

THE EFFECT OF 1-METHYLCYCLOPROPENE (1-MCP) ON POSTHARVEST QUALITY OF AVOCADO CV. 'POLLOCK'

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Avocado is a climacteric fruit characterized by a sudden increase in ethylene production at the onset of ripening. Mature avocado fruits ripen fast during storage under tropical conditions and their postharvest quality is often deteriorated due to mechanical damage and fungal rots. The effect of 1-methylcyclopropene (1-MCP), an ethylene action inhibitor, on postharvest quality of avocado cv. 'Pollock' fruits was examined. Fruits harvested at commercial maturity were exposed to 300 nll⁻¹ 1-MCP gas for 20 h under 27 ± 2 °C. Upon 1-MCP treatment, fruits were stored under ambient conditions (room temperature 27 ± 2 °C and relative humidity 65 ± 2 %) and assessed daily for quality parameters including fresh weight, firmness, skin colour, fungal rot development (% area of fruit under disease) and surface glossiness. Six replicate fruits per treatment were used in the experiments.

Exposure to 1-MCP extended the shelf life of fruits by 2- fold compared to non-treated fruits. Stem end rot was considered as the shelf life-determining factor of avocado cv. 'Pollock' fruits. The causative agent of the stem end rot was identified as *Botryodiplodia theobromae*. 1-MCP-treated fruits retained their glossiness and firmness significantly (P < 0.05) for longer period. Peel colour development from dark green to greenish yellow was also delayed significantly with 1-MCP treatment. Time taken to appear stem end rot also delayed by 2-fold in 1-MCP- treated fruit against controls. According to this study, 1-MCP treatment does not appear to play a direct role in reducing the stem end rot during storage. Appearance of rot symptoms delayed through 1-MCP-mediated delay in ripening-related changes of the fruit. Thus, postharvest application of 1-MCP has a great potential to extend the shelf life of avocado fruits during storage under tropical conditions. Therefore, this will be useful for avocado growers in order to reduce postharvest losses and extend marketing period which help them to access distant markets and diversify export market system.