

Title Effectiveness of prestorage 1-methylcyclopropane treatment and different ecological conditions on postharvest quality of 'Esme' quince fruit during long term storage

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Abstract

The aim of this study was to determine the effect of 1-MCP treatment and different growing conditions on quality of "Esme" quince (*Cydonia oblonga* Mill.) fruit. The first group of fruit samples were taken from Central Anatolia region (Ankara) during commercial harvest period (Beginning of October) over two years. In order to observe regional effect on postharvest quality and whether 1-MCP is functional on fruit belonging to different regions, in the second year, second group of samples were obtained from Marmara region (Sakarya-Geyve) which is responsible for the highest quince production of Turkey. Fruit were treated with 0 (Control) and 625 nL L⁻¹ 1-MCP at 12°C under gas tight conditions for 24 hours and after treatment, they were stored at 2±1°C and 85-90% RH for six months, upto middle of April. During long term storage period of six months, respiration rate, ethylene production, flesh firmness, soluble solid content titratable acidity, fruit skin and flesh color, weight loss, sensory characteristics and, the level sugar, organic acids and phenolic compounds in fruit flesh were observed monthly intervals. Additionally, data on flesh browning and decay rates were determined at the end sixth month. As a result of this study, 1-MCP treated fruit from both regions and from Central Anatolia region for both years showed lower respiration rate, flesh browning and decay. Moreover they had higher soluble solid content and sensory characteristics than the controls (P<0.05). But positive effect of this compound was not observed on some other characteristics investigated here. Based on especially sensory characteristics and inhibition on flesh firmness, the results suggest that prestorage 1-MCP treatment may be promising preharvest treatment to maintain postharvest quality of quince from both regions.