

## Sprouting of Chayote (*Sechium edule* (Jacq.) Sw.) as Influenced by Various Postharvest Treatments

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### Abstract

Chayote, a gourd which has good nutritional properties, is one of the vegetable crops in the Philippines with inadequate information on its inhibition or promotion of sprouting upon application of postharvest treatments. A sturdy crop, it can be grown in a wide range of climatic conditions. In this study, different postharvest treatments were applied on newly harvested chayote fruit to evaluate sprout growth and other postharvest characteristics. Treatments included passive modified atmosphere packaging using cling wrap, 1-methylcyclopropene (1-MCP, 500 and 2500  $\mu\text{L}\cdot\text{L}^{-1}$ ), ethephon (100 and 500  $\mu\text{L}\cdot\text{L}^{-1}$ ) and gibberellic acid ( $\text{GA}_3$ , 100 and 500  $\mu\text{L}\cdot\text{L}^{-1}$ ). Samples were stored under ambient conditions ( $26.51\pm 1.38$  °C and  $81.11\pm 7.03\%$  RH). Untreated chayote fruit sprouted 13.5 d after treatment while cling wrapping delayed the onset of sprouting by 8 d. Sprouts were longest when treated with 500  $\mu\text{L}\cdot\text{L}^{-1}$  ethephon and shortest at 2500  $\mu\text{L}\cdot\text{L}^{-1}$  1-MCP. Contrary to reports on other horticultural crops, 1-MCP promoted higher degree of decay and higher weight loss in chayote, resulting in deterioration of quality and shorter shelf life. Weight losses at 10 d of storage ranged from 2.07% (cling wrap) to 6.88% (1-MCP). Cling-wrapped fruit exhibited an early onset of decay at two weeks next to fruit treated with 1-MCP. Starch content decreased during storage. Weight loss, degree of decay, visual quality, shelf life, and onset of sprouting of  $\text{GA}_3$ -treated fruit were similar with the control. Cling-wrapped fruit delayed sprouting in chayote but not the other treatments in this study.