

TITLE: CHARACTERIZATION OF *Escherichia coli* STRAINS ISOLATED FROM PSITACIDES AND PASSERIFORMES ISOLATED FROM DOMESTIC AND WILD BIRDS

AUTHORS: MATEUS, L.M.¹; MENCK, M.F.^{*1}; JUSTINO, L.¹; SANTOS, B.Q.¹; SOUZA, M.¹; CICERO, C.E.¹; BAPTISTA, A.A.S.¹.

INSTITUTION: ¹Avian Medicine Laboratory, Department of Preventive Veterinary Medicine, State University of Londrina - UEL (Rodovia Celso Garcia Cid – Pr 445 Km 380, Campus Universitário, Londrina – PR).

Birds are the second biggest group of pet animals in Brazil, permitting a lot of interaction between humans and birds. The birds belonging to the orders of the Passeriformes and Psittaciformes are the most sought after species to be kept as pets. In stressful circumstances these birds may hold *Escherichia coli* in their microbiome, a bacterium that may inflict disease to its' host or be a reservoir of antimicrobial resistance genes. The objective of this study is to assess *Escherichia coli* isolated from the feces of pet- and wild birds on their resistance to antibiotics and their capability of forming a biofilm. Fecal samples were collected of 44 birds, 19 Passeriformes and 25 Psittaciformes, and brought cooled to the laboratory. Of these samples 1 gram of feces was incubated in Brain Heart Infusion (1:10) after which the inoculum was brought on MacConkey agar plates and again incubated. Lactose fermenting colonies were selected for further biochemical testing. The colonies with an *E. coli* profile (TSI- acid/acid, SIM- positive indol, citrate- negative, urea- negative and sorbitol- positive) were cultivated and kept at -20°C for further processing. The found *E. coli* isolates were subjected to antibiogram test to determine their resistance pattern. The used antibiotics were: Tetracyclin (TET-30 µg), Amicacin (AMI-30 µg), Tobramycin (TOB-10µg), Cefalotin (CFL-30µg), Cefalexin (CFE-30µg), Norfloxacin (NOR-10µg), Ciprofloxacin (CIP-5µg), Enrofloxacin (EN-5µg), Sulfametoxazol (SUT-1,25/23,75µg), Fosfomicin (FOS-200 µg) and Florfenicol (FLF-30 µg). The *E. coli* isolates that showed resistance to two or more of the used antibiotics were considered multi resistant. The isolated were also submitted to a biofilm producing test whereby the quantitative method with crystal violet on a 96-wells plate of polystyrene and TSB-broth was used. The positive control was *E. coli* strain EAEC 042 and the negative control was *E. coli* strain HB 101. Among the 15 isolated *E. coli* strains 13% (2/15) showed a multi resistant profile. The results obtained from the biofilm producing test were that 20% (3/15) of the isolates was able to slightly produce biofilm and 30% (3/15) of the isolated was able to moderately produce biofilm. The results of this study show a high prevalence (34%) of *Escherichia coli* isolated from feces of clinically healthy birds. Although it is possible to find a profile of high sensitivity to the used groups of antibiotics, there were isolates that presented themselves with a multi resistant profile in combination with the moderate capability of producing a biofilm. These findings deserve attention because there is a risk these isolates can be transmitted from birds to humans.

Keywords: Antibiogram, Biofilm, *Escherichia coli*, MRD, Zoonosis.