

Title: ANTIMICROBIAL RESISTANCE AND VIRULENCE OF AVIAN PATHOGENIC *ESCHERICHIA COLI* ISOLATED FROM BACKYARD CHICKEN

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Abstract

The creations of backyard chicken are the major activity performed by small farmers in Brazil. Sanitary problems are the main limiting factor of these creations, which may contribute for the diseases spread to poultry and also to the consumers. Among the causing bacterial agents of diseases in birds, Avian Pathogenic *Escherichia coli* (APEC) causes different kinds of extraintestinal systemic infections in these hosts, collectively called, colibacilosis. Recently, the zoonotic potential of APEC and multidrug-resistant strains have increased significantly. The aim of this study was to investigate the virulence-associated gene and antimicrobial resistance in 72 potential APEC strains isolated from feces and oropharynx of backyard chickens in the region of Ribeirão Preto – SP. It was analyzed the susceptibility of 17 antibiotics, and the results showed that all isolates tested were resistant to at least one antimicrobial and the most of them have presented a multidrug-resistance profile. Moreover, 62 isolates were resistant to 3 or more antimicrobials, representing a percentage of 86.1%. The highest levels of resistance were to cefalotin (81.9%), tetracycline (70.8%), fosfomycin (70.8%) and streptomycin (63.9%). To investigate the presence of virulence-associated genes in the isolates, was performed multiplex polymerase chain reactions to test 17 virulence factors. All isolates have presented *iss* gene, related to serum resistance; *ompT* gene, related to proteolytic proteins production; and *hlyF* gene, related to toxin production. The frequency of virulence genes was as follows: 66.7% *cvaC*, 87.5% *iroN*, 88.9% *iutA*, 88.9% *sitA*, 29.2% *tsh*, 58.3% *iucC*, 83.3% *traT*, 72.2% *iucD*, 81.9% *fimH*, 38.9% *fyuA*, 77.8% *irp2*, 16.7% *vat*, 15.3% *astA* and 1.4% *papC*. These informations demonstrate that the most strains are potentially pathogenic. Addition to the high rate of multidrug resistance found, these data suggest that backyard chicken can be a reservoir for the pathogenic and multiresistents strains to humans and animals.

Key words: APEC, antimicrobial resistance, virulence genes, backyard chicken, *Escherichia coli*

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