

Thesis Title	Shelf-Life Extension of Minimally Processed Cucumber and Lettuce by Using Hydrogen Peroxide
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ABSTRACT

This research aimed to extend the shelf-life of minimally processed cucumber and lettuce. The results showed that washing vegetables with 5% hydrogen peroxide (H_2O_2) could extend the shelf-life to 7 days and reduced microbial load 1-2 log CFU/g. Washing cucumber with ozonated water concentrations of $0.08\text{ mg}^3/\text{L}$ while ozone generator switched on could extend the shelf-life to 9 days and reduced microbial load by 1 log CFU/g. The studies on hydrogen peroxide residues after dipping cucumber in 1% ascorbic acid solution showed that H_2O_2 residues could not be detected after 120 minutes. The H_2O_2 residues were not detected in lettuce after dipping in 3% ascorbic acid. The delay time from cutting to packing phase were studied at 0, 30, 60 and 90 minutes and found that cucumber and lettuce should not delay longer than 60 and 30 minutes respectively. Studies on a transport model were simulated by storing vegetables at 5°C for 3 hrs and then transferred to be kept at 5, 8 and 12°C . It was found that shelf life of cucumber and lettuce kept at 5°C was 5 and 3 days with microbial load of 2.20 and 5.24 log CFU/g respectively. But those vegetables stored at 8°C and 12°C had shelf life of 4 and 2 days respectively. It is recommended to store the minimally processed cucumber and lettuce at 5°C to get the best quality for both sensory evaluation and less microbial load.