

Title Sanitation of fresh green asparagus and green onions inoculated with Salmonella

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Citation Czech Journal of Food Sciences - UZEI, 27(6) p. 454-462, 2009.

Keywords *Allium cepa*; Onions; *Asparagus officinalis*; *Salmonella typhimurium*; Biological contamination; Chlorine; Hydrogen peroxide; Lactic acid; Disinfection; Antimicrobials; Duration

Abstract

The absence of good agricultural and manufacturing practices in the production and postharvest handling of fresh produce, such as green asparagus or green onions increase the contamination risk by biological hazards like Salmonella. The objective of this work was to investigate the efficacy of chlorine (200 and 250 ppm), hydrogen peroxide (1.5% and 2%), and lactic acid (1.5% and 2%) sanitisers during different exposure times (40, 60, and 90 s) on the reduction of *Salmonella enterica* subspecies enterica serovar Typhimurium in inoculated fresh green asparagus and green onions. Washing with clean water only reduced less than 1 log₁₀ CFU/g in both vegetables. The most effective sanitiser evaluated for fresh green asparagus and green onions disinfection appeared to be 2% lactic acid reducing Salmonella growth close to 3 log₁₀ CFU/g. Hydrogen peroxide was the least effective agent for *S. Typhimurium* reduction. No effect was observed of the exposure time of inoculated product to sanitiser up to 90 seconds. These results confirm that lactic acid could be used as an alternative for fresh green asparagus and green onions sanitation.