

Title Delay ripening of ‘Qingnai’ plum (*Prunus salicina* Lindl.) with 1-methylcyclopropene
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Abstract

‘Qingnai’ plum fruit were treated with 0, 250, 500 or 1000 nL L⁻¹ of 1-methylcyclopropene (1-MCP) for 6 h and stored at 20 °C. The fruit firmness, peel color, chlorophyll content, titratable acidity (TA), respiration rate and ethylene production, chlorophyllase, pectin methylesterase (PME) and polygalacturonase (PG) activities were monitored during postharvest ripening of ‘Qingnai’ plums. ‘Qingnai’ plums without 1-MCP treatment soften very rapidly at room temperature after harvest, showing a continuing decrease in hue angle, chlorophyll content, TA and increase in chlorophyllase, PME and PG activities during postharvest storage. In contrast, the 1-MCP-treated fruits showed reduced ethylene production and respiration rate and delayed softening, which was associated with the reduction in the activity of PME and PG. The 1-MCP treatment also significantly inhibited the chlorophyllase activity and peel color development in ‘Qingnai’ plums during postharvest ripening at 20 °C. These results suggest that 1-MCP treatment may be useful for maintaining the fruit quality and extending the postharvest shelf-life of ‘Qingnai’ plums.