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ISOLATION AND PHENOTYPIC CHARACTERIZATION OF MULTIDRUG RESISTANCE NON-*E. COLI* ENTEROBACTERIACEAE FROM POULTRY IN WESTERN ALGERIA: RESISTANCE TO MANY FIRST-LINE ANTIMICROBIAL AGENTS

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ABSTRACT

This study aimed to evaluate the antimicrobial resistance to the commonly used antibiotics with particular attention to the first-line antimicrobial agents and to investigate the multidrug resistance levels of non-*E. coli* Enterobacteriaceae from poultry in Western Algeria. Enterobacteriaceae culture was done on MacConkey agar and their identification was determined by AP20E kit, *Salmonella*-positive isolates serotyping were performed according to Kauffmann-White-Le Minor's scheme. For susceptibility testing, the Kirby-Bauer disk diffusion method to a panel of 14 antibiotics was used according to Clinical and Laboratory Standards Institute (CLSI) guidelines. A total of 141 non-*E. coli* Enterobacteriaceae isolates (53 *Proteus spp.*, 42 *Enterobacter spp.*, 11 *Citrobacter spp.*, 10 *Klebsiella spp.*, 8 *Serratia spp.*, 6 *Salmonella spp.*, 4 *Yersinia spp.*, 4 *Edwardsiella spp.*, 2 *Hafnia spp.* and one *Providencia spp.*) were isolated in this study. Four different serotypes of *Salmonella* strains were identified in this work. The predominant isolates exhibited high levels of resistance to various first-line antibiotic classes, notably betalactams, quinolones. Only the serotype *Salmonella Kentucky* was resistant to ciprofloxacin. All the strains isolated in this study were resistant to at least one antibiotic. Overall, 130 out of 141 isolates (92,19 %) demonstrated multidrug resistance (MDR). The dramatic increase in the rates of resistance to various first-line antimicrobial agents and the rapid spread of MDR in non-*E.coli* Enterobacteriaceae isolates of poultry origin can have major implications for public and animal health that should be approached urgently and pro-actively.

Keywords: multidrug resistance, non-*E. coli* enterobacteriaceae, first-line antimicrobial agents, poultry, Algeria.