Title The influence of 1-MCP on chlorophyll, antioxidants activity and quality changes in "ever-green" and red pepper fruits after harvest

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Abstract

The main goal of this research was to evaluate the efficacy of 1-methylcyclopropene (1-MCP) on chlorophyll degradation, antioxidants activity and quality parameters of two bell peppers (*Capsicum annuum* L.) cultivars; cv. Silica (an original red cultivar) and cv. H1530 ("ever-green" line) after 18 d storage at 7°C and 3 d at 20°C. Immediately after harvest, fruits were rinsed over brushes at 55°C for 15 s and were exposed to 1-MCP at concentrations of 300 nl/L or 450 nl/L for 24 h at 20°C prior to storage and shelf-life simulation. In both cultivars, 1-MCP at concentration of 450 nl/L was significantly more effective in reducing weight loss, maintaining firmness, reducing decay incidence, and inhibiting color development, than 300 nl/L and untreated control fruit. However, the color inhibition of green-harvested red cv. Silica was significantly more affected by 1-MCP at 450 nl/L, then 'ever-green' cv. H1530.1-MCP treatment reduced the rate of lipophilic antioxidant activity (LAA). The hydrophilic antioxidant activity (HAA) remained practically unchanged after storage period in comparison on the beginning of storage. In green pepper fruits, the HAA:LAA ratio was 1:5 and 1:8 depending on postharvest treatment (1-MCP, 300 or 450 nl/L) and cultivars differences.