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‘徐香’猕猴桃采收后逐步降温处理对果实冷害、品质和活性氧代谢的影响

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Effects of Different Cooling Modes on Chilling Injury, Quality and Active Oxygen Metabolism in Harvested ‘Xuxiang’ Kiwifruits

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摘要 研究了直接降温和3 种逐步降温处理对‘徐香’猕猴桃果实冷害、品质和活性氧代谢的影响。结果表明：逐步降温处理有效降低冷藏猕猴桃果实的冷害指数和冷害率，并保持较高的好果率和货架期品质；显著减少膜脂过氧化产物丙二醛的积累和抑制细胞膜透性的增加，保持较高的超氧化物歧化酶、过氧化氢酶及抗坏血酸过氧化物酶活性和较低的脂氧合酶活性，并降低超氧阴离子自由基生成速率和过氧化氢含量。这表明，逐步降温减轻‘徐香’猕猴桃果实冷害的发生与活性氧清除酶活性的提高，及活性氧积累的降低有关。3 种逐步降温中，10 ℃→5 ℃ 2 d →2 ℃ 2 d→0 ℃ ± 0.5 ℃逐步降温对冷害的控制效果更为显著。

关键词： 猕猴桃 采后 冷害 降温 活性氧代谢

Abstract： Abstract：The effects of direct cooling and gradual cooling on chilling injury, fruit quality and active oxygen metabolism in kiwifruit（Actinidia deliciosa ‘Xuxiang’）during cold storage were investigated. The results showed that the gradual cooling treatment significantly reduced chilling injury index and chilling injury incidence, maintained higher accepted fruit percentage and shelf-life quality, and inhibited the accumulation of malonaldehyde and the increase in membrane permeability. Moreover, the gradual cooling treatment maintained higher activities of superoxide dismutase, catalase and ascorbate peroxidase, and lower activity in lipoxygenase than direct cooling fruit during the storage, and kept lower levels of superoxide anion production rate and H2O2 content. These results indicate that gradual cooling treatment retard chilling injury in ‘Xuxiang’ fruit which may be related to enhancing the activities of active oxygen scavenging enzymes and reducing the accumulation of active oxygen. The gradual cooling（10 ℃→5 ℃ for 2 days→2 ℃ for 2 days→0 ℃ ± 0.5 ℃）had a better effect.

Keywords： kiwifruit, postharvest, chilling injury, cooling, active oxygen metabolismpostharvest, chilling injury, cooling, active oxygen metabolismpostharvest, chilling injury, cooling, active oxygen metabolism

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