

Title Ethylene production ripening and storage performance of plum fruit (*Prunus domestica* L.) treated in preharvest with ethephon and 1-MCP prior to storage

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Abstract

During the last 3 weeks of plum fruit ripening on the tree, softening progressed gradually. Spraying trees with ethephon twice, two weeks apart, within this period only slightly accelerated fruit softening on the tree, but it affected their postharvest softening during storage at -0.5°C . The earlier spraying was not as effective as the later one. In addition, softening of plums treated on the tree with ethephon was considerably faster than untreated ones during shelf life period at room temperature especially after longer storage at -0.5°C . 1-MCP treatment of plums before placing them into storage room inhibited softening, particularly those treated preharvest with ethephon. Firmness of 'Cacanska Najbolia' plums not treated with ethephon remained almost unchanged during 8 weeks storage at -0.5°C and application of 1-MCP did not improve their storage performance. From all plum cultivars grown in Poland this one possess the highest storage potential at -0.5°C . However, when these plums are stored at $3-4^{\circ}\text{C}$ the internal breakdown development had commenced by the fourth week of storage.