

TITLE: ANTIMICROBIAL RESISTANCE IN *Escherichia coli* ISOLATED FROM FREE LIVING PIGEONS (*Columba livia*) IN THE SOUTHERN BRAZIL.

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ABSTRACT:

Free living pigeons (*Columba livia*) are potential reservoirs for pathogenic bacteria that can be spread through feces to humans and other animals. Among these bacteria, some *Escherichia coli* strains may be responsible for human diseases' outbreaks such as intestinal and urinary tract infections, neonatal meningitis and septicemia. Moreover, many studies have reported the resistance of these microorganisms to several classes of antibiotics, which impacts on diseases' control. Thus, the objective of this study was to evaluate the resistance profile of *E. coli* isolated from pigeons. Cloacal swabs were collected from 100 apparently healthy pigeons (SISBIO 47313) from São Leopoldo and Taquara, Rio Grande do Sul, and Criciúma, Santa Catarina, both states at South Brazil. The samples were kept in *Stuart* (Absorve[®]) transport media under refrigeration until analysis. The swabs were seeded in blood and MacConkey agar plates and incubated in aerobiose for 24 h at 37 °C. Eighty three bacterial colonies were identified as *E. coli* according to gram staining, morphology and biochemical tests. The isolates were submitted to antimicrobial susceptibility testing by the Kirby-Bauer method. Antibiotic disks (NewProv, Brazil) with ampicillin (AMP, 10 µg), chloramphenicol (CL, 30 µg), gentamicin (GEN, 10 µg), streptomycin (STR, 10 µg), tetracycline (TET, 30 µg), enrofloxacin (ENO, 10 µg), cefoxitin (CFO, 30 µg), imipenem (IPM, 10 µg), amikacin (AMI, 30 µg), sulfonamides (SUL, 300 µg), cefotaxime (CTX, 30 µg) and ciprofloxacin (CIP, 5 µg), were used and *E. coli* ATCC 25922 was used as a control. The results indicated that 77.59% (56/83) of the samples had a multiresistant profile as they were resistant to three or more classes of antibiotics. The aminoglycosides had the lowest efficiency against the isolates, with 89.16% (74/83) of them resistant to streptomycin and 55.42% to amikacin (46/83). Cefotaxime was the antibiotic with the greatest capacity of inhibition, with 93.98% (78/83) of sensitive isolates. There was greater resistance to antibiotics in samples isolated from Santa Catarina than Rio Grande do Sul. The multidrug resistance demonstrates that pigeons may have contact with antibiotics residues or with bacteria of human or animal origin, evidencing contact with other species and possible a public health risk.

Keywords: *C. livia*, *E. coli*, antibiotics and multiresistance.

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