

CONTAMINATION OF POULTRY ENVIRONMENT WITH *CAMPYLOBACTER* SPP. AND SIGNIFICANCE FOR COLONISATION OF BROILERS

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Abstract. Various animal species, wild birds, rodents and pets are the main source of *Campylobacter* contamination in broiler farms. However, little is known about the ability of these bacteria to survive outside the host and their role in the colonisation of broilers. Therefore, in this study we aimed to identify the sources of *Campylobacter* in poultry farm environment and their significance for broiler colonisation. For this purpose, *Campylobacter* spp. were isolated from broilers and their environment (litter, water of puddle, concentric zones, tap water) by both direct inoculation on mCCDA selective medium and selective enrichment into Exeter broth. *Campylobacter* isolates were identified to the species level by multiplex polymerase chain reaction. The genetic diversity of *Campylobacter jejuni* strains isolated from broilers and the environment was examined by PCR-based restriction fragment length polymorphism analysis of PCR amplified portion of the flagellin-A (*flaA*) gene. The results revealed that 28.5% out of 752 samples were contaminated with *Campylobacter* spp. The *flaA*-RFLP analysis of 263 *C. jejuni* isolates revealed 21 different *flaA* genotypes. Each broiler flock had specific *Campylobacter* genotypes, which had not been transmitted to other broiler flocks reared in the same building.

Studies have shown that *Campylobacter* can survive in poultry environment. They can be transferred from the environment into broiler houses by shoes, cloths and wildlife. Therefore, strict bio-security and hygiene rules must be implemented at the farm level to prevent spread of this pathogen. Additionally, hostile environment for pathogenic bacteria must be established in the areas around a broiler house.

Keywords: *Campylobacter jejuni*, poultry, RFLP, campylobacteriosis