

Abstract

Post-ripening 1-methylcyclopropene (1-MCP) exposure was examined throughout the year to determine the influence of time of year at harvest on the effect of 1-MCP on shelf life and quality of bananas. Green Cavendish bananas (var. 'Williams') from the middle section of the bunch were harvested bimonthly during 2004 and treated with $100 \mu\text{L L}^{-1}$ ethylene on two consecutive days prior to 0, 100, 700, 1000, 3000 or 10000 nL L^{-1} 1-MCP exposure for 24 hrs at 22 °C. Treated bananas were then stored at 22 °C until the end of the experiment. 1-MCP treatment at a concentration of 300 nL L^{-1} or above increased banana shelf life significantly compared to the control, regardless of whether fruit was harvested in different months. However, fruit harvested in May was significantly more responsive with 108% increase in shelf life. Interestingly, this was not significantly correlated with the quality parameters: firmness, weight loss or total soluble solids (TSS). Firmness of 1-MCP treated fruit was up to 19% greater than the control except in January where no effect occurred. In general, lower levels of weight loss and discolouration were observed in 1-MCP treated fruit regardless of harvest time while 1-MCP had no effect on TSS.