

Title Influence of salicylic acid treatment on antioxidant properties of 'Red Delicious' apple during cold storage

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Citation Book of abstracts, APS2010 & SEAsia2010 & GMS2010, August 2-4, 2010, Radisson Hotel, Bangkok, Thailand

Keyword Apple; antioxidant; cold storage

Abstract

The effects of salicylic acid (SA) on total phenolic and anthocyanin content of Red Delicious apple and their correlation with antioxidant capacity (DPPH), during cold storage were studied. Harvested fruits of Red Delicious were treated by salicylic acid (SA) at four concentrations, 0, 1, 2 and 4 mmol/L and stored at 0°C (up to seven months. Results showed that the use of SA improved the keeping quality of fresh apples in prolonged cold storage. During cold storage, the total phenolics and total antioxidant capacity were increased considerably. In addition, total phenolic contents and total antioxidant capacity were higher in SA treated apples during storage. The highest content of total phenolics was obtained in 4 mmol/L. However, the highest content of antioxidant capacity was obtained in 1 mmol/L SA, which showed no significant differences with 2 mmol/L SA treated fruits. Contrary, a slight decrease in anthocyanin content was observed during long-term cold storage. Lowest anthocyanin content was observed in SA treated fruits. By increasing SA concentration, anthocyanin content significantly decreased. As a conclusion, these results demonstrate SA potential for increasing apple storage life and quality.