

## Detection of *Arcobacter* and *Helicobacter pylori* Contamination in Organic Vegetables by Cultural and Polymerase Chain Reaction (PCR) Methods

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**Abstract :** The most demanded organic foods worldwide are those that are consumed fresh, such as fruits and vegetables. However, there is a knowledge gap about some aspects of organic food microbiological quality and safety. Organic fruits and vegetables are more exposed to pathogenic microorganisms due to surface contact with natural fertilizers such as animal manure, wastes and vermicompost used during farming. It has been suggested that some emergent pathogens, such as *Helicobacter pylori* or *Arcobacter* spp., could reach humans through the consumption of raw or minimally processed vegetables. Therefore, the objective of this work was to study the contamination of organic fresh green leafy vegetables by *Arcobacter* spp. and *Helicobacter pylori*. For this purpose, a total of 24 vegetable samples, 13 lettuce and 11 spinach were acquired from 10 different ecological supermarkets and greengroceries and analyzed by culture and PCR. *Arcobacter* spp. was detected in 5 samples (20%) by PCR, 4 spinach and one lettuce. One spinach sample was found to be also positive by culture. For *H. pylori*, the *H. pylori* VacA gene-specific band was detected in 12 vegetable samples (50%), 10 lettuces and 2 spinach. Isolation in the selective medium did not yield any positive result, possibly because of low contamination levels together with the presence of the organism in its viable but non-culturable form. Results showed significant levels of *H. pylori* and *Arcobacter* contamination in organic vegetables that are generally consumed raw, which seems to confirm that these foods can act as transmission vehicles to humans.

**Keywords :** *Arcobacter* sp., *Helicobacter pylori*, Organic Vegetables, Polymerase Chain Reaction (PCR)

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