Title	Effects of pre-harvest foliar calcium sprays on fruit calcium levels and brown rot of peaches
Author	P.A.G. Elmer, T.M. Spiers and P.N. Wood
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Abstract

Brown rot of stonefruits caused by *Monilinia fructicola* (Wint.) Honey continues to be responsible for significant crop losses in New Zealand despite the application of recommended fungicides. The goal of our research programme is to substantially improve brown rot management and in the first part of a multi-year programme, we investigated the hypothesis that supplementing a brown rot fungicide spray programme with calcium (Ca) reduces brown rot incidence. A range of commercially available Ca products were applied to peach (*Prunus domestica* L.) trees (cv. 'Scarlett O'Hara') at two weekly intervals from 3–5 November until fruit harvest (January 2001 and 2002) in the Hawke's Bay region of New Zealand. Calcium content of the peach epidermis was significantly increased by at least 50% by Ca sprays, compared to unsprayed fruit in both seasons. Increasing the Ca content of fruit significantly reduced the incidence and severity of *M. fructicola* infections in fruit disk assays. Pre-harvest Ca applications also significantly reduced the number of brown rot infected fruit per tree at harvest and the incidence of postharvest rots. The integration of Ca foliar sprays into current brown rot management practices has been widely adopted by stone fruit growers in New Zealand as a practical tool to reduce brown rot losses.