

**Title** The effect of calcium dips combined with mild heating of whole kiwifruit for fruit slices quality maintenance

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### **Abstract**

The effect of moderate heat treatment combined with calcium dips on the quality of minimally processed kiwifruit was studied. Whole fruits were treated for 25 min at 45 °C by dipping in deionised water or CaCl<sub>2</sub> solutions (1%, 2% and 3% (w/v)) and cooled to 4 °C. Twenty-four hours later fruits were peeled, sanitized, cut into slices and packed. The firmness of kiwifruit slices' was subsequently evaluated during 8 days of storage. Calcium content, pectinmethylesterase activity and heat shock proteins accumulation were also investigated. Heat treatment conducted in water induced a firming effect and avoid softening of fruit slices while calcium dips had a marginal effect on this parameter. A calcium loss was observed due to dip treatment, but this effect was minimized when treatment was conducted in 3% CaCl<sub>2</sub> solution. The firming effect provided is due to the activation of pectinmethylesterase and the presence of calcium in treatment solution reduces or inhibits enzyme activation. Under the tested conditions, no heat shock proteins de novo synthesis was detected.