

The biocontrol of postharvest decay of table grape by the application of kombucha during cold storage

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Abstract

Grapes are susceptible to fungal infection and decay after harvest. The objective of this study was to investigate the effects of kombucha on postharvest fresh-keeping in table grape (*Vitis vinifera* cv. Fujiminori). Here, we studied the effects of kombucha on the fruit quality and antioxidant system of grape at 4 °C storage. The fruits of grape were dipped into water or kombucha for 15 min and then stored at 4 °C. The physical parameters of fruits, such as the good fruit rate, fruit hardness, contents of soluble solid, ascorbic acid (Vit C) and malodialdehyde (MDA), and activities of the antioxidant enzymes were measured during storage. The application of kombucha reduced deterioration of table fruit during cold storage. The kombucha treatment also delayed the decrease in fruit hardness, soluble solid and Vit C contents, and inhibited the MDA accumulation in grape during storage. Furthermore, fruit treated with kombucha showed significantly higher activities of polyphenol oxidase, peroxidase, catalase and superoxide dismutase with a significantly lower MDA accumulation at the late stage of storage compared the control. Our findings suggested that kombucha application was useful in inhibiting postharvest decay of table grape fruit and appeared to have potential for commercial application to store table grape at cold storage.