

Title Microbial reduction and storage quality of fresh-cut cilantro washed with acidic electrolyzed water and aqueous ozone

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Citation Food Research International, Volume 37, Issue 10, 2004, Pages 949-956

Keywords Acidic electrolyzed water; Aqueous ozone; Fresh-cut; Cilantro; Sequential wash

Abstract

Efficacy of decontamination treatments in reducing microbial populations on cilantro and in improving its storage quality was investigated. Fresh-cut cilantro samples were washed with one of the five treatments: tap water, acidic electrolyzed water (AEW), aqueous ozone, chlorinated water, and aqueous ozone followed by AEW (sequential wash). Treated cilantro was packaged in polyethylene bags prepared with films of selected oxygen transmission rate of $6200 \text{ mL}/(\text{d m}^2)$ and stored at $0 \text{ }^\circ\text{C}$ for 14 days. The total aerobic bacterial population, total enterobacteriaceae, electrolyte leakage and sensory qualities were examined every 4 days. Test results indicated that the sequential wash is effective in initial microbial count reduction. This treatment also maintained low microbial growth during storage. However, the higher electrolyte leakage may indicate cilantro tissue damage in this treatment. Using AEW alone also resulted in moderate control of aerobic bacterial growth during storage. Ozone treatment, on the other hand, achieved the highest overall quality of cilantro during storage and also maintained the typical cilantro aroma.