

## **Abstract**

Punnetted litchis are prone to rot development. We examined the use of hot water treatments to control rots, with 2 min or 5 min dips at 48 °C, 50 °C or 52 °C in one experiment, and 1 min, 2 min, 3 min, 4 min or 5 min dips at 52 °C in another. We also compared the benefits of a 1 min 52 °C hot water dip with a 1 min 52 °C hot water spray.

The most effective hot water dip was 1 min at 52 °C, which slowed the rate of rot development by approximately 15%. The hot water spray was equally effective as the hot water dip. On the basis of comparisons with other studies, a hot water spray was about half as effective as a hot benomyl dip.

A model was used to simulate the temperature profiles within a 30 mm diameter spherical fruit during a 1 min dip at 52 °C. At the end of the dip there was a steep temperature decline from the surface to the center of the fruit, consistent with a heat pasteurization effect largely restricted to the pericarp.

The hot water treatments caused immediate effects on pericarp colour, with a positive linear correlation between dip time at 52 °C and chroma, indicating disturbance of pericarp cells.