

**Title** Brief potassium sorbate dips to control citrus postharvest green and blue molds  
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### **Abstract**

Alternatives to conventional chemical fungicides to control citrus green and blue molds are needed to reduce health and environmental risks. Treatments for 2-3 min with 2-3% potassium sorbate (PS) solutions heated to 40-50°C have shown value to reduce these diseases. However, for commercial reasons, shorter treatments are desirable. Different Spanish citrus species and cultivars were artificially inoculated with *Penicillium digitatum* or *Penicillium italicum* ( $10^6$  spores/ml) and, 24 h later, immersed in water (control) or aqueous solutions of 3% PS (w/v) at 20, 53, 58, 62, 65, or 68°C for 5, 15, 30, or 60 s, depending on the experiment. Treated fruit were rinsed with tap water at low pressure and disease incidence was assessed after incubation at 20°C for 7 days. While on 'Clemenules' or 'Nadorcott' mandarins, the application of PS at 62°C for 30 or 60 s only reduced green and blue moulds up to 25 and 15%, respectively, on 'Ortanique' mandarins both moulds were reduced by more than 80%. Immersion of 'Valencia' oranges in PS solutions at 62°C for 5, 15, or 30 s reduced green and blue moulds by 18, 88, and 62% and 38, 95, and 92%, respectively. Disease reductions after treatment at 65 or 68°C for 5 s reached 50 and 64%, respectively. On 'Fino' lemons, both moulds were reduced by about 50% after treatment with PS at 62°C for 15 or 30 s. The use of brief dips at higher temperatures may increase the suitability of PS treatments as an alternative commercial control mean. The influence of cultivar and application conditions on PS effectiveness is discussed.