Title Antioxidant profiles of ripening papaya treated with 1-methylcyclopropane

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Abstract

The effect of 1-methylcyclopropane (1-MCP), an inhibitor of ethylene action, On antioxidant profiles of ripening Eksotika papaya was investigated through the analysis of enzymatic (superoxide dismutase, SOD; catalase, CAT; ascorbate peroxidase, APX and peroxidase, POD) and non-enzymatic antioxidants (ascorbic acid, anthocyanins and total phenolic) as well as lipid peroxidation. Papaya fruits (5% yellow ripening stage) exposed to 1-MCP (270 ppb for 12 h) and then allowed to ripen at ambient temperatures were compared to untreated (control) fruits. Application of 1-MCP delayed skin colour development to 12 days compared to 6 day for the control and retarded firmness loss significantly. 1-MCP also suppressed and delayed the increase in lipid peroxidation and maintained the level of some antioxidants in the fruits particularly and activity of SOD, CAT, POD and APX. The presence of relatively high levels of these antioxidants in the 1-MCP treated fruits may retard development of oxidative stress in the tissues thus delaying the ripening of the fruit.