



# Persistence and survival of *Campylobacter* in turkey and poultry meat after chilling process at slaughterhouse and after refrigerated or frozen storage

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**Persistence and survival of *Campylobacter* in turkey and poultry meat after chilling process at slaughterhouse and after refrigerated or frozen storage**

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Few quantitative data exist on *Campylobacter* contamination level of turkeys in France and also on the impact of chilling process at slaughterhouse and storage conditions during shelf life. This contamination level of turkey meat from thirteen flocks and chicken meat from twelve flocks was determined before and after chilling process (twelve animals per batch) in eleven French slaughterhouses of different regions. After chilling, fillets with skin were stored under various atmosphere and temperature conditions during their shelf life (height batches of twelve chickens and height batches of twelve turkeys). The diversity of the isolates was appreciated by multiplex PCR for species identification and for a part of them by pulsed-field gel electrophoresis PFGE after *Sma*I restriction for strain diversity and survival. The prevalence of *Campylobacter* at slaughterhouse is very high depending on the batch from 8% to 100% for turkeys and from 75% to 100% for chickens. The level of contamination showed a great variability intra and inter-flocks with an average of 1.8 log UFC/g for turkey and 2.5 log UFC/g for chicken. No influence of the region was revealed. The impact of chilling process (dynamic, static or dynamic/static) is not significant. The reduction rate varied from 0 to 94% depending on the batch. The survival rate at refrigerated temperature was significantly lower for samples under air conditions (after seven days) than under vacuum package (after fourteen days). After storage at -18°C during one month, *Campylobacter* survive in 71% of the samples. 17% of the positive frozen samples have more than 1 log/g of *Campylobacter*. There is a great predominance of *C. jejuni* in turkey's flocks and for chicken's flocks it could be either *C. jejuni* or *C. coli* depending on the slaughterhouse. For a specific slaughterhouse, we distinguish fifteen PFGE profile types among the seventy four strains with same types before and after chilling. The same PFGE profiles are also obtained before and after storage under vacuum package or frozen conditions: no selection of particularly resistant strain is detected. Proteomic analysis of different strains process-resistant or not showed differences in metabolism.

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