Title UV-C induced disease resistance to *Botrytis cinerea* in stored carrot is not a systemic effect

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Abstract

The induction of disease resistance by UV-C in postharvest horticultural crops has been well established. However, little is known about whether resistance is systemic or localized. Crowns of mature carrot roots, either covered with aluminium foil or uncovered, were exposed to 4 doses of UV-C (2.5, 5.4, 8.1 and 10.8 kJ/m^2) emitted by a bank of germicidal lamps (peak emission at 254 nm). UV-C treated carrots were then stored at 4°C and relative humidity of about 95%. Twenty-eight days after UV-C treatment, the carrots were challenged with *Botrytis cinerea*. Disease resistance was monitored by measuring the surface of lesions caused by the pathogen. The results suggest that the UV-C did not have any systemic effect, and the observed disease resistance was local, and was induced only in carrots directly exposed to the radiation. The lack of systemic effect may be attributed to the absence of the salicylic acid (SA) signalling network induced by UV-C in carrot.