

Title Effect of TiO₂/light ethylene removal system on maintenance of fruit quality during cold storage in 'Niitaka' pear

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Abstract

This study was conducted to elucidate ethylene removal effects of TiO₂/light system on quality maintenance of 'Niitaka' pears during cold storage. The TiO₂- photocatalyzed oxidation of an amorphous ethylene propylene copolymer containing 75% w/w of ethylene is described. In the system, TiO₂ was adhered to porous material under blue light of 200-450nm. Fruit at commercial maturity were harvested and stored into two cold rooms with and without the system to achieve the change of ethylene concentration. At 2 week interval, ethylene and carbon dioxide were sampled and analyzed by gas chromatography. Fruit firmness, soluble solid content and fruit color were measured also. Using this system ethylene concentration was lower, and carbon dioxide concentration was higher than that of the control. After two months of cold storage using this system, fruit firmness was higher than that of control but there was no treatment effect on fruit color and soluble solids content. Therefore this method of removing ethylene from cold rooms might be effective for maintaining fruit quality during storage.