

Title Effect of 1-methycyclopropene n ripening of two papaya (*Carica papaya* L.) cultivars

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Abstract

Two separate experiments were conducted to determine the response of 'Solo' and 'Sinta' papaya fruits harvested at color break stage to 1-methycyclopropene (1-MCP). In the first experiment, 'Solo' papaya fruits were exposed to 0.1 or 0.5 μl^{-1} 1-MCP for 24 h prior to storage at 13°C for 18 days. This was followed by ethephon treatment upon transfer at 25°C for ripening. The second experiment consisted of treating 'Sinta' papayas with the same concentration of 1-MCP but fruits were kept at ambient condition (25-28°C).

Regardless of the cultivar and storage condition, 1-MCP significantly retarded the ripening of papaya fruits. At 13°C, MCP-treated 'Solo' papayas remained at color break stage for 23 days. In the case of 'Sinta' papayas, ripening was delayed for about 6 days at 25-28°C. Respiration rate and ethylene production of 1-MCP-treated fruits were greatly suppressed and no distinct climacteric was observed. Upon treatment with ethephon, only non-MCP-treated fruits softened to table ripe stage. 1-MCP-treated fruits on the other hand, remained hard although the flesh attained the full orange ripe color. Rubbery pulp texture was noted in some fruits.

The onset of stem end rot and anthracnose resulted in reduced shelf life. 1-MCP only reduced the severity of infection but not delay its onset as well as incidence.