I prefer:

☒ ORAL presentation

□ POSTER presentation

**ANTIBIOTIC RESISTANCE OF ENTEROHEMORRHAGIC AND ENTEROTOXIGENIC *ESCHERICHIA COLI* ISOLATED IN CATTLE IN THE MEKONG DELTA, VIETNAM**

Nguyen Khanh Thuan1\*, Bui Thi Le Minh1, Ngo Van Thong2

\*lead presenter

1nkthuan@ctu.edu.vn, Faculty of Veterinary Medicine, College of Agriculture, Can Tho University, Vietnam

2 Department of Animal Science, Faculty of Agriculture and Rural Development, Kien Giang University, Vietnam

**Abstract:**

**Background/Objective:** The presence of Enterohemorrhagic and Enterotoxigenic *Escherichia coli* in cattle's digestive tracts is a significant concern. These *E. coli* serotypes not only cause disease in cattle but also severe disease in humans. Moreover, the increasing antibiotic resistance of *E. coli* has led to significant difficulties in treatment for animals and humans. This study aimed to determine the antimicrobial susceptibility and antibiotic-resistance genes of those *E. coli* serotypes isolated from cattle in the Mekong Delta, Vietnam, with the hope of informing strategies to mitigate this growing threat to animal and human health.

**Methods:** A total of 50 EHEC strains and 97 ETEC strains isolated from cattle in the Mekong Delta were examined for antimicrobial susceptibility with thirteen antibiotics by disk infusion method, including cefuroxime, amoxicillin/clavulanic acid, ampicillin, gentamicin, streptomycin, amikacin, colistin, doxycycline, ofloxacin, ceftazidime, chloramphenicol, levofloxacin, tetracycline. The PCR method was used to detect ten antibiotic-resistance genes in those strains, including *blaampC*, *blaTEM*, *aadA1*, *dfrA*, *strA*, *mcr-1*, *tetA*, *sulII*, *qnrA*, and *cat1*.

**Results:** EHEC and ETEC in cattle showed high sensitivity to most examined antibiotics. ETEC strains were significantly sensitive to amikacin and doxycycline (83.51%) and resistant against ampicillin (60.82%). EHEC strains were the highest sensitive to amikacin and levofloxacin (98.00%) and the highest resistant to colistin, ampicillin, and tetracycline (68.00%, 66.00%, and 64.00%). The PCR results indicated that gene *tetA* was detected at the highest rate in ETEC and EHEC, with 69.07% and 68.00%, respectively. The popular combined gene pattern was *tetA*+*sulII* in ETEC, and *tetA*+*sulII*, *tetA*+*sulII*+*blaTEM* in EHEC.

**Conclusion:** The study on EHEC and ETEC strains exhibited high antibiotic resistance and showed diverse antibiotic-resistant genes, which shows their potential risks to public health in the Mekong Delta. Therefore, official strategies should be considered to prevent the transmission of those strains between animals and humans.

**Keywords:** antibiotic resistance, cattle, EHEC, ETEC, Mekong Delta.