

**Title** Blue light alters infection by *Penicillium digitatum* in tangerines  
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### Abstract

The effect of blue light exposure on *Penicillium digitatum* infection of tangerines during postharvest storage was investigated. In citrus, *P. digitatum* is one of the most important fungi causing diseases that result in postharvest loss. There is increasing interest in development of environmentally sustainable and consumer-friendly strategies of decay control. Strategies based on a plant's immunity can minimize pathogen infection of fruit. Light signalling affects plant–pathogen interactions and blue light may modulate phospholipase activation, a key step in plant immune responses. Exposure of fruit to 410–540 nm blue light at a fluency of  $40 \mu\text{mol m}^{-2} \text{s}^{-1}$  reduced infection by *P. digitatum* and induced phospholipase A<sub>2</sub> (PLA<sub>2</sub>) gene expression. Inhibition of PLA<sub>2</sub> activity allowed infection, whereas inhibition of phospholipase D (PLD) expression by 580–670 nm red light at the same fluency was correlated with infection. These data strongly suggest that induction of lipid signalling by light reduces fungal colonization by *P. digitatum* in citrus fruit.