

Title Study on the effects of chitosan in preserving some qualitative factors of table grape (*Vitis vinifera* cv. Shahroudi)

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Abstract

Grape as a perishable fruit is exposed to fungal infection especially *Botrytis cinerea* as an agent of gray mold, therefore its storage life is very short. Currently, gray mold is controlled by canopy management, preharvest fungicide applications and postharvest sulfur dioxide fumigation. However, alternatives to sulfur dioxide are desirable because it can cause bleaching of the berries and browning of the rachis, and its residues can be harmful to people allergic to sulfites. Chitosan, a natural biopolymer with antifungal and eliciting properties is able to reduce postharvest decay of table grapes. 'Shahroudi' table grapes, undergoing deterioration were selected as model fruit with *Botrytis cinerea*, to test the antifungal activity of chitosan. In this paper, the effectiveness of chitosan to control postharvest decay and quality of 'Shahroudi' grape berries stored at 0-2 °C was investigated. Chitosan treatment significantly reduced postharvest fungal decay of the fruit infected with *B. cinerea* compared to controls. Differences in weight loss, color change, ripening and sensory quality between grapes treated with chitosan and control fruit suggested that chitosan had antifungal activity. Moreover, the sensory analyses revealed beneficial effects in terms of delaying rachis browning and dehydration and maintenance of the visual aspect of the berry without detrimental effects on taste, or flavor.