**Title** Postharvest grapefruit seed extract and chitosan treatments of table grapes to control *Botrytis cinerea*

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**Abstract**

'Redglobe' table grapes (*Vitis vinifera* cv. Redglobe), undergoing deterioration were selected as model fruit with, *Botrytis cinerea*, to test the antifungal activity of grapefruit seed extract (GSE) in vitro and in vivo. The results of inhibition of spore germination and radial growth of *B. cinerea* in vitro indicated that GSE could efficiently inhibit the growth of the tested fungi.

The effectiveness of GSE and chitosan to control postharvest decay and quality of 'Redglobe' grape berries stored at 0–1 °C was also investigated. Chitosan and GSE treatments, alone or combined, significantly reduced postharvest fungal rot of the fruit compared with controls challenged with *B. cinerea*. Differences in weight loss, color change, ripening, sensory quality and microorganism index between grapes treated with GSE and control fruit suggested that GSE had both antifungal and antioxidative 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 flavour. GSE and chitosan might have a synergistic effect in reducing postharvest fungal rot and maintaining the keeping quality of 'Redglobe' grapes.