

Title Optimization and evaluation of a decontamination step with peroxyacetic acid for fresh-cut produce

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Citation Food Microbiology, Volume 26, Issue 8, December 2009, Pages 882-888

Keywords Minimal processing; Peroxyacetic acid; Decontamination; Native microflora

Abstract

Since several disadvantages are associated with the use of sodium hypochlorite as a decontamination agent, the attention for alternative agents such as peroxyacetic acid (PAA) is increasing. In this study the effectiveness of PAA to remove the native microflora was tested in four types of fresh-cut vegetables: grated carrots, fresh-cut white cabbage, iceberg lettuce and leek. Furthermore, the influence of varying PAA concentrations (0, 25, 80, 150 and 250 ppm) and varying contact times (1, 5 and 10 min) was described by means of a linear model. The efficiency of PAA to remove the native flora was highly dependent on the type of fresh-cut produce: the highest microbial reductions were obtained for carrots (0.5–3.5 log cfu/g) and white cabbage (0.5–3.5 log cfu/g) followed by iceberg lettuce (0.4–2.4 log cfu/g). The obtained efficiency was the lowest for fresh-cut leek (0.4–1.4 log cfu/g). Furthermore, all the treated samples, regardless of the type of vegetable and the contact time and concentration of the PAA treatment, were acceptable for consumption.