

Response of 1-methylcyclopropene on postharvest quality of local soursop (*Annona muricata* L.)

ABSTRACT

Soursop (*Annona muricata* L.), a climacteric fruit which is rich in bioactive compounds for use in medicine. It produces an aromatic, sweet-sour and pleasant taste. However, there is a limitation in the fruit being able to reach distant markets. Its quick ripening and accentuated softening properties make it difficult to handle without damage and shorten its postharvest life. In order to reduce lost value during storage life, this study aims to investigate the effect of 1-Methylcyclopropene (1-MCP) treatment on the fruit's postharvest life including its physiological and physiochemical characteristics. Selected soursop fruits were harvested at 16 weeks after pollination and treated with various concentrations of 1-MCP (0, 400, 800 and 1200 nL/L) at 15°C + 3°C for 24 h and subsequently being stored at ambient temperature (25°C + 3°C). Observations on various physical, physiological, biochemical and antioxidants parameters were recorded at two-day intervals 6 days of storage. The results showed that respiration rate and ethylene production in 1-MCP treated fruit were lower than those in the control batches. Further, the pulp of 1-MCP treated fruits remained firm and colour was retained throughout the observation period. Soursop treated at different 1-MCP concentration (0, 400, 800 and 1200 nL/L) showed that fruit treated with 400 nL/L had better ripe fruit quality. In addition, 1-MCP treated fruits were able to normally soften at day six after storage. However, antioxidant capacity, total phenolic content, and total flavonoid content of fruits from all treatments were found inconsistent during storage.

Keyword: Colour; Firmness; Soursop; 1-MCP