I prefer:

□ ORAL presentation

□ POSTER presentation

**Assessment of antimicrobial resistance in *Campylobacter* spp. isolated from poultry from conventional and antibiotic-free farming**

Giulia Laura Felix Paz1\*, Thomas Salles Dias2, Maria Helena Cosendey de Aquino2

\*lead presenter

1giulialfpaz@gmail.com, Veterinary Public Health Department (MSV) - Veterinary Faculty - Universidade Federal Fluminense, Brazil

2Veterinary Public Health Department (MSV) - Veterinary Faculty - Universidade Federal Fluminense, Brazil

**Abstract:**

**Background/Objective:** *Campylobacter* spp. is a microorganism frequently present in poultry’s intestinal microbiota and the main cause of gastroenteritis in humans worldwide, being associated with complications such as Guillain-Barré syndrome. While the antimicrobial usage in animal husbandry brought advantages to production, the increasing levels of antimicrobial resistance pose a threat to global health. Free-range and antibiotic-free poultry farming are relevant trends, considering the consumers’ concerns over animal welfare and change in attitude towards conventional farming. We assessed the antimicrobial resistance in *Campylobacter* spp. isolated from poultry from conventional and antibiotic-free farming in the South and Southeast of Brazil, to determine if the farming method influences the resistance patterns.

**Methods:** Strains were isolated from caecal content and carcasses from poultry raised in conventional (n=35) and antibiotic-free (n=23) farming, then identified by multiplex PCR assay. Isolates were screened for resistance to antibiotics by Disk Diffusion Method. The presence of the gene *tetO* and Thr-86-Ile *gyrA* mutation was investigated by PCR and MAMA-PCR assays. Data was analysed using Fisher’s Exact test.

**Results:** 40% of the strains from conventional and 4% from antibiotic-free farming were identified as *Campylobacter coli,* and 60% and 96% as *Campylobacter jejuni*, respectively. Antimicrobial resistance to Amoxicillin with Clavulanic Acid, Ciprofloxacin, Chloramphenicol, Enrofloxacin, Erythromycin, Gentamicin, and Tetracycline observed in strains from poultry conventionally reared were respectively 9%, 91%, 3%, 89%, 17%, 0%, and 46%, while the resistance in strains obtained from antibiotic-free flocks were 0%, 61%, 0%, 52%, 0%, 0%, and 22%. The gene *tetO* and Thr-86-Ile *gyrA* mutation were detected in 77% and 94% of the strains from conventional and 26% and 61% from antibiotic-free farming.

**Conclusion:** Strains obtained from antibiotic-free flocks were significantly less resistant to the antibiotics tested (p=0.0078). This observation can help us understand the influence of different farming methods on the antimicrobial resistance problematic and their impacts in public health.

**Keywords:** antibiotic-free farming, antimicrobial resistance, *campylobacter*, conventional production, poultry