Title Effect of aminoethoxyvinylglycine dipping treatment on ethylene production and cell wall components of 'Tsugaru' apple fruits during cold storage

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Abstract

This study was conducted to determine the influence on ethylene production and solubility of non-cellulosic neutral sugars in cell wall of apple fruit during storage when 'Tsugaru' apple was treated with AVG solution after harvest. Fruit was harvested on Aug. 20, soaked in AVG 50 and 75 mgL^{-1} solution for 5 minutes, stored in cold storage of $0\pm1°C$ for 60 days. Fruit quality, ethylene production and change of cell wall components were investigated. Fruit firmness and acid content during 60 days of at 0-1°C were much higher in AVG treated fruit than non-treated fruit. Ethylene production ($\mu L.kg^{-1}.hr^{-1}$) of AVG treatment fruits was reduced to 10% that of non-treated fruit. The main non-cellulosic neutral sugars in the cell wall of 'Tsugaru' fruits, were arabinose and galactose in the water, CDTA and Na_2CO_3 soluble fractions, and the changes measured for galactose content was great. The content of arabinose and galactose in non-treated fruit increased as fruit softening progressed. Fruit treated with AVG showed little change in arabinose and galactose content, so it is suggested that these non-cellulosic neutral sugars were not dissolved and adhered to a cell wall. Storage life of 'Tsugaru' fruit increased significantly following postharvest soaking in AVG solution.