**Title** Response of papaya ('Eksotika') fruit to different 1-methylcyclopropene concentrations

**Author** Z.M. Ali and S.M. Mamat

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**Abstract**

Treatment of papaya (*Carica papaya* L.) 'Eksotika' at the 5% yellow stage of maturity with 1-methylcyclopropene (1-MCP) at 90 or 270 ppb for 12 h, and subsequent storage at ambient temperature, delayed reaching full yellow skin colour from day 6 for control fruit to day 10 and day 12 for the 90 and 270 ppb 1-MCP treated fruit, respectively. Softening was delayed and mesocarp tissues attained acceptable softness when treated with 90 ppb 1-MCP. However, exposure to 270 ppb significantly retarded fruit softening. Fruit at an advanced stage of maturity (25% yellow) treated with 90 ppb 1-MCP took 8 days to reach full colour compared to 4 days for the non-treated fruit, and softening was slightly delayed. Activities of antioxidant enzymes in fruit treated at the 5% yellow stage with 90 or 270 ppb 1-MCP were measured. 1-MCP at both 90 and 270 ppb had the same effect on antioxidant enzyme activity. Superoxide dismutase (SOD) activity was enhanced whereas catalase (CAT) and ascorbate peroxidase (APX) were maintained at about the same level in both 90 and 270 ppb 1-MCP-treated fruit as control fruit. This suggests that 1-MCP may influence antioxidant capacity of fruit. Overall, for 'Eksotika' papayas to be stored at ambient temperature, treatment of fruit at the 5% yellow stage of maturity with 90 ppb 1-MCP seems promising for retarding ripening, maintaining quality including tissue softness, and perhaps also improving the antioxidant capacity of the fruit.