Abstract

University acidic electrolyzed water (AEW) was generated by electrolysis of a dilute salt solution such as sodium chloride. AEW was obtained from prototype generator made by Hoshizaki Electric Co. Ltd., by means of electrolysis of 0.5% sodium chloride solution. The pH of AEW was 2.7, the oxidation-reduction potential was + 1,100 mv, and the concentration of available chlorine was 35 ppm. AEW is one of the environment-friendly sterilizer for its low level of chloride. Comparison of sterilization effects of AEW and NaOCl was tested on the fresh-cut cabbages. Efficacy of sterilization of AEW was more than NaOCl, which contained 200 ppm of available chorine. Pre-treatment of cut cabbages by alkali electrolyzed water or diluted salt solution such as $NaHPO_4$ was enhanced sterilization effect of AEW. AEW treated fresh-cut cabbages with pre-treatment, viable aerobes were reduced by 2.5 log cfu/g within 10 min. AEW treated fresh-cut cabbages were less browning and chorine smeller than NaOCl treated one. Multiplication of microorganisms on cut cabbages after treatment with AEW was as same as NaOCl treatment. AEW was a superior sterilizer than NaOCl for fresh-cut vegetables for the reason of low level of chloride, same level of elimination effects of microorganisms, and less damages of treatment materials.