Modified atmosphere reduces chilling injury of mango fruit during low temperature storage

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Abstract

Fruit of 'Nam Dok Mai' mango were stored at 4°C. This resulted in chilling injury (CI), particularly in the peel which became grayish brown. This was followed by slight discoloration of the pulp. Further discoloration of peel and pulp occurred when the fruit were transferred to 25°C. The produce was also held in plastic packages with and without modified atmosphere (MA). Oxygen levels in the MA packages were about 19.7% and carbon dioxide levels about 2.6%, compared to close to atmospheric concentrations in the non-MA packages. MA packaging reduced CI. Total free phenolics content in the peel was highest in fruit held in MA packages. Phenylalanine ammonia lyase (PAL) and polyphenol oxidase (PPO) activities in the peel were lowest in MA-packed fruit. Total free phenolics might protect against CI. PAL and PPO activities may be causally related to CI-induced browning.