

Title Effect of ozonated and chlorinated water on quality of fresh-cut cauliflower and basil
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Abstract

Food safety is an important issue to reduce consumers' risk of foodborne outbreaks. Vegetables have been found as a source of contamination from pathogenic microorganisms. The best method to reduce pathogens from vegetable is to prevent contamination. Therefore, the washing process is a solution to decrease the microbial load on vegetables and to provide consumer safety. The objectives of this study were to determine the effect of washing with ozonated and chlorinated water on the reduction of microbial load and on the shelf life of fresh-cut cauliflower and fresh-cut basil compared with tap water and unwashed controls and to analyse the effect of these treatments on sensory evaluation. Washing fresh-cut cauliflower with ozonated water ($c(O_3) = 0.31\text{-}0.35$ ppm, $t = 15$ min) reduced the total plate count (TPC) and *E. coli* count (EC) by 1.8 and 1.88 log CFU ml⁻¹, respectively. Ozonated water was more effective than chlorinated water to reduce the microbial load at the same conditions, while chlorinated water washing resulted in a reduction of 0.6 and 0.99 log CFU ml⁻¹ for TPC and EC, respectively. Washing basil with ozonated water reduced TPC and EC by 0.39 and 0.66 log CFU ml⁻¹, respectively. This reduction of microbial load was similar to the result of chlorinated water washing (0.23 and 0.37 log CFU ml⁻¹ for TPC and EC, respectively). Fresh-cut cauliflower and basil were stored at 3 and 8°C and stored for 18 and 5 d, respectively. The overall acceptance of fresh-cut cauliflower from ozonated washing had a higher score than from chlorinated washing. However, the overall visual quality of fresh-cut basil from ozonated washing was similar to chlorinated washing. This result shows the potential of ozonated washing method to substitute traditional chlorinated washing to prolong the shelf-life of fresh-cut vegetable.