I prefer:

□ ORAL presentation

~~□~~ POSTER presentation

**Detection of *Escherichia coli* bacteria resistant to antimicrobial substances in meat-processing facilities in the eastern part of Slovakia**

Dančová Nikola1\*, Gregová Gabriela1, Szabóová Tatiana1, Regecová Ivana2

\*lead presenter

1Nikola.Dancova@student.uvlf.sk, Department of public veterinary medicine and animal welfare, University of Veterinary Medicine and Pharmacy in Košice, Komenského 73, 041 81 Košice, Slovakia

2 Department of food hygiene, technology and safety, University of Veterinary Medicine and Pharmacy in Košice, Komenského 73, 041 81 Košice, Slovakia

**Abstract:**

**Background/Objective:** Meat obtained from food-producing animals has the potential to harbor many foodborne pathogens, such as *Escherichia coli*. The public's health is at risk due to the emergence and spread of *E. coli*, which is resistant to multiple antibiotics. The aim of this study is investigation of isolates from meat-processing facilities and the confirmation of *E. coli*'s antimicrobial resistance through phenotypic and genotypic expression.

**Methods:** PCR was used to identify species obtained from meat-processing facilities in the eastern part of Slovakia. The sensitivity of *E. coli* isolates to selected antimicrobial substances was determined using a modified microdilution method by Miditech system. The PCR method was employed to identify genetic markers of resistance to selected antimicrobial agents.

**Results:** Resistance to ampicillin, tetracycline, cefuroxime, ampicillin + sulbactam, ciprofloxacin, and cotrimoxazole was discovered. There have also occasionally been reports of resistance to ceftazidime, tigecycline, cefotaxime, and ertapenem. We also confirmed multiresistance. The genes coding for resistance to tetracyclines and ciprofloxacin were confirmed by PCR in *E. coli* isolates with phenotypic resistance to tetracycline and ciprofloxacin. Since research is still ongoing, let's test the isolates for the presence of other genes encoding resistance to antimicrobials.

**Conclusion:** The findings suggest that food-producing animals are a possible source of antibiotic-resistant *E. coli*, which can spread throughout the food chain, enter the body of the consumer, and endanger his health. Therefore, further research into this issue is necessary in order to improve the biological safety and quality of produced food as much as possible.

**Keywords:** *Escherichia coli*, antimicrobial substances, meat-processing facilities