

Title Effects of pretreatment waters on microbial control and sanitation of horticultural products
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Abstract

A postharvest precooling procedure using pretreatment water (including ozonated water, electrolized water, and magnetized water) on harvested oriental melon (*Cucumis melo L.*) has been developed to maintain quality for domestic market fruit. The effect of three pretreatment waters (ozonated water, electrolized water, and magnetized water) was evaluated on oriental melon grown during the summer of 2005 at Seongju, Gyeongbuk. Fruit were picked by hand, and treated with ozone water (dissolved ozone 0.6 ppm), electrolized water (chlorine 100ppm, pH 8.3), and magnetized water (20,000 gauss) and then monitored for change of microbial counts on the skin peel. Microorganisms isolated from oriental melons source were cultured and a microbial suspension was applied to the skin peel of oriental melon for 24 hrs at room temperature. After 10 minutes, culture solutions were observed for changes in the microbial counts on the skin peel of oriental melon given different water pretreatments of. All three pretreatment waters were relatively effective on inhibiting microbial propagation by about 1-2 log scale compared to the control with electrolized water the most effective with more than a 3-4 log scale inhibition of microbial growth. Pretreatment of cherry tomatoes with ozone water inhibited microbial propagation by a 2-3 log scale units. Electrolized water completely inhibited growth of all microorganism on cherry tomatoes at 23°C for 6 days. Therefore, use of electrolized water in a washing process for horticultural products has potential to be an effective pretreatment method for controlling harmful microbial contamination.