

# Integrating pre and postharvest 'Nil fungicide residue' treatments for control of brown rot of stone fruits caused by *Monilinia fructicola*

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## Abstract

The aim of this investigation was to evaluate pre- and postharvest options for control of brown rot (caused by *Monilinia fructicola* (Wint.) Honey) with a view to replacing the fungicide, iprodione. In the absence of pre-harvest iprodione applications, brown rot losses were high (average 22 infected fruit per tree). Pre-harvest applications of a prototype mixture, containing chitosan, sodium salicylate and calcium chloride (CSC) significantly reduced the number of infected fruit per tree to an average of 12 in a season that was highly favourable to brown rot infection. Two promising postharvest treatments were also evaluated. In the absence of postharvest treatment, brown rot incidence after cool storage and 4 days of incubation at room temperature was 56%. The most effective postharvest treatment was a fruit dip in a heated sodium bicarbonate solution (60°C), which significantly reduced postharvest brown rot by up to 75%. This treatment was significantly more effective at reducing postharvest brown rot than the sanitiser product, Proxitane® (0.6%). These preliminary findings suggest that the integration of pre-harvest applications of new natural product formulations and a postharvest treatment with the GRAS (generally regarded as safe) compound sodium bicarbonate, has potential for use against brown rot of stone fruits.