs (Fig. 1).
- In the poor GITs, the vast majority of APEC contained 4-5 virulence associated genes (82.6%) (Fig. 2).

CONCLUSION

- This study demonstrated that there may be an association between the presence of virulence associated genes and broiler gut health.

FIGURE 1: Relative isolate proportions by gene category (good GITs)

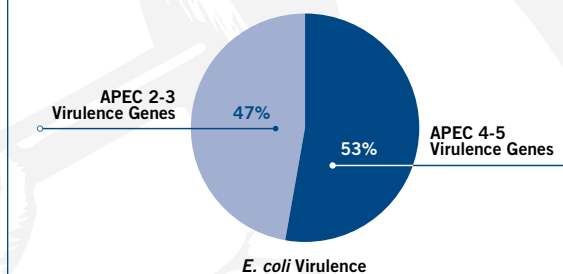
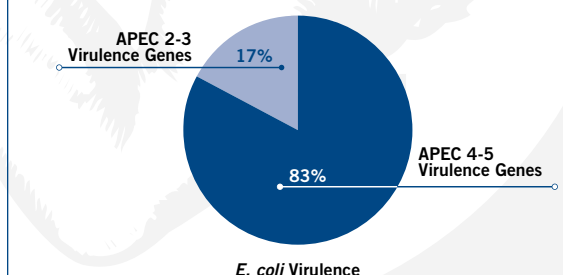


FIGURE 2: Relative isolate proportions by gene category (poor GITs)



¹ Hutchison E, Anderson S, Vang E, Wujek R. Internal ARM & HAMMER™ Review, data on file. 2017.

