

Title Efficacy of sodium chlorite as a sanitizer in reducing microbial populations and improving the quality of fresh-cut broccoli florets

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Abstract

Fresh-cut broccoli florets were dipped in 500, 750 and 1,000 ppm of sodium chlorite (SC) solution for 1 min and then stored at 4°C for 12 days. Floret samples were dipped in tap water as control. In this study, the effect of sodium chlorite (SC) solution on microbial populations (*E. coli*, *Salmonella* spp., total bacteria, and yeast and mold) and the qualities of fresh-cut broccoli florets during storage at 4°C were determined. On initial day storage, SC solution had significant effect on reduction of *Salmonella* spp. population approximately 3 log CFU/g on fresh-cut broccoli florets. 750 and 1,000 ppm of SC solutions controlled *Salmonella* spp. population for more than 3 days of storage. However, higher concentration of SC solution could not maintain product quality. High concentrations caused tissue damage and turned brown after 9 days storage but they did not affect weight loss, floret color, sensory attributes and chlorophyll content as compared to the control. Our results suggested that 500 ppm of SC solution could be used and suitable for reducing microbial population and also to maintain quality of fresh-cut broccoli florets better.