

Title Pericarp hardening in mangosteen (*Garcinia mangostana* L.) as affected by modified atmosphere packaging and 1-methylcyclopropene

Author Emma Ruth Bayogan and Danica Riza V. Delgado

Citation Book of abstracts, APS2010 & SEAsia2010 & GMS2010, August 2-4, 2010, Radisson Hotel, Bangkok, Thailand

Keyword Mangosteen; 1-MCP; MAP

Abstract

The effect of modified atmosphere using cling wrap (1.2×10^{-2} mm) and polyethylene bags (4.17×10^{-2} mm) as well as the use of 1000 nL L^{-1} 1-methylcyclopropene (1-MCP) in an airtight container for 4 h on two mangosteen fruit maturities, light purple with green streaks (M1) and reddish purple (M2), were determined. Regardless of fruit maturity, weight loss was highest in the control treatment followed by 1-MCP, cling wrap and polyethylene bags. In both M1 and M2 fruit, browning and shriveling of the sepals (rating of 2) as well as visual quality (rating of 4) were delayed by more than 7 days, respectively, when cling-wrapped, held in polyethylene bags or treated with 1-MCP. At 15 days after treatment (DAT), electrolyte leakage was significantly lesser in treated fruit compared with the untreated control. Lignin content increased in all treatments during storage with lower levels observed in treated fruit. Pericarp firmness was significantly higher in the untreated control at 9DAT (M2) and 12DAT (M1) with fruit in the three treatments showing very slight increases in firmness. Relative to the untreated control, the onset of pericarp hardening, disease occurrence and shelf life termination were significantly delayed by modified atmosphere packaging and 1-MCP by up to over 30%. Except for lignin content at 12 DAT, there was however no significant difference among the two fruit maturities as well as among the three treatments (cling wrap, polyethylene bag, and 1-MCP) in terms of days to pericarp hardening, days to disease occurrence, and shelf life.