Title Occurrence of fastidious *Campylobacter* spp. in fresh meat and poultry using an adapted cultural protocol

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Citation International Journal of Food Microbiology, Volume 150, Issues 2-3, 1 November 2011, Pages 171-177

Keywords Meat; Fastidious *Campylobacter*; Cultural protocols; *C. concisus*; *C. mucosalis*

Abstract

This study used an adapted cultural protocol for the recovery of fastidious species of *Campylobacter*, to gain a more accurate understanding of the diversity of *Campylobacter* populations in fresh meats. Chicken (n = 185), pork (n = 179) and beef (n = 186) were collected from supermarkets and butchers throughout the Republic of Ireland. Samples were enriched in Campylobacter enrichment broth for 24 h under an atmosphere of 2.5% O_2, 7% H_2, 10% CO_2, and 80.5% N_2. The enriched samples were then filtered onto non-selective Anaerobe Basal Agar supplemented with lysed horse blood using mixed ester filter membranes. Isolates were identified by both genus and species-specific PCR assays and biochemical testing. The incidence of campylobacters on beef (36%) was significantly higher than on pork (22%) or chicken (16%), and far exceeds previously reported prevalence levels. The method was successful in recovering 7 species of *Campylobacter*, including the fastidious spp. *C. concisus* and *C. mucosalis*, from chicken meat, and 10 species, including *C. concisus*, *C. curvus*, *C. mucosalis*, *C. sputorum*, and *C. upsaliensis*, from minced beef. The isolation of *C. concisus* and *C. upsaliensis* from meat in this study is of particular significance, due to their emerging clinical relevance. The results of this study confirm that the diversity of *Campylobacter* species on fresh meats is greater than previously reported and highlights the bias of cultural methods towards the recovery of *C. jejuni*.