

**Title** Antimicrobial effect of acidified sodium chlorite, sodium chlorite, sodium hypochlorite, and citric acid on *Escherichia coli* O157:H7 and natural microflora of fresh-cut cilantro

**Author** Ana Allende, James McEvoy, Yang Tao and Yaguang Luo

**Citation** Food Control, Volume 20, Issue 3, March 2009, Pages 230-234

**Keywords** Cilantro quality; Fresh-cut; Microbial growth; Pathogen; Sanitizer; Washing

#### **Abstract**

Fresh-cut cilantro is particularly susceptible to microbial growth and, therefore, use of an effective sanitizer on this product is of great importance. The objective of this study was to evaluate the efficacy of different sanitizing treatments on reducing *Escherichia coli* O157:H7 populations, aerobic mesophilic bacterial, yeast and mould counts on fresh-cut cilantro. Cut cilantro was treated with sodium hypochlorite (SH) at 0.2 g L<sup>-1</sup> free chlorine and acidified sodium chlorite (ASC) at 0.1, 0.25, 0.5 and 1 g L<sup>-1</sup>, along with the components of ASC, i.e., citric acid (CA) at 6 g L<sup>-1</sup> and sodium chlorite (SC) at 1 g L<sup>-1</sup>. In the present study, it was found that SH inactivated, at maximum, 1–1.3 log cfu g<sup>-1</sup> of background or pathogenic microflora present on cut cilantro. However, reductions of more than 3 log cfu g<sup>-1</sup> were observed after washing with 1 g L<sup>-1</sup> of ASC. Moreover, when lower concentrations of ASC were used (0.25 and 0.5 g L<sup>-1</sup>), microbial populations were reduced by about 2 log cfu g<sup>-1</sup>. SC was as effective as ASC at 1 g L<sup>-1</sup> in reducing aerobic mesophilic bacteria and *E. coli* O157:H7 populations, although it was not as effective as ASC in reducing yeast and mould populations.