

**Title** Effects of 1-MCP and controlled atmosphere storage on fruit quality and volatile emission of 'Nam Dok Mai' mango

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#### **Abstract**

'Nam Dok Mai' mangos have a high potential to become a major export fruit crop in Thai, and its export increases year by year. This study assessed aroma volatiles profiles and fruit quality following a 500 ppb 1-methylcyclopropene (1-MCP) treatment and controlled atmosphere storage (3%O<sub>2</sub>+5%CO<sub>2</sub>) at 13°C. The controlled atmosphere storage revealed to be the most effective way to delay fruit yellowing and weight loss, while 1-MCP most effectively maintained firmness and suppressed ethylene production. The production of aroma volatile compounds emitted during the storage was studied using headspace solid phase microextraction/ chromatography mass spectrophotometry (SPME/GC-MS) technique. [Z]-3-Hexen-1-ol was found to distribute in fruit at all storage periods in all treatments. After 12 days of storage, butyl butanoate emerged from non-treated fruit when the fruit initially ripened. At day 28, fruit stored under CA accumulated high levels of ethanol while 1-MCP-treatment mainly suppressed volatile emission.