

Title Effects of postharvest ethanol vapor treatment on quality of sudachi (*Citrus sudachi* hort. ex. Shirai) fruit

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Abstract

Sudachi (*Citrus sudachi* hort. ex. Shirai) fruit is a kind of acid citrus. It rapidly degreens at room temperature. Ethanol treatment retards ripening and senescence of harvested horticultural products. We investigated the effects of postharvest ethanol vapor treatment with ethanol pads on the quality of sudachi fruit to prolong the storage period. Mature green sudachi fruit were packed in a perforated polyethylene bag without (control) or with a 0.3, 0.6, 1, 3 or 6 g ethanol pad as the ethanol vapor treatment and stored at 20degC in darkness. The chlorophyll contents of fruit treated with a 1 g ethanol pad decreased more slowly than those of the control fruit, accompanying suppression of loss of fresh weight. There were no significant differences in the internal quality between the control and ethanol vapor-treated fruit, including total soluble solids (TSS), titrable acidity (TA), TSS/TA ratio, pH, L-ascorbic acid content, and L-dehydroascorbic acid content in the pulp juice. However, peel browning of fruit treated with 3 and 6 g ethanol pads occurred. From these results, it is demonstrated that ethanol vapor treatment of sudachi fruit could retard degreening and suggest the possibility that treatment could prolong the storage period without negative impacts on internal quality.