

**Title** Hot water dipping induced chilling resistance of harvested banana fruit  
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### **Abstract**

Banana fruit are highly susceptible to chilling injury during storage at low temperature. The effects of hot water dipping (HWD) on chilling injury index, cell membrane permeability, H<sub>2</sub>O<sub>2</sub> content, and changes in activities of catalase (CAT), ascorbate peroxidase (APX), and Ca<sup>2+</sup>-ATPase of harvested banana fruit were investigated. Banana fruit were dipped for 3 min. into hot water at 52°C and then stored at 7°C for 10 days. The chilling injury index of banana fruit stored at 7°C gradually increased. Application of HWD reduced the chilling injury of the fruit, suggesting its putative role in increasing chilling resistance. This increased chilling resistance by HWD was further examined. HWD-treated banana fruit exhibited lower levels of membrane permeability and H<sub>2</sub>O<sub>2</sub> content, and higher activities of CAT and APX in peel tissues. It was also found that HWD induced the activity of Ca<sup>2+</sup>-ATPase of banana fruit, implying the possible involvement of calcium signaling in increased chilling resistance of the fruit.