Title Effect of 1-methylcyclopropene (l-MCP) on senescence of peeled water bamboo shoot (*Zizania caduciflora*) during different storage periods

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Abstract

Peeled water bamboo shoots (*Zizania caduciflora*) were treated with 0.5 µl/L of 1-MCP for 20 h at 20°C, and then placed into 20 and 2 °C with 90%-95% RH to examine the effects of 1-MCP on delay senescence of postharvest water bamboo shoot. Shoot firmness, ethylene production rate and contents of lignin and cellulose were measured. 1-MCP treatment not only delayed the time of ethylene production peak of shoots stored at 20°C but also reduced the peak value of ethylene production in those shoots that held at 2°C, while shoots with treated 1-MCP retained greater firmness than those of non-treated with 1-MCP during both 20°C and 2 °C storage. In addition, peeled shoots with 1-MCP treated kept low level of lignin and cellulose compared with the control during either 20°C or 2°C storage. These results suggested that 1-MCP could inhibit the ethylene production, delay the softening and inhibit the fibrosis of peeled water bamboo shoots during room and low temperatures. Therefore, 1-MCP treatment could be an effective method to delay the senescence and extend the storage life of water bamboo shoot.