

Title Study of *Arcobacter* spp. contamination in fresh lettuces detected by different cultural and molecular methods

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Abstract

Arcobacters are considered potential emerging food and waterborne pathogens. However, there is no data on the presence of *Arcobacter* spp. in fresh vegetables. Therefore the objective of this research was to study the presence of *Arcobacter* spp. in fresh lettuces.

Fifty fresh lettuces purchased from different local shops in Valencia (Spain) were analyzed. The assay was performed simultaneously by cultural and molecular methods. Isolates were identified by real-time, multiplex PCR and restriction fragment length polymorphism analysis of PCR-amplified DNA fragment (PCR-RFLP). Finally, all the isolates were genotyped using the randomly amplified polymorphic DNA (RAPD-PCR) method.

Arcobacter sp. was detected in 10 of the 50 samples (20%) by real-time PCR, being *A. butzleri* the unique detected species by mPCR. The detection levels obtained by conventional PCR (7 samples/50, 14%) were slightly lower. These seven samples were found to be positive also by culture isolation. All 19 obtained isolates were identified as *A. butzleri* by multiplex PCR and PCR-RFLP. Great genetic heterogeneity among the isolates was observed by RAPD-PCR profiling.

To our knowledge, this is the first study in which *Arcobacter* spp. is detected in fresh vegetables such as lettuces. Although these foods are generally considered safe, given the large quantities consumed and the fact that further cooking is absent, lettuce could be a source of Arcobacters of public health concern.