examined quantitatively. All 862 isolates were identified by a species-specific m-PCR assay and 182 isolates were further characterized by ERIC-PCR. *Arcobacters* were isolated from one or more sampling places on 96.4% of the carcasses, with the foreleg and the chest area as the two most contaminated sites. Furthermore, *Arcobacter cryaerophilus* was the most common species. Chilling decreased the number of positive carcasses, but did not eliminate all *Arcobacters*. Direct isolation revealed that only a few carcasses were contaminated with *Arcobacters* on foreleg and/or chest at levels higher than 10^2 cfu/isolation. Fourteen genotypes were simultaneously present on carcasses from different herds slaughtered on the same day, which may indicate cross-contamination. *Arcobacters* were present in 21% of the pork samples taken at retail, but contamination levels did not exceed 100 cfu/g. Characterization of the *A. butleri* and *A. cryaerophilus* isolates indicated an additional contamination during processing at retail.

**P214**

**Biochemical Properties and Protein Profiles as Compared to Molecular Typing of *Campylobacter concisus***

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*Campylobacter concisus* is a fastidious hydrogen-requiring bacterium of the human oral cavity. It is known to be associated with gingivitis and periodontitis, as well as being a potential aetiological agent of enteritis in children and the immunocompromised. *C. concisus* is characterised by low biochemical activity, therefore its conventional phenotypic detection is difficult. In a study of clinical isolates from children suffering from mild to severe bloody diarrhoea at the Royal Children’s Hospital (RCH) in Melbourne, 19 *C. concisus* strains were primarily identified according to Lior’s biotyping scheme. Two *C. concisus* type strains ATCC 51561 and ATCC 51562 and a *C. mucosalis* strain ATCC 43264 were also included. PCR amplification methods were used to confirm the identity of *C. concisus* clinical isolates in addition to assigning them into two molecular groups (genospecies). Antibiotic resistance of *C. concisus* RCH isolates to cephalothin and to nalidixic acid was detected using standard disc diffusion techniques. All *C. concisus* strains were resistant to nalidixic acid while only 14% of the strains were resistant to cephalothin. SDS-PAGE analysis of whole cell lysates (WCL) and outer membrane proteins (OMP) indicated the presence of four different patterns in the protein profiles of *C. concisus* WCL and more than five different OMP profile patterns. Although both the WCL and OMP profiles of *C. concisus* strains were heterogeneous, in general they were easily distinguishable from the protein profiles of the *C. mucosalis* type strain, indicating the heterogeneity of *C. concisus* as a species. However as yet, we cannot establish any correlation between the protein profiles of WCL and the OMP groups of the two genospecies, nor is there any correlation between the protein profile groups and the antibiotic resistant patterns of *C. concisus*.

**P215**

**Role of Processing and Retail Conditions in the Occurrence of *Arcobacter* spp. in Chicken Meat**

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Several reports have highlighted the importance of *Arcobacters* as emerging foodborne pathogens. The present study was an initial part conducted to determine the occurrence of *Arcobacter* spp. in chickens and chicken meat retailed at the wet markets and supermarkets in Serdang area in Selangor state, Malaysia. The samples consisted of 40 cloacal swabs taken from live chickens awaiting slaughter at wet markets and 50 chicken parts from various stalls at wet markets (warm, freshly slaughtered chicken meat) and a number of supermarkets (chilled chicken meat). Each cloacal swab was streaked onto mCCDA (Oxoid) incorporated with CAT selective supplement (Oxoid). The rinse water of each chicken part was enriched in *Arcobacter* broth (Oxoid); after incubation, each enriched culture was plated onto CAT agar (mCCDA with CAT supplement, Oxoid) using filter method of Steele and McDermott. All plates were incubated at 30°C under aerobic condition for up to 8 days. The *Arcobacter* isolates were identified by biochemical tests. *Arcobacters* were not isolated from chickens (0%) but were isolated from 33% and 5% of the warm meat and chilled meat respectively. It was suggested that *Arcobacters* do not colonize intestinal tracts, that possibly they came from water, processing environment and equipment. Further work in this study would look into the occurrence of *Arcobacters* in wet markets environment. Previous work in the same wet markets found *Campylobacter* on the poultry carcasses and processing environment. It is also likely that the retailing conditions in the wet markets caused cross-contamination of the chicken meat as they were placed openly on the counters compared to those retailed in the supermarkets where they were properly packed and placed in refrigerated retail cabinets.

**P216**

**Cultivability and Viability of Enterohepatic and Gastric *Helicobacter* spp. in Water: Implications for Transmission**

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The fact that *Helicobacter pylori* resides in the human stomach and has a low cultivability in water have been two of the main arguments for discarding rivers and drinking water distribution systems as possible vectors for the transmission of this gastric pathogen. On the other hand, most enteric bacterial pathogens, such as *Campylobacter* spp., are well-known for being able to use water as a vehicle of transmission and have accordingly longer cultivability times in water. Taking advantage of the fact that there are both gastric and enterohepatic *Helicobacter* spp., we have devised the following hypothesis: if only enterohepatic *Helicobacter* spp. are waterborne agents, then these bacteria should demonstrate longer cultivability and viability in water when compared to gastric *Helicobacter* spp. As such, we have exposed 13 strains from eight different species of *Helicobacter* to water and tracked their survival by standard plating methods and membrane integrity assessment. The species that survived for longer in water was *H. pylori*, whereas *Helicobacter felis* appeared to be the most sensitive. There is no correlation between the enterohepatic nature of *Helicobacter* spp. and an increased survival time in water, which implies that the role of water in transmission is likely to be similar for all species. This is the first work where the cultivability and viability of non-*pylori* *Helicobacter* spp. in water has been assessed.

**P217**

**A New Molecular Method for the Discrimination of All *Arcobacter* Species**

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The phenotypic identification of *Arcobacter* spp. is problematic. Up to now, the molecular techniques described for the characterization of